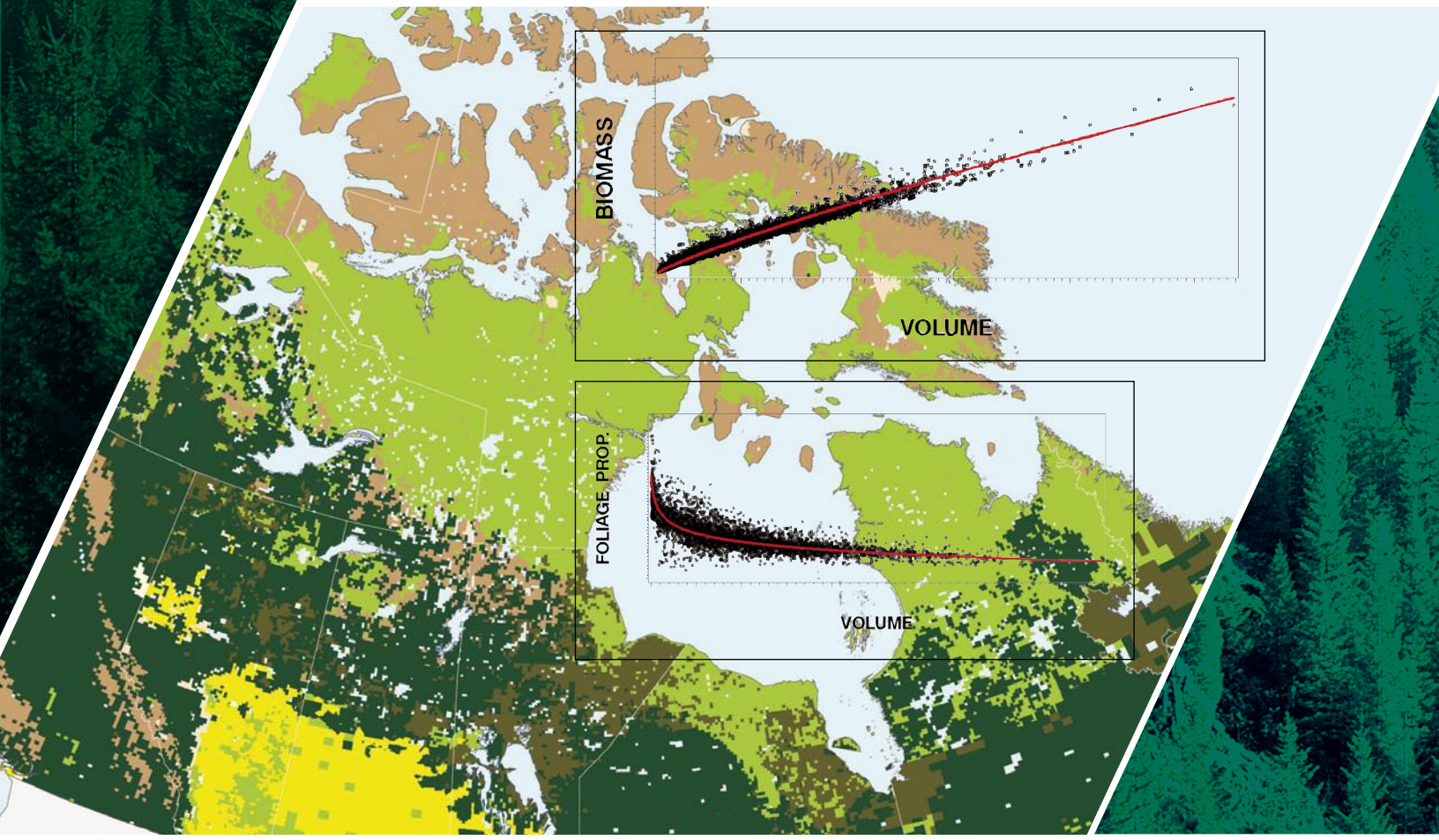
Natural Resources Canada
Ressources naturelles Canada

Model-based, volume-to-biomass conversion for forested and vegetated land in Canada

P. Boudewyn, X. Song, S. Magnussen, and M.D. Gillis

Natural Resources Canada • Canadian Forest Service
Pacific Forestry Centre • Victoria, British Columbia
Information Report • BC-X-411



CFS CANADIAN FOREST SERVICE

Canada

The Pacific Forestry Centre, Victoria, British Columbia

The Pacific Forestry Centre of the Canadian Forest Service undertakes research as part of a national network system responding to the needs of various forest resource managers. The results of this research are distributed in the form of scientific and technical reports and other publications.

Additional information on Natural Resources Canada, the Canadian Forest Service, and Pacific Forestry Centre research and publications is also available on the World Wide Web at: **cfs.nrcan.gc.ca/regions/pfc**. To download or order additional copies of this publication, see our online bookstore at: **bookstore.cfs.nrcan.gc.ca**.

Model-based, volume-to-biomass conversion for forested and vegetated land in Canada

P. Boudewyn, X. Song, S. Magnussen, and M.D. Gillis

Natural Resources Canada
Canadian Forest Service
Pacific Forestry Centre

Natural Resources Canada
Canadian Forest Service
Pacific Forestry Centre, Victoria, BC
Information Report – BC-X-411

2007

Canadian Forest Service
Pacific Forestry Centre
506 West Burnside Road
Victoria, British Columbia
V8Z 1M5
Phone (250) 363-0600

http://cfs.nrcan.gc.ca/regions/pfc

ISSN 0830-0453
ISBN 978-0-662-46513-3
Printed in Canada

Library and Archives Canada Cataloguing in Publication
Model based volume-to-biomass conversion for forested and vegetated land in Canada / P. Boudewyn ... [et al.].

(Information report ; BC-X-411)
Includes bibliographical references:
Available also on the Internet.
ISBN 978-0-662-46513-3
Cat. no.: Fo143-2/411E

1. Forest biomass – Canada – Forecasting – Mathematical models. 2. Plant biomass – Canada – Forecasting – Mathematical models. 3. Forests and forestry – Canada – Measurement. 4. Forest surveys – Canada. I. Boudewyn, P. (Paul) II. Pacific Forestry Centre III. Series: Information report (Pacific Forestry Centre); BC-X-411.

SD387.B48M62 2007 333.75'110971 C2007-980176-5

Contents

Acknowledgements

None of this work would have been possible without the generous support of the forest inventory agencies of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador, and Yukon. The individuals working for these agencies provided us with the sample plot data that were used for developing the biomass models, and provided important advice at various stages of this project. Their contribution to this project is greatly appreciated.

The fine work of Marie-Claude Lambert and Chhun-Huor Ung (CFS-Quebec), who developed all of the models and look-up tables for scenarios 3 and 4, is gratefully acknowledged – this phase of the project filled an important gap in biomass estimation for Canada. Also, Werner Kurz, Graham Stinson and Greg Rampley (CFS-Pacific Forestry Centre, Carbon Accounting Team) provided valuable advice, especially in application testing. Finally, the comments received from all reviewers are gratefully acknowledged.

Abstract

The demand for forest biomass information has increased substantially in recent years, and, in response, new models have been developed to estimate biomass of forest stands and the more common vegetated, non-treed areas in Canada. The modeling approach is distinct for the kind of stand (or polygon) under consideration, and includes techniques that can be used to estimate all the above-ground biomass components, including stem wood, stem bark, branches, and foliage.

Plot data supplied from forest inventory agencies throughout Canada formed the basis of developing empirical volume-to-biomass conversion models for forested (treed) land. For non-treed vegetated areas without volume, look-up tables containing mean biomass values were produced from published scientific studies about plant biomass production.

Empirical models and look-up tables are presented with examples of how they can be used to estimate biomass for specific combinations of classifiers. Together, the models and tables provide a consistent and comprehensible set of tools that can be used to estimate biomass components for stands, vegetated areas, or broader groupings of both, in Canada.

Résumé

La demande en information sur la biomasse de la forêt a sensiblement augmenté au cours des dernières années et, en réponse, de nouveaux modèles ont été mis en place pour évaluer la biomasse des peuplements forestiers ainsi que des régions plus communément végétalisées, non boisées au Canada. La démarche de modélisation diffère selon le type de peuplement (polygonal) en question, et inclut des techniques qui peuvent servir à évaluer tous les composants de biomasse aérienne, y compris le bois de fût, le revêtement d'écorce du fût, les branches et le feuillage.

Les données relatives aux terrains fournies par les organismes d'inventaire partout au Canada ont constitué une base pour l'élaboration de modèles empiriques de conversion Volume-Biomasse pour les terrains boisés (arborés). Quant aux régions végétalisées non arborées sans volume, les tableaux de consultation contenant les valeurs moyennes de biomasse ont été établis à partir des publications traitant des études scientifiques sur la production de biomasse végétale.

Les modèles empiriques et les tableaux de consultation sont accompagnés d'exemples illustrant la manière dont peut les utiliser pour évaluer la biomasse pour des combinaisons particulières de classificateurs. Conjugués, les modèles et les tableaux offrent un ensemble harmonieux et compréhensible d'outils qui peuvent servir à évaluer les composants de biomasse pour les peuplements, les régions boisées ou pour de plus grands groupements des deux, au Canada.

Introduction

Measuring and reporting forest biomass in Canada has become increasingly important over the last few decades, as it has in other parts of the world. Originally, the main impetus for this was the energy crisis of the 1970s. Canada established the ENFOR (ENergy from the FORest) program to determine the amount of biomass, and energy equivalent, that could be obtained from Canada's forests. The first forest biomass inventory of Canada (Bonnor 1985) was conducted as part of the ENFOR program, and was designed to use available inventory data, especially volume, to derive estimates of biomass. This was accomplished by reworking the 1981 National Forest Inventory (NFI) to create a national biomass inventory using tree biomass and volume equations, and volume-to-biomass conversion factors. Subsequently, climate change has increased the awareness of biomass, not only the portion contained in the forests, but in all terrestrial and aquatic ecosystems. In Canada, carbon budgets require estimates of total biomass to determine the contribution of Canada's ecosystems to the global carbon cycle and its effects on climate change (Kurz et al. 2002).

In response to these new requirements, as well as to the need for an update of the first biomass inventory, a new set of forest biomass estimates for Canada was produced by Penner et al. (1997), with the overall objective of producing and implementing a consistent national method for converting the volume reported in Canada's Forest Inventory 1991 (CanFI91) (Lowe et al. 1994) to biomass. This was achieved by developing an innovative approach that estimates 'tree' biomass in artificially generated stands. The methods were somewhat hypothetical, however, and did not include biomass on non-treed areas in Canada such as tundra and wetlands.

At the end of the 1990s, Canada's Forest Inventory 2001 (CanFI2001) (Power and Gillis 2006) was being compiled to replace CanFI91. This provided an opportunity to replace the previous biomass inventories and models with a new approach. A project was established under Natural Resources Canada's *Program of Energy Research and Development* (PERD) entitled *Improving Canada's National Forest Biomass Estimates*. The overall goal of this project was to estimate biomass for all forested and vegetated areas in Canada by developing methods and models that were robust, flexible, and accurate. As well, these models and methods were to be developed with support from provincial and territorial inventory agencies and climate change researchers. More specifically, the objectives of that project were:

1. To develop and publish new, national individual-tree biomass equations (used to estimate biomass of single trees, from diameter and height);
2. To develop and document new methods to estimate stand-level biomass from inventory data (used for biomass estimation of whole stands, or polygons, from photo-interpreted inventory attributes, especially volume);
3. To assign biomass data to every vegetated record (no gaps) in the current National Forest Inventory (CanFI2001) database using the methods and models developed under objectives 1 and 2;
4. To report on the application of the methodology to the new plot-based National Forest Inventory (NFI) as well as to provincial/territorial and industrial inventories; and
5. To report on Canada's forest biomass resources.

The objectives are not mutually exclusive. This report focuses on objectives (2) and (4), but also relies on the new, individual tree biomass equations by Lambert et al. (2005) (objective 1), and acts as a supplement to the CanFI2001 report (Power and Gillis 2006), which now includes national and regional biomass estimates (objective 3 and 5).

Background and definitions

Ideally, national or regional (province or territory, ecozone) biomass estimates would be derived from a probability design sample of ground plots representing various forested and vegetated cover types, species composition, origin, age and vertical stand structure. Data of this kind would be prohibitively costly for a country the size of Canada. Instead, a model-based approach to estimate biomass has been adopted to meet the PERD objectives. Biomass is linearly related to volume (Schreuder et al. 1993), and volume is readily available from forest inventories. For these reasons, volume-to-biomass conversion models were developed to estimate stand-level biomass, which in turn, can be aggregated to provide regional or national estimates. Model bias in the results cannot be ruled out because of data deficiencies, but efforts have been made to minimize and document them throughout this report.

The models developed to estimate biomass depend on the kind of stand (or polygon) under consideration. Four types (scenarios) of stands/polygons[1] are defined:

1. treed stands (tree crown closure ≥10%) or polygons that contain merchantable volume (gross merchantable volume >0 m^3/ha);
2. treed stands/polygons with merchantable volume but no available estimate of this volume. For these stands, volume was estimated separately from available data and treated the same as scenario 1;
3. treed stands/polygons (stands with crown closure ≥10%) where gross merchantable volume is 0 m^3/ha; and
4. vegetated, non-treed areas with no volume. Excluded are: pasture, farm lands, and vegetated urban areas.

The modeling approach is distinct for each of these three types of stands/polygons (1 and 2 are the same), and are driven by the available data sources.

Overstorey biomass is defined as the oven-dry weight in tonnes per ha contained in trees at least 1.3 m in height (diameter at breast height (DBH) > 0 cm). Overstorey biomass is further subdivided into its components of total stem wood (including merchantable and nonmerchantable portions i.e., bole, stump and top), total stem bark (including bole, stump and top bark), total branch (all branch sizes), and foliage. Understorey biomass is composed of the biomass in vascular species and bryophytes (moss, lichens, herbs, shrubs) and very small trees (< 1.3 m in height). For scenarios 1 and 2 (treed stands with volume > 0), understorey biomass represents a relatively minor proportion of the total biomass so was not considered. Total volume of trees includes the volume of the entire stem, excluding bark. Gross merchantable volume is the volume of the stem, excluding bark, stump and top and varies among the jurisdictions depending on harvest utilization limits. Net merchantable volume is equal to gross merchantable volume minus reductions for decay, waste and breakage.

This project was led by Natural Resources Canada, Canadian Forest Service (CFS) with the cooperation of the Canadian Forest Inventory Committee (CFIC) (http://cfs.nrcan.gc.ca/subsite/canfi/committee-overview). The major phases of this project, from data collection to model development and reporting, have been reviewed, discussed and approved by CFIC members prior to publication of this report.

[1] An homogenous community of trees (stand), or other vegetation, is typically delineated as a polygon on inventory maps in Canada.

Methods

1. Scenarios 1 and 2 – treed, merchantable stands

Development of the models relied on the strong relationship between stand volume and stand biomass, and the availability of a large number of permanent (PSPS) and temporary (TSPS) sample plots supplied by the CFIC. The sample plots contain individual trees measured for forest inventory purposes, and were used to derive plot (stand or per hectare) summaries of volume and biomass. Empirical models were then developed to estimate overstorey biomass components (total stem wood, total stem bark, total branches, and total foliage) from plot volume. Similar approaches have been reported elsewhere (Smith et al. 2003; Fournier et al. 2003). The specific approach developed in Canada (applicable to stand-based or polygon-based inventories such as CanFI2001 and the new NFI) is described below.

a. Biomass database

Table 1 shows the number of permanent and temporary sample plots and individual tree measurements obtained from each province or territory. In general, the plots were distributed evenly within the forested areas of each jurisdiction, although nationally the distribution is somewhat uneven (e.g., over 90% of the plots are in Quebec and British Columbia). Figure 1 shows the distribution of plots from Table 1 with location coordinates. The permanent and temporary sample plots are established by the provinces and territories as an integral part of their respective inventories, or for use in growth and yield models. The plot data were obtained from each jurisdiction via data sharing agreements. Data and associated metadata arrived in the format convention of the contributing jurisdiction.

Table 1. Number of PSPS/TSPS and individual tree measurements

Jurisdiction	Number of plots	Number of trees	Number of individual tree measurements
British Columbia	20,840	1,081,583	2,682,837
Alberta	1757	325,260	1,046,167
Saskatchewan	1547	207,482	283,426
Manitoba	411	90,002	183,364
Ontario	1489	159,626	194,316
Quebec	100,260	5,479,685	5,853,192
New Brunswick	2499	221,616	503,946
Nova Scotia	2587	121,990	430,754
Prince Edward Island	1200	29,635	29,635
Newfoundland and Labrador	939	86,376	86,376
Yukon	257	12,594	12,594
Northwest Territories	0	0	0
Nunavut	0	0	0
Total	133,786	7,815,849	11,306,607

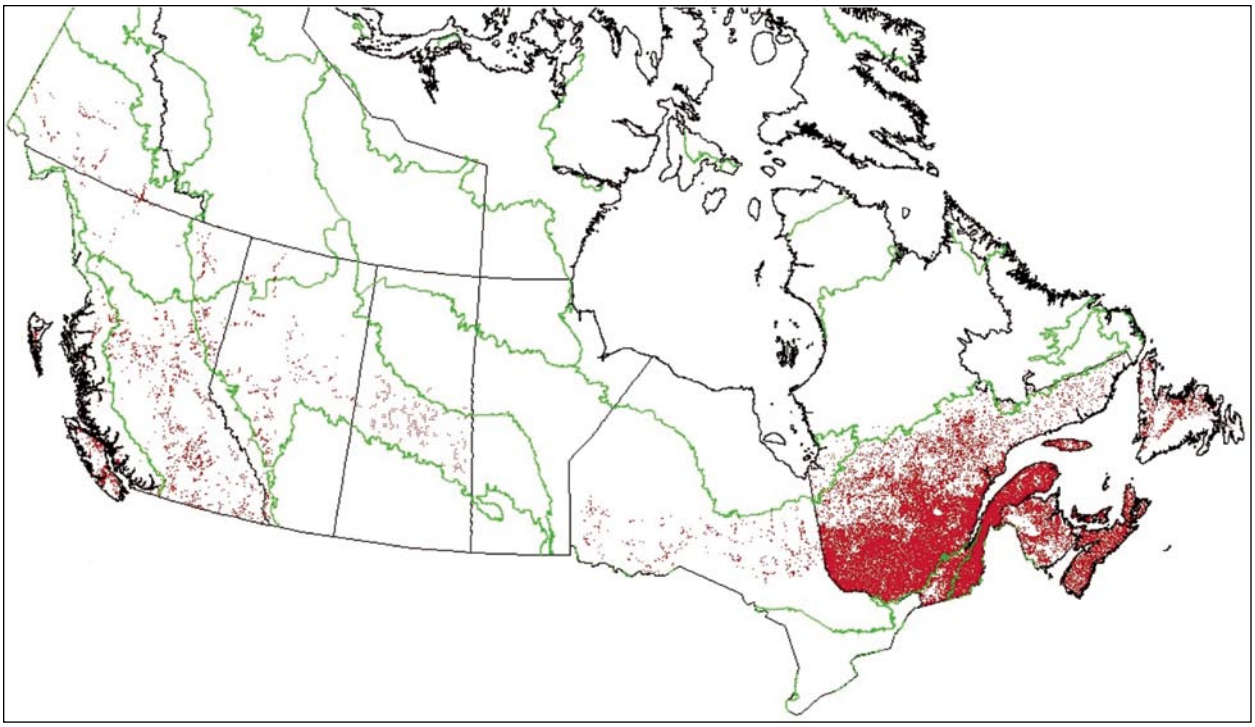


Figure 1. Plot locations (red dots). Each dot may represent a cluster (installation) of up to 10 individual plots, but on average, contain 1-2 plots. Province/territory and ecozone (sis.agr.gc.ca/cansis/publications/ecostrat/intro.html) boundaries are shown as black and green lines respectively. Plots in Manitoba (not shown) are located within the band that could be formed if the plots in Saskatchewan and Ontario were extended to link them. Plots in Labrador (not shown) are situated near its southern boundary. A number of plots throughout Canada lack specific location coordinates and are not shown.

All of the data were converted to a common format. The conversion process included many quality control procedures to determine if all key variables were present and constrained to reasonable values. If not, the variables were corrected using procedures recommended by the contributing agencies. In some instances, procedures were applied across provincial boundaries (e.g., Alberta site index methods were applied to Saskatchewan). In this way, the original raw data were converted to a standardized and complete relational database, hereinafter referred to as simply the "biomass database."

b. Individual tree biomass

One of the most important sets of attributes in the biomass database are estimates of individual tree biomass within plots. For every tree, total stem wood (stump and top included), total stem bark, total branches and total foliage biomass were estimated using individual tree biomass equations. A separate database was compiled that includes all published, individual tree biomass equations applicable to tree species found in Canada and in northern areas of the U.S. Of the numerous equations found, those that possessed the following qualities were retained:

(i) DBH, or DBH and height, are used as predictors of tree biomass;

(ii) At least 10 trees were used to develop an equation;

(iii) Separate tree component equations (stem wood, stem bark, branches, foliage) were developed;

(iv) Tree species and sample locations were described; and

(v) Equation form is consistent with observed allometric relationships – for example a polynomial equation may not be acceptable if it is not monotone within the inventory domain of predictor values.

These criteria ensure that the equations are robust, geographically site specific, and produce reasonable estimates over a range of tree sizes. Applying these criteria, however, often resulted in more than one set of 'acceptable' equations that could be used to estimate biomass for a specific tree species and site. Identifying a single set of equations that would produce a more accurate estimate of individual tree biomass for a particular species and location was complicated. Key information about a candidate equation is often unavailable or not clearly explained. Ter-Mikaelian and Korzukhin (1997) describe many of these and other related issues with published biomass equations. Fortunately, as part of the larger PERD project (see section A, objective 1), a new set of national, individual tree biomass equations were developed that overcomes many of the inherent problems of existing equations used in Canada (Lambert et al. 2005). These new, national equations were selected as the 'preferred' set, and were used to estimate individual tree biomass for each tree component in the sample plots[2]. Where there were gaps, other published equations that best exhibited the qualities described in (i) to (v) above (e.g., most trees sampled, greatest range of sample locations) were chosen to estimate tree biomass. Appendix 1 lists all the source documents for the biomass equations used in this project. In those (rare) cases that the biomass estimate is less than or equal to 0 kg for a specific tree component, the estimate is obtained as the median or mean of estimates produced by the set of all acceptable equations.

c. Data summarization

The summary files are derived from the biomass database and provide the direct source of data to develop models. These files contain two main features: per ha summaries of tree information for each plot and measurement (e.g., volume per ha, basal area per ha, average breast height age, stem wood biomass per ha, etc.), and assigned CanFI2001 classifiers (potential biomass predictors) for each plot and measurement. The per ha summaries are calculated through the traditional method of applying tree expansion factors based on plot size or basal area factor (BAF). Of particular importance, biomass per ha, volumes per ha, etc. were organized and summarized into three discrete stand components; (i) merchantable-sized trees (*all* trees with a DBH greater than or equal to the merchantable DBH limit of a jurisdiction (Table 2); (ii) nonmerchantable-sized trees (smaller trees with a DBH less than the merchantable DBH limit, but greater than or equal to the minimum DBH limit measured in a plot); (iii) sapling-sized trees (small trees with DBH less than the minimum DBH limit of the main plot and measured separately by some jurisdictions in small sub-plots found within the main plot). Each of these stand components was separated into live tree and dead tree summaries (Figure 2).

[2] Regional calibrations (by ecozone) were also used, where available, to capture possible geographic differences in tree species (unpublished).

Table 2. Utilization specifications for merchantable volume (adapted from Gray and Power, 1997)

Jurisdiction	Minimum DBH (cm)	Top diameter (cm)	Stump height (cm)	Type of volume
British Columbia	17.5 (coast), 12.5 (interior)	10.0	30	net
Alberta	13.0	7.0	30	gross
Saskatchewan	7.0	7.0	30	gross
Manitoba	9.1	7.6	30	gross
Ontario	9.0	7.0	30	gross
Quebec	9.0	9.0	15	gross
New Brunswick	9.1	8.0	15	gross
Nova Scotia	9.0	7.0	15	gross
Prince Edward Island	9.0	8.0	15	gross
Newfoundland and Labrador	9.0	7.6	15	gross
Yukon	15.0	10.0	30	gross

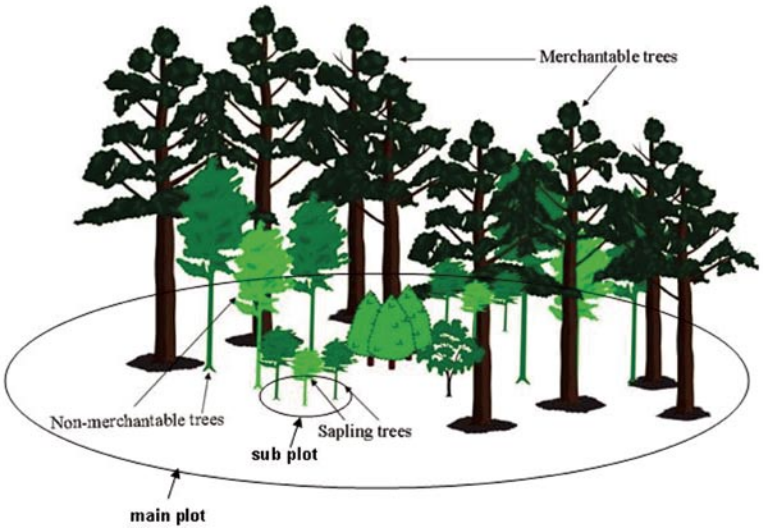


Figure 2. Plot/stand showing the three discrete components and plot types.

Stand and site classifiers, like those used for CanFI2001 (ecozone, site quality, age class, maturity class, forest type, predominant genus and lead species), have the potential to increase model accuracy over volume alone. These classifiers were derived for each plot by summarizing the tree and site information and following the CanFI2001 conversion routines established for each jurisdiction (Power and Gillis 2006).

d. Models

A flowchart describing biomass models and their relationships is in Figure 3 (top). A schematic representation of an application is given below (Figure 3 bottom). To predict stem wood biomass (unit: tonnes per ha) of all trees, a hierarchical set of models is developed. A model for stem wood biomass of merchantable-sized trees is produced, then expansion factors are quantified. The expansion factors account for the stem wood biomass of nonmerchantable-sized trees and sapling-sized trees that would otherwise be missed. Models to predict the proportions of total tree biomass represented by stem wood, stem bark, branches, and foliage are developed in a separate step. These proportions are then combined with estimates for stem wood to derive biomass for all components separately.

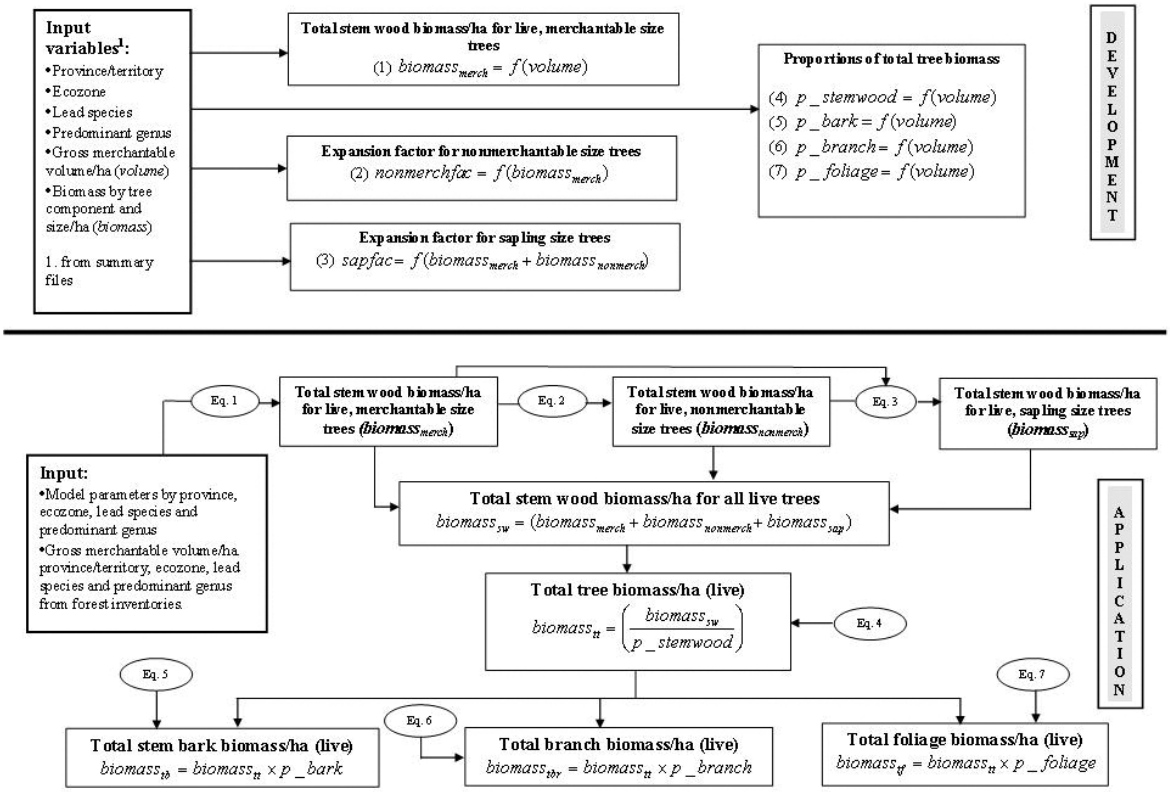


Figure 3. Flowchart summarizing biomass model components (top) and application (bottom) for Scenarios 1 and 2.

Stem wood biomass of merchantable-sized trees accounts for the major proportion of biomass found in treed, merchantable stands, and can be thought of as the basic or primary model as all subsequent models are based on its output. It was fit using equation 1.

(1) $b\_m = a \times volume^b$ where

volume = gross merchantable volume/ha (net in B.C.) of all live trees (volume does not include stumps, tops, or trees< merchantable DBH), in m^3/ha.
b_m = total stem wood biomass of merchantable-sized live trees (biomass includes stumps and tops), in metric tonnes per ha.
a,b = non-linear model parameters fit separately by jurisdiction, ecozone, and lead tree species (Table 3).

Nonmerchantable-sized trees are present in almost every forest stand and contain significant amounts of biomass. An expansion factor, or multiplier, was developed that quantifies the amount of stem wood biomass contained in these smaller trees. This was accomplished with equation 2.

(2) $nonmerchfactor = k + a \times b\_m^b$ where

$$nonmerchfactor = \frac{b\_nm}{b\_m}$$

$b\_nm = b\_m + b\_n$
b_n = stem wood biomass of live, nonmerchantable-sized trees (tonnes/ha)
k, a, b = model parameters fit separately by jurisdiction, ecozone, and lead tree species (Table 4).

Sapling-sized trees are essentially the smallest, nonmerchantable-sized trees in a stand, and are only distinguished when they are measured by a jurisdiction separately in small sub-plots. In these instances, a similar method to above was implemented using equation 3.

(3) $saplingfactor = k + a \times b\_nm^{b}$ where

$$saplingfactor = \frac{b\_snm}{b\_nm}$$

$b\_snm = b\_nm + b\_s$

b_s = stem wood biomass of live, sapling-sized trees (tonnes/ha)

k, a, b = model parameters fit separately by combinations of jurisdiction, ecozone and predominant genus (Table 5).

Models to predict proportions of total tree biomass found in stem wood, stem bark, branch and foliage for *live trees of all sizes* were fit simultaneously using a multinomial logit model. This is the primary method for determining biomass of the other tree components. The four model equations (4, 5, 6 and 7) were:

(4) $$p_{stemwood} = \frac{1}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$

(5) $$p_{bark} = \frac{e^{a1+a2\times vol+a3\times lvol}}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$

(6) $$p_{branches} = \frac{e^{b1+b2\times vol+b3\times lvol}}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$

(7) $$p_{foliage} = \frac{e^{c1+c2\times vol+c3\times lvol}}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$ where

$P_{stemwood}, P_{stembark}, P_{branches}, P_{foliage}$ = proportion of total tree biomass in stemwood, stembark, branches, and foliage, respectively.

vol = gross merchantable volume per ha (net in B.C.)

$lvol$ = natural logarithm of (vol + 5)

$a1, a2, a3, b1, b2, b3, c1, c2, c3$ = model parameters fit separately by jurisdiction, ecozone and lead tree species (Table 6).

e. Fitting procedures

There is a lack of independence of many observations used to fit equations 1-7. Observations from plots that are repeatedly measured over time, or that come from clusters (installations) of plots, are correlated because they share a plot-effect common to all plots on a location and/or all measurements in time. Pinheiro and Bates (2000) describe these effects as well as their treatment. Also, inclusion of several measurements from a single plot could bias the equations towards a minority of plots (older installations) that may or may not be typical for the population in question. To mitigate these combined effects, the model fitting procedure for the primary models (equation 1, 4-7) included weights equal to the inverse of the number of plots in installation, and incorporated a modified dataset that consists of 10 randomly selected measurements from each plot.

For equation (2), the fitting procedure used those plots where the minimum of the measured tree diameters were less than jurisdiction specific limits of merchantability ($DBH_{merch\text{-}limit}$, Table 2). The number of plots with tree data below $DBH_{merch\text{-}limit}$ was limited, so all available measurements from a plot were retained, without weights. Rather, the average b_nm and b_m by 20 m^3 volume classes were calculated,

and used for the dependent variable (*nonmerchfactor*). These decisions did introduce bias into the estimated regression coefficients. However, model fitting was simpler (convergence is attained quickly in non-linear regression models), and many more species-specific models were produced (less gaps), which was the overall priority.

Sapling factors are not well determined because most plots did not have sub-plots that separately measure sapling trees. However, models for the more common combinations of predominant genus, ecozone and jurisdiction were developed. For some jurisdictions, sapling models are not necessary because the minimum of the measured tree diameters in the main plots approach zero, which means they are accounted for in equation (2).

The proportion models (equations 4-7) actually use equations that produce probabilities of an event or nominal variable occurring. In order to create proportions, some non-standard data processing steps were implemented. The (unordered) nominal values of the dependent variable were set to 1 (representing stem wood), 2 (stem bark), 3 (branches) and 4 (foliage), whereas the independent variable was *volume/ha*. The *biomass/ha* for each component was specified as a frequency weight. The "probability" of observing 1, 2, 3, or 4 can then be calculated by software programs containing multinomial logistic algorithms (e.g., STATA®, StataCorp, College Station, TX). This probability can now be considered equal to the proportion of each biomass component, and can be estimated by the model parameters. The simultaneous fitting ensures that the predicted sum of the four biomass proportions always add to 1 and the logit transform of the proportions ensures that all predicted proportions will fall in the interval 0 to 1. Bark, branch, and foliage models could have followed a similar process to that for stem wood, but the strength of the relationship between biomass and volume for these components is nowhere near that for stem wood. Using the multinomial logistic approach is efficient, and model fitting is simpler, even when the relationships are less than ideal.

The main issue encountered during the model fitting process was lack of convergence, which produced unreliable model parameters. This was usually caused by a scarcity of data, a mix of plots with differing measurement protocols, or by plots representing a complex mix of tree species. In these cases, grouping data and fitting models by jurisdiction, predominant genus, and forest type (broader classes) were employed to overcome any gaps or problems in the model coverage for Canada. A model was deemed suitable for implementation for a unique set of classifiers if it converged during the model fitting process, contained at least two input observations (plots), had a significant F statistic (probability ≤ 0.05), and showed realistic trends in the expected and residual values. If one or more of these criteria were not met, the model was discarded.

f. Dead tree biomass

Forest stands contain both standing and downed dead trees with variable amounts of biomass. In general, most of the plots contain data representing measurements taken on relatively sound, standing dead trees, although the quantity and variability of the data limited the development of empirical models. Instead, the average proportion of live stem wood biomass/ha (*b_m*) represented by standing, dead trees (P_{dead}) was calculated by combinations of jurisdiction-ecozone-predominant genus-volume centile. The proportions are rudimentary at best, as unsound standing trees and downed trees are usually not measured (underestimating dead biomass) or, conversely, as plots may be highly disturbed by insects and disease (overestimating dead biomass). The estimates for dead trees should be used with caution.

2. Scenario 3 – treed, nonmerchantable stands/polygons

Developing models to estimate biomass for stands in scenario 3 is challenging, as both gross merchantable volume and a large number of plots are unavailable. To facilitate the modeling process, all stands were grouped into three broad land classes, following the classification scheme used in CanFI2001 (Power and

Gillis 2006): forest, wetlands and scattered. Stands in the forest land class share many of the attributes of the stands/polygons included in scenarios 1 and 2, but presently lack gross merchantable volume. Stands in the wetland and scattered land classes have tree cover (≥ 10% crown closure), but are not expected to produce gross merchantable volume. The strategy to build models was to use, where possible, the plot data, and where there are gaps, to use methods that build on applicable results from published literature.

a. Forest land class – live overstorey

Most of the available plots fall in this land class, and are located in immature stands that will eventually produce gross merchantable volume. A subset of the biomass database was created by selecting plots where gross merchantable volume is 0 m^3/ha. However, this resulted in a relatively small database of fewer than 5000 plots spread unevenly across Canada, which made fitting empirical equations difficult. Therefore, it was decided to calculate expected, or mean values, of biomass components by combinations of ecozone and predominant genus (consistent with previous methods).

Plot biomass components (wood, bark, foliage, and branch) are not independent observations (the components must sum to a known or estimated total). Consequently, constrained mean values, rather than a simple arithmetic average of plot values, were derived by ecozone and predominant genus. Dummy variables were created for the classifiers, and parameters were restricted to achieve additivity of predictions. This resulted in the following system of equations:

8. $$\hat{\bar{y}}_i^{wood} = \sum_{j=1}^{m} a_j x_j$$

9. $$\hat{\bar{y}}_i^{bark} = \sum_{j=1}^{m} b_j x_j$$

10. $$\hat{\bar{y}}_i^{stem} = \ln\left(\exp\left(\hat{\bar{y}}_i^{wood}\right) + \exp\left(\hat{\bar{y}}_i^{bark}\right)\right)$$

11. $$\hat{\bar{y}}_i^{branch} = \sum_{j=1}^{m} c_j x_j$$

12. $$\hat{\bar{y}}_i^{foliage} = \sum_{j=1}^{m} d_j x_j$$

13. $$\hat{\bar{y}}_i^{crown} = \ln\left(\exp\left(\hat{\bar{y}}_i^{branch}\right) + \exp\left(\hat{\bar{y}}_i^{foliage}\right)\right)$$

14. $$\hat{\bar{y}}_i^{total} = \ln\left(\exp\left(\hat{\bar{y}}_i^{wood}\right) + \exp\left(\hat{\bar{y}}_i^{bark}\right) + \exp\left(\hat{\bar{y}}_i^{branch}\right) + \exp\left(\hat{\bar{y}}_i^{foliage}\right)\right)$$

where

$\hat{\bar{y}}^{wood,bark,stem,branch,foliage,crown,total}$ = the mean natural log of the biomass of each component (wood, bark, stem, foliage, branches, crown, and total).

x_j = 1 if j = i; 0 otherwise; i = 1 to 47 (each i represents a unique combination of ecozone and predominant genus).

a_j, b_j, c_j, d_j = model parameters.

The equations can be solved simultaneously using most statistical software programs (e.g., SAS®, Model procedure; SAS 1999)) to obtain the desired result. The *a, b, c,* and *d* parameters also equal the constrained 'mean' biomass values for $\hat{\bar{y}}^{wood}$, $\hat{\bar{y}}^{bark}$, $\hat{\bar{y}}^{branch}$, $\hat{\bar{y}}^{foliage}$, respectively.

b. Forest land class – dead overstorey

Standing dead trees are present in these stands, although there were very few plots available for fitting empirical models or constrained means. The only defensible 'model' was to compute a weighted mean by combinations of ecozone and predominant genus (equation 15).

15. $\hat{\bar{y}}_{dead} = \frac{\sum w_i x_i}{\sum w_i}$ where

w_i = 1/number of plots in installation
x_i = the dead mass material per plot.

The equation used to calculate the standard error is:

16. $stderr = \frac{S}{\sqrt{\sum w_i}}$,

where $S = \sqrt{\frac{\sum w_i (x_i - \bar{x})^2}{n-1}}$.

c. Forest land class – understorey

Understorey vegetation represents a larger proportion of total biomass in treed, nonmerchantable stands as compared to stands in scenario 1, and a simple model was developed (unlike scenario 1 and 2 stands). However, the biomass database described in an earlier section cannot be used for this purpose. Instead, metadata gathered from published reports were used to derive a set of mean values for both understorey and overstorey biomass. Eleven papers (Appendix 3) were found for this purpose. Estimates for the mass of dead vegetation could not be extracted from these documents.

Biomass values derived from the published reports were assigned to an ecozone containing the study area. A CanFI2001 code representing the hierarchical land cover classification was assigned to each biomass value(s) based on the information from the source documents. The biomass estimate per forest type and ecozone was computed as a weighted mean of the extracted values from within a forest type and ecozone. The weight attributed to each record was the number of field plots employed in a study. A value of 1 was assigned to values without any verifiable information about the number of plots (note: all studies must have had at least one plot). Equations 15 and 16 were used to calculate a weighted mean. The final results were then organized into look-up tables.

d. Wetland, scattered land classes

Although a common land cover in Canada, biomass data for wetlands and open forests are rare. There are no plots in the biomass database representing this class of stand/polygon. Estimating biomass followed a similar approach to that for understorey vegetation in the forest land class. Pertinent biomass information for wetlands was obtained from five papers, and from three papers for the scattered class. From these studies, *overstorey biomass*, *understorey biomass*, and *understorey dead material mass* were calculated (Appendix 3). Biomass values for overstorey dead material could not be extracted from these publications. The estimated biomass value for an ecozone and land class were obtained as a weighted mean (Equations 15 and 16), and copied to the associated look-up table.

3. Scenario 4 – vegetated, non-treed areas

These vegetated areas and their sub-types, which contain little-to-no tree cover (tree crown closure < 10%) and no volume, are commonly found in Canada. The defined land classes were adopted, as before, from the CanFI2001 land cover hierarchy, and are listed in Appendix 4. No data were available in the database for developing models for these land classes; so a similar process to that described in 2(c,d) was implemented. A synthesis of results from published information produced look-up tables of mean values that can be used to estimate biomass. Forty-six studies were found that were conducted in the boreal and northern hemisphere temperate zones of the world. After reviewing all studies, only the 23 conducted in Canada were retained as being the most relevant (Appendix 4). The look-up table was constructed so that it contains the weighted mean of biomass by combinations of ecozone and land class. It is possible that plots from the same study were placed in separate ecozones or land classes, if information extracted from a particular study suggests that a mix of plot types and locations are present.

Results

1. Scenarios 1 and 2 – treed, merchantable stands

Stem wood biomass model fitting results are detailed in Appendix 2, Tables 3-5. The tables list the model parameters along with the number of plots and root mean square error (RMSE) associated with the model for each set of classifiers. To provide an impression of the goodness of fit and typical model trends, several graphs are presented showing stem wood biomass (*b_m*) versus net merchantable volume (Figure 4), nonmerchfactor versus stem wood biomass (*b_m*) (Figure 5), and saplingfactor versus stemwood biomass (*b_nm*) (Figure 6). The black circles represent actual data combinations of the dependent and the predictor, while a red line indicates the expected value of the dependent variable. Residual graphs (actual minus predicted) are also included. Upper and lower limits were placed on the models for *nonmerchfactor* and *saplingfactor*. These limits, equal to the highest expected factor of actual values and 1.00, respectively, were added to protect against gross inflations and erroneous shrinking of biomass.

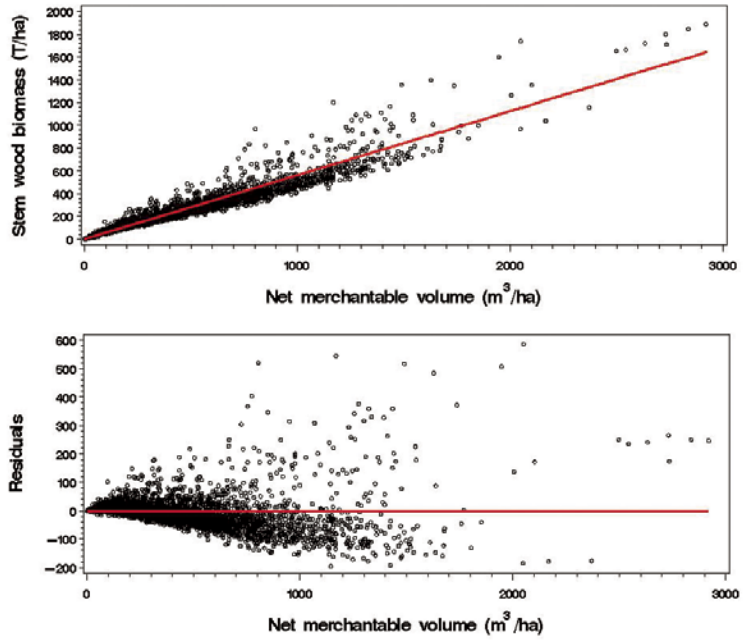


Figure 4. Model for merchantable-sized trees, Pacific Maritime (ecozone 13), Douglas-fir (net, not gross, merchantable volume is used in B.C. exclusively)

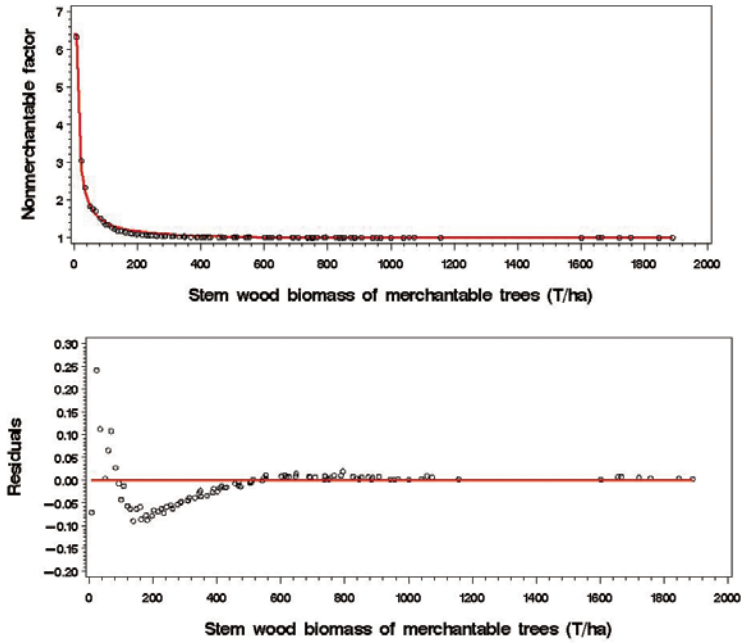


Figure 5. Model for nonmerchantable-sized trees, Pacific Maritime (ecozone 13), Douglas-fir

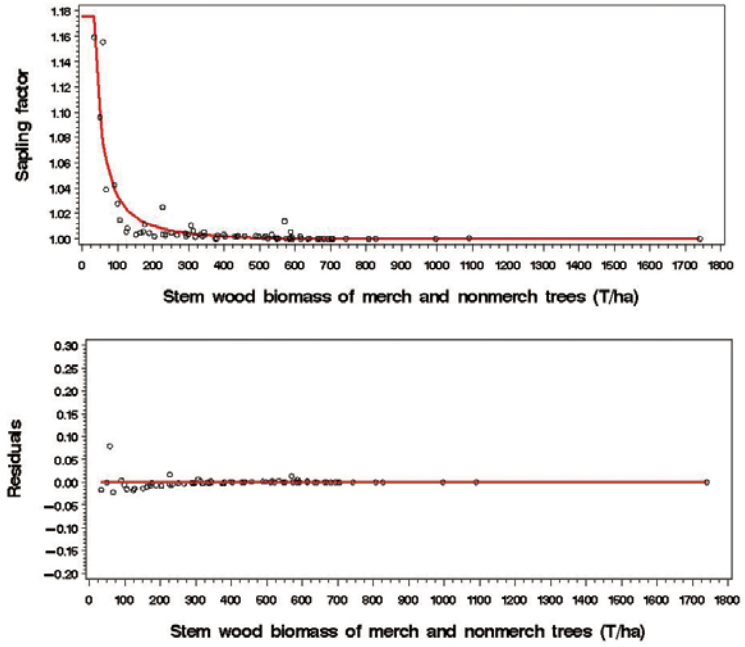


Figure 6. Model for sapling-sized trees, Pacific Maritime (ecozone 13), Douglas-fir

Proportion model fitting results are detailed in Appendix 2, Tables 6-7. The tables list the model parameters along with the number of plots and RMSE associated with the model for each set of classifiers. Figure 7 shows graphs of *proportion* versus *volume*, exemplifying trends seen for most species. Upper and lower limits were also placed on the proportion models. These limits, equal to the expected factors associated with the maximum and minimum volumes respectively, were added to prevent sudden deviations of proportions from the general trend.

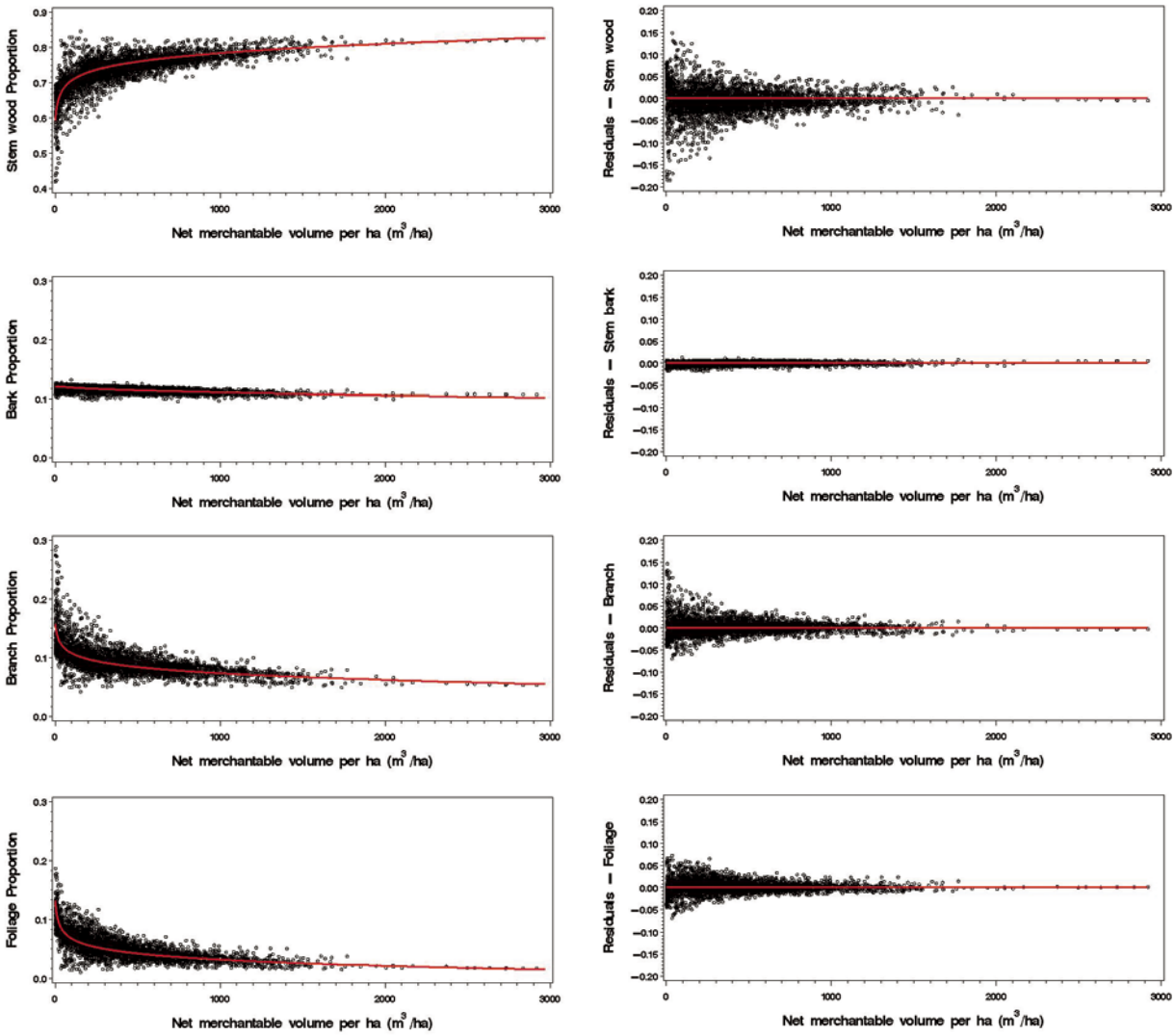


Figure 7. Proportion models for biomass components in Douglas-fir (B.C., ecozone 13)

2. Scenario 3 – treed, nonmerchantable stands

A portion of the look-up table developed for *overstorey* in the forest land class is shown below. Predicted mean biomass of each component, in logarithmic and natural scales, is shown by combinations of ecozone and predominant genus. The minimum and maximum biomass recorded in the plot data are also shown. The full set of tables for the forest land class (live overstorey and dead overstorey) are in Appendix 3, Tables 8-10.

Portion of Table 8 (look-up table for live overstorey biomass in the forest land class)

				Overstorey biomass (kg/ha)					
						Logarithmic scale		Natural scale	
Ecozone	Predominant Genus	Component	Plots[1]	Min[2]	Max[3]	Mean[4]	StdErr[5]	Mean[4]	StdErr[5]
Pacific maritime	Spruce	wood	39	671	30762	8.56	0.24	5239	1254
		bark		120	18549	7.80	0.24	2444	586
		branches		307	56090	9.36	0.25	11637	2887
		foliage		227	42002	9.06	0.23	8636	2023
	Douglas-fir	wood	126	1085	319572	9.95	0.16	20900	3389
		bark		220	135751	8.33	0.16	4134	663
		branches		229	553080	8.57	0.17	5257	885
		foliage		227	329986	8.34	0.16	4175	668

An example of the look-up table developed from the literature for overstorey and understorey in all land classes is shown below. Average biomass by combinations of ecozone, land class (CanFI code) and forest type are shown, along with minimum and maximum values of the plot data reported in the literature. The full table is in Appendix 3 (Table 11). There are some instances where estimates for live overstorey biomass can come from more than one table. In these cases, it is recommended to use the values derived from the biomass plot database described in step B.1.a. (Tables 8-10).

Portion of Table 11 (look-up table for live overstorey, understorey and dead understorey)

Ecozone	Land class (Canfi code)	Forest type	Biomass (kg/ha)									Biomass of dead plant materiel (kg/ha)						References[7]
					Overstorey				Understorey				Understorey						
			Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	
Pacific maritime			50	8	5382	2021	43	76731	4145	303	1329	9457	2	2	16654	15428	1226	32082	
	Forest (22340)		50	8	5382	2021	43	76731	4145	303	1329	9457	2	2	16654	15428	1226	32082	
		Softwood	50	8	5382	2021	43	76731	4145	303	1329	9457	2	2	16654	15428	1226	32082	20,44, 48,125
Taiga shield			35	6	21250	2148	18637	93500	13948	474	0	14850							
	Forest (22340)		1	1	19970				9855										
		Softwood	1	1	19970				9855										1
	Scattered (22320)		33	4	19099	330	18637	29250	14495	209	9760	14850							
		Softwood	33	4	19099	330	18637	29250	14495	209	9760	14850							1,122
	Wetland (22310)		1	1	93500				0										
		Softwood	1	1	93500				0										34

3. Scenario 4 – vegetated, non-treed areas

A portion of the look-up table developed for scenario 4 is shown on the next page. The full set of tables (Tables 12 and 13) are in Appendix 4. The mean biomass by combinations of ecozone and land class are included. Biomass values are divided only into total biomass, and where possible, dead plant mass. Standard errors were calculated for every attribute for which more than one record was used to calculate their mean. The strength of evidence behind an estimate is gauged by its relative error (standard error divided by the mean (stderr/mean)). Estimates with a smaller relative error are more reliable than estimates with a larger relative error.

Portion of Table 12 (mean biomass values for vegetated non-treed areas)

Ecozone	Land class		CanFI code	Biomass (kg/ha)						Mass of dead plant material (kg/ha)						References[7]
				Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	
Boreal shield	Wetlands		22110	48	7	4805.3	597.3	256	25063	23	1	1180.0				
		Muskeg/ Bog/Fen	22111	48	7	4805.3	597.3	256	25063	23	1	1180.0				32, 102, 103,124
Mixed wood plains	Wetland		22110	109	4	7606.7	140.6	3070	8450	45	1	7790.0				
		Muskeg/ Bog/Fen	22111	19	2	4512.1	163.4	3170	4870							130
		Marsh	22112	45	1	8450.0										29
		Meadow	22113	45	1	8070.0				45	1	7790.0				24
Montane cordillera	Other		22130	2	2	6243.5	4832.5	1411	11076	2	2	6477.5	1250.5	5227	7728	
		Tundra heath	22135	2	2	6243.5	4832.5	1411	11076	2	2	6477.5	1250.5	5227	7728	98
	Wetland		22110	10	2	5100.0	433.3	3800	6400	10	2	6100.0	1333.3	2100	10100	
		Muskeg/ Bog/Fen	22111	10	2	5100.0	433.3	3800	6400	10	2	6100.0	1333.3	2100	10100	40

4. Substitution

It is evident, when looking at all the models and look-up tables, that many combinations of classifiers found in Canada are not represented, leaving gaps in model coverage. When a biomass estimate is needed for a gap, substitution of models and/or values in look-up tables is implemented according to the following rules:

1. Use the model (or data, equation, etc.) from the most 'similar' (in form, growth, and genus) tree species within the same jurisdiction and ecozone. For example, the model for white spruce is substituted for Engelmann spruce within ecozone 12 in B.C. because there was insufficient plot data to produce a model for Engelmann spruce and it is very similar in form and growth to white spruce (in Table 3, model = S(12-105), indicating model was substituted from ecozone 12, species 105).
2. Use the model from the most similar (climate, geography) ecozone within the same province and for the same species. For example, the model for white spruce in ecozone 9 in Alberta is substituted for white spruce in ecozone 6 in Alberta because ecozone 9 is the most similar ecozone in geography and climate to ecozone 6 (in Table 3, model=S(9-105), indicating model was substituted from ecozone 9, species 105).
3. Use the model from a combination of the most similar species and ecozone within the same province (e.g., the model for trembling aspen in ecozone 6 in Manitoba is substituted for balsam poplar in ecozone 5 [model=S(6-1201)]).
4. Use the model for the same ecozone and species, but from a different province, if the DBH merchantable and nonmerchantable limits are similar. For example, the model for tamarack in ecozone 6 in Quebec is substituted for tamarack in ecozone 6 in Ontario because the two definitions of merchantable volume are similar (Table 2) and variations within ecozone 6 are smaller between the provinces (model=S[QC-6-602]).
5. Use the model for the same ecozone and a similar species or genus, but from a different province, if the DBH merchantable and nonmerchantable limits are similar (e.g., the model for maple in ecozone 6 in Quebec is substituted for upland hardwoods in ecozone 6 in Ontario [model-S(QC-6-G11)]).
6. Use the model for a similar ecozone and a similar species, but from a different province, if the DBH merchantable and nonmerchantable limits are similar (e.g., the model for red oak in ecozone 6 in Quebec is substituted for bur oak in ecozone 10 in Manitoba [model=S(QC-6-2108)]).

As one progresses down the list, the substitutions may become more uncertain, because tree species, ecozones, and merchantability limits diverge in characteristics. A substitution key, as implemented in CanFI/NFI, is shown in Appendix 2 tables (model variable). For scenarios 3 and 4, the same set of rules or reasoning would apply to predominant genus or land class, rather than tree species.

5. Model application

Figure 3 (application) gives an overview of how the models for treed, merchantable stands (scenarios 1 and 2) are applied to estimate biomass. A step-by-step guide to the use of all the models and look-up tables, using real data, is in Appendix 5. It is important to understand that for scenarios 1 and 2, the order of applying the models is critical. The hierarchical nature of the models, and gross merchantable volume (net for B.C.) as currently defined by each jurisdiction (Table 2), must be adhered to in order to produce valid estimates of biomass. Although most of the models behave reasonably well, users should use caution

when extrapolating beyond the maximum volume (Appendix 2), especially for models based on few plots (count <10). At volumes approaching zero for scenario 1, predictions may be below that for similar, nonmerchantable stands (scenario 3, Appendix 3 tables). In these cases, it is recommended that the higher estimate developed for scenario 3 stands be used, or an average of the two values be calculated and used.

Models that convert total stand volume (volume of all trees > 1.3 m in height, including stump and top) to gross merchantable volume are provided in Appendix 6. Users must convert total volume to gross merchantable volume (net in B.C.) before using any of the models that require volume as an input.

Discussion

The hierarchical design for building stem wood biomass models by stand layer (merchantable-sized trees → nonmerchantable-sized trees → sapling-sized trees, Figure 2) warrants further explanation. The design was driven by the availability and characteristics of the plots in the biomass database, as well as biomass distribution within forested areas. Most plots in the biomass database are located in forested areas containing merchantable volume, and the plots are biased towards measuring merchantable-sized trees. This fact made it advantageous to build models for the merchantable layer first— because all the sample plot data were available to build relatively robust models for the major tree species in Canada, for the stand layer containing the greatest amount of biomass. This is an important foundation for biomass estimation, and it forms a strong base for developing biomass models for all other stand and tree components. The models for the remaining layers, which typically contribute less to total stand biomass (nonmerchantable and sapling), rely on fewer plots, but they help to expand and enhance the basic biomass estimates to become closer to the true total biomass of a stand or polygon.

It is often challenging to detect and minimize bias in any system of models that are developed. There was a persistent, but small, positive bias in the expected nonmerchantable and sapling factors (Figures 5 and 6), mostly in stands containing smaller, or fewer, trees (biomass <200t). No corrective measure was found to deal with this bias problem. Also, it is quite probable that actual expansion factors are larger than the predictions, since the database includes plots in which the lower limit of tree size measured was actually above 1.3 m in height (a common trend throughout Canada). A smooth trend is also more realistic than the more abrupt change displayed by the censored data. For treed, nonmerchantable stands (scenario 3), the mean of the log of biomass (Table 8), when back-transformed to the natural scale, will be consistently lower than the mean of non-transformed biomass. However, the plot data used for these estimates tend to be from more mature, nonmerchantable stands (stands closer to the threshold between nonmerchantable and merchantable). A lower estimate is probably more representative of the biomass found if more immature stands were sampled.

The models for scenarios 1 and 2 use plot-derived independent variables (e.g., volume/ha, lead species, etc.). Applying these plot-based models to a typical forest inventory polygon, or higher spatial scale (e.g., a collection of polygons such as a CanFI2001 cell), could introduce another source of bias. Smith et al. (2003) discusses some of the errors that may occur under these situations; however, they conclude that the overall error is negligible. Reducing this bias would involve modeling biomass as a function of polygon-derived variables. This, however, reduces the pool of available plots (plots paired with current inventory information), and relies on a rather weak relationship between plot-derived biomass and polygon-level volumes. Plot-based models are more robust and have greater utility under a variety of circumstances.

Many vegetated, non-treed areas in Canada lack available information on living and dead biomass material. Consequently, not all land cover classes located in each ecozone are covered by the look-up tables constructed for scenario 4 (Table 12). The mean values used to estimate biomass for these areas should be considered generalized. As more information becomes available, the values could be improved or empirical models could be developed.

The series of volume-to-biomass models and look-up tables presented in this report represent a pragmatic and comprehensible approach towards biomass estimation for photo-interpreted stands and polygons in Canada. The final models reflect the efforts and contributions of many stakeholders, and provide a consistent and transparent set of tools to estimate biomass components at the stand, or higher level. More specifically, the models provide estimates of total biomass per ha for the four distinct, above-ground biomass components – stem wood, stem bark, branches and foliage – and also provide estimates for other vegetated areas in Canada. The final set of equations and look-up tables are also easily incorporated into provincial/territorial forest management inventories and into other applications. The carbon budget model of the CFS (CBM-CFS3) already uses the full set of models.

Gaps in the coverage of the data is an ongoing issue, but it can be addressed over time by revising and/or expanding the number of models as new data become available. The entire model fitting process is semi-automated, so the process of creating new versions will be streamlined. In fact, the biomass methods presented here and the biomass inventory included in the CanFI2001 report are an integral part of CFS inventory activities (NFI, Earth Observation for Sustainable Development (EOSD), CanFI2001), and can be updated as new information becomes available.

Literature cited

Bonnor, G.M. 1985. Inventory of forest biomass in Canada. Canadian Forestry Service, Petawawa National forestry Institute, Chalk River, ON. 63 p.

Fournier, R.A.; Luther, J.E.; Guindon, L.; Lambert, M.-C.; Piercey, D.; Hall, R.J.; Wulder, M. 2003. Mapping aboveground tree biomass at the stand level from inventory information: Test cases in Newfoundland and Quebec. Canadian Journal of Forest Research 33: 1846-1863.

Gray, S.L.; Power, K. 1997. Canada's forest inventory 1991: the 1994 version – technical supplement. Canadian Forest Service, Pacific Forestry Centre, Victoria, B.C., Information Report BC-X-363. 73 p.

Kurz, W.A, M. Apps, E. Banfield and G. Stinson, 2002. Forest carbon accounting at the operational scale. The Forestry Chronicle 78(5): 672-679

Lambert, M-C.; Ung, C-H.; Raulier, F. 2005. Canadian national tree aboveground biomass equations. Canadian Journal of Forest Research 35: 1996-2018.

Lowe, J.J.; Power, K.; Gray, S.L. 1994. Canada's forest inventory 1991. Canadian Forestry Service, Petawawa National Forestry Institute, Petawawa, ON, Information Report PI-X-115.

Penner, M., Power, K.; Muhairwe, C.; Tellier, R.; Wang, Y. 1997. Canada's forest biomass resources: deriving estimates from Canada's forest inventory. Canadian Forest Service, Pacific Forestry Centre, Victoria, B.C., Information Report BC-X-370. 33 p.

Pinheiro, J.C.; Bates, D. M. 2000. Mixed-effects models in S and S-Plus. New York: Springer-Verlag Inc.

Power, K.; Gillis, M.D. 2006. Canada's forest inventory 2001. Canadian Forest Service, Pacific Forestry Centre, Victoria, B.C., Information Report BC-X-408E. 100 p.

SAS Institute Inc. 1999. SAS procedures guide. Version 8, Cary, NC: SAS Institute Inc.

Schreuder, H.T.; Gregoire, T.G.; Wood, G. B. 1993. Sampling methods for multiresource forest inventory. New York: John Wiley and Sons, Inc.

Smith, J.E.; Apps, M.; Heath, L.; Jenkins, J. 2003. Forest volume-to-biomass models and estimates of mass for live and standing dead trees of U.S. forests. USDA Forest Service, Northeastern Research Station, General Technical Report NE-298.

Ter-Mikaelian, M.T.; Korzukhin, M.D. 1997. Biomass equations for sixty-five North American tree species. Forest Ecology and Management 97: 1-24.

APPENDIX 1 - List of publications used to develop estimates of individual tree biomass

Alban, D.H.; Laidly, P.R. 1982. Generalized biomass equations for jack and red pine in the Lake States *Pinus banksiana, Pinus resinosa*, USA. Canadian Journal of Forest Research 12(4):913-921.

Alemdag, I.S. 1983. Mass equations and merchantability factors for Ontario softwoods. ENFOR Project P-179. Petawawa National Forestry Institute, Canadian Forestry Service, Information Report PI-X-23.

Alemdag, I.S. 1984. Total tree and merchantable stem biomass equations for Ontario hardwoods. ENFOR Project P-234. Agriculture Canada, Ministry of State for Forestry, Petawawa National Forestry Institute, Information Report PI-X-46.

Crow, T.R.; Erdmann, G.G. 1983. Weight and volume equations and tables for red maple in the Lake States. USDA Forest Service Research Paper NC-242. 14 p.

Evert, F. 1985. Systems of equations for estimating ovendry mass of 18 Canadian tree species. ENFOR Project P-258. Petawawa National Forestry Institute, Chalk River, ON. Canadian Forestry Service, Information Report No. PI-X-59.

Feller, M.C. 1992. Generalized versus site-specific biomass regression equations for *Pseudotsuga menziesii var. menziesii* and *Thuja plicata* in coastal British Columbia. Bioresource Technology 39: 9-16.

Gholz, H.L.; Grier, C.C.; Campbell, A.G.; Brown, A.T. 1979. Equations for estimating biomass and leaf area of plants in the Pacific Northwest. Forest Research Lab, Oregon State University, Corvallis, Oregon.

Ker, M. F. 1980. Tree biomass equations for 10 major species in Cumberland County, Nova Scotia. ENFOR Project P-4. Maritimes Forest Research Centre, Canadian Forestry Service, Information Report M-X-108.

Ker, M. F. 1984. Biomass equations for seven major Maritimes tree species. ENFOR Project P-159. Maritimes Forest Research Centre, Canadian Forestry Service, Information Report No. M-X-148.

Lambert, M-C.; Ung, C-H.; Raulier, F. 2005. Canadian national tree aboveground biomass equations. Canadian Journal of Forest Research 35: 1996-2018.

Lavigne, M.B. 1982. Tree mass equations for common species of Newfoundland. Newfoundland Forest Research Centre, St. Johns, Newfoundland. Environment Canada, Canadian Forestry Service, Information Report N-X-213.

Manning, G.H.; Massie, M.R.C.; Rudd, J. 1984. Metric single-tree weight tables for the Yukon territory. Agriculture Canada, Ministry of State for Forestry, Pacific Forest Research Centre, Victoria, BC, Information Report BC-X-250.

Standish, J.T.; Manning, G.H.; Demaershchalk, J.P. 1985. Development of biomass equations for British Columbia tree species. Agriculture Canada, Ministry of State for Forestry, Pacific Forestry Centre, Victoria, BC, Information Report BC-X-264.

Stanek, W.; State, D. 1978. Equations predicting primary productivity (biomass) of trees, shrubs and lesser vegetation based on current literature. Fisheries and Environment Canada, Canadian Forestry Service, Pacific Forest Research Centre, Victoria, BC, Information Report BC-X-183. 58 p.

Ter-Mikelian, M.T.; Korzukhin, M.D. 1997. Biomass equations for sixty-five North American tree species. Forest Ecology and Management 97: 1-24.

Whittaker, R.H.; Bormann, F.H.; Likens, G.E.; Siccama, T.G. 1974. The Hubbard Brook Ecosystem Study: Forest biomass and production. Ecological Monographs 44(2):233-254.

Young, H.E.; Ribe, J.H.; Wainwright, K. 1980. Weight tables for tree and shrub species in Maine. Maine Life Science and Agriculture Experiment Station, Miscellaneous Report 230. 24 p.

APPENDIX 2 - Models for scenarios 1 and 2 (treed, merchantable stands)[3]

Table 3. Stem wood biomass model parameters for merchantable-sized trees by jurisdiction, ecozone and lead species

$b\_m = a \times volume^b$
jur = jurisdiction
volm = highest measured volume in plots used to develop model (m^3/ha)
count = number of unique plots used to develop model
model = model was developed or substituted from another province/ecozone/species/genus(G)/forest type(F) (see Substitution section)
rmse = root mean square error

jur	ecozone	species	volm	count	a	b	model	rmse
BC	4	100			1.04179	0.84667	S(4-105)	
BC	4	101	475	81	0.99284	0.89792	Developed	12.1
BC	4	104			1.04179	0.84667	S(4-105)	
BC	4	105	557	64	1.04179	0.84667	Developed	14.3
BC	4	204	481	69	0.80643	0.91673	Developed	7.8
BC	4	206			0.44614	0.98202	S(14-206)	
BC	4	208			1.14576	0.81339	S(14-208)	
BC	4	300			1.41227	0.80304	S(12-304)	
BC	4	301			0.82581	0.92173	S(14-301)	
BC	4	304			1.41227	0.80304	S(12-304)	
BC	4	400			1.03109	0.89958	S(14-402)	
BC	4	402			1.03109	0.89958	S(14-402)	
BC	4	403			1.03109	0.89958	S(14-402)	
BC	4	500			1.07518	0.84843	S(14-500)	
BC	4	600			1.71185	0.79219	S(14-603)	
BC	4	602			1.71185	0.79219	S(14-603)	
BC	4	603			1.71185	0.79219	S(14-603)	
BC	4	604			1.71185	0.79219	S(14-603)	
BC	4	702			0.76174	0.93328	S(14-702)	
BC	4	1201	754	100	0.98951	0.89062	Developed	9.5
BC	4	1203	622	20	1.01541	0.89833	Developed	8.8
BC	4	1303	290	27	3.63454	0.64583	Developed	8.2
BC	4	1305			3.63454	0.64583	S(4-1303)	
BC	4	1308			3.63454	0.64583	S(4-1303)	
BC	4	1403			0.96425	0.92372	S(13-1403)	
BC	4	1802			0.58557	0.97738	S(13-1802)	
BC	9	100			0.79470	0.90631	S(9-105)	
BC	9	101	380	11	0.91381	0.89889	Developed	8
BC	9	104			0.79470	0.90631	S(9-105)	
BC	9	105	525	40	0.79470	0.90631	Developed	7.2
BC	9	106			0.79470	0.90631	S(9-105)	
BC	9	204	593	95	0.75769	0.93061	Developed	6.5
BC	9	206			0.44614	0.98202	S(14-206)	
BC	9	208			1.14576	0.81339	S(14-208)	
BC	9	300			1.41227	0.80304	S(12-304)	
BC	9	301			0.82581	0.92173	S(14-301)	
BC	9	304			1.41227	0.80304	S(12-304)	
BC	9	400			1.03109	0.89958	S(14-402)	
BC	9	402			1.03109	0.89958	S(14-402)	
BC	9	403			1.03109	0.89958	S(14-402)	
BC	9	500			1.07518	0.84843	S(14-500)	
BC	9	600			1.71185	0.79219	S(14-603)	
BC	9	602			1.71185	0.79219	S(14-603)	
BC	9	603			1.71185	0.79219	S(14-603)	
BC	9	604			1.71185	0.79219	S(14-603)	
BC	9	702			0.76174	0.93328	S(14-702)	
BC	9	1201	460	90	0.89510	0.92428	Developed	8
BC	9	1203	565	14	0.63720	0.94895	Developed	10.6
BC	9	1303	123	8	1.33072	0.85848	Developed	6.8
BC	9	1305			1.33072	0.85848	S(9-1303)	
BC	9	1308			1.33072	0.85848	S(9-1303)	

[3] Model parameters are available for download at the NFI website (http://nfi.nfis.org/).

jur	ecozone	species	volm	count	a	b	model	rmse
BC	9	1403			0.96425	0.92372	S(13-1403)	
BC	9	1802			0.58557	0.97738	S(13-1802)	
BC	12	100			0.73179	0.93642	S(12-105)	
BC	12	101	342	35	1.16077	0.86360	Developed	8.4
BC	12	104			0.73179	0.93642	S(12-105)	
BC	12	105	410	64	0.73179	0.93642	Developed	14.2
BC	12	106			0.38463	1.02515	S(13-106)	
BC	12	201			0.61612	0.94542	S(14-201)	
BC	12	204	403	130	0.77083	0.93629	Developed	8.5
BC	12	206			0.44614	0.98202	S(14-206)	
BC	12	208			1.14576	0.81339	S(14-208)	
BC	12	300			1.41227	0.80304	S(12-304)	
BC	12	301			0.82581	0.92173	S(14-301)	
BC	12	303			1.41227	0.80304	S(12-304)	
BC	12	304	399	19	1.41227	0.80304	Developed	8.4
BC	12	400			0.87881	0.90785	S(13-402)	
BC	12	402			0.87881	0.90785	S(13-402)	
BC	12	403			0.86316	0.94481	S(13-403)	
BC	12	500			0.55345	1.00210	S(13-500)	
BC	12	600			1.71185	0.79219	S(14-603)	
BC	12	602			1.71185	0.79219	S(14-603)	
BC	12	603			1.71185	0.79219	S(14-603)	
BC	12	604			1.71185	0.79219	S(14-603)	
BC	12	702			0.46250	1.00638	S(13-702)	
BC	12	1001			0.97950	0.95567	S(13-1001)	
BC	12	1201			0.98951	0.89062	S(4-1201)	
BC	12	1203			1.01541	0.89833	S(4-1203)	
BC	12	1303			3.63454	0.64583	S(4-1303)	
BC	12	1305			3.63454	0.64583	S(4-1303)	
BC	12	1308			3.63454	0.64583	S(4-1303)	
BC	12	1403			0.96425	0.92372	S(13-1403)	
BC	12	1802			0.58557	0.97738	S(13-1802)	
BC	13	100			0.38463	1.02515	S(13-106)	
BC	13	101			1.16077	0.86360	S(12-101)	
BC	13	104			0.38463	1.02515	S(13-106)	
BC	13	105			0.38463	1.02515	S(13-106)	
BC	13	106	2128	415	0.38463	1.02515	Developed	40.4
BC	13	201	366	7	0.29870	1.08675	Developed	12.4
BC	13	204	1281	130	1.05441	0.87452	Developed	13.9
BC	13	205			1.05441	0.87452	S(13-204)	
BC	13	206			0.44614	0.98202	S(14-206)	
BC	13	208			1.14576	0.81339	S(14-208)	
BC	13	300			0.66398	0.94974	S(13-301)	
BC	13	301	1682	569	0.66398	0.94974	Developed	46
BC	13	303	1560	12	0.57867	0.94726	Developed	10.7
BC	13	304	884	66	0.45231	0.99471	Developed	11.2
BC	13	400			0.87881	0.90785	S(13-402)	
BC	13	402	3209	2381	0.87881	0.90785	Developed	56.4
BC	13	403	846	94	0.86316	0.94481	Developed	43.5
BC	13	500	2544	1318	0.55345	1.00210	Developed	64
BC	13	600			1.71185	0.79219	S(14-603)	
BC	13	602			1.71185	0.79219	S(14-603)	
BC	13	603			1.71185	0.79219	S(14-603)	
BC	13	604			1.71185	0.79219	S(14-603)	
BC	13	702	1809	748	0.46250	1.00638	Developed	52.9
BC	13	1001	1084	108	0.97950	0.95567	Developed	79.1
BC	13	1201	527	10	0.68885	0.95668	Developed	7
BC	13	1203	711	32	0.66322	0.95841	Developed	19.6
BC	13	1303	464	14	0.42310	1.07038	Developed	11.7
BC	13	1305			0.42310	1.07038	S(13-1303)	
BC	13	1308			0.42310	1.07038	S(13-1303)	
BC	13	1403	787	25	0.96425	0.92372	Developed	24.2
BC	13	1802	1002	98	0.58557	0.97738	Developed	13.8
BC	14	100			0.59909	0.95357	S(14-105)	
BC	14	101	473	27	0.80532	0.93779	Developed	6.6
BC	14	104	1145	675	0.52144	0.96890	Developed	12.9
BC	14	105	1267	1575	0.59909	0.95357	Developed	11.3
BC	14	106	400	7	0.35916	1.04377	Developed	14.2
BC	14	201	557	51	0.61612	0.94542	Developed	8.1
BC	14	204	1046	3386	0.76031	0.93085	Developed	9.8
BC	14	206	571	19	0.44614	0.98202	Developed	4.9
BC	14	208	785	95	1.14576	0.81339	Developed	15.3
BC	14	300			0.49873	0.97831	S(14-304)	
BC	14	301	873	14	0.82581	0.92173	Developed	24.7

jur	ecozone	species	volm	count	a	b	model	rmse
BC	14	303			0.57867	0.94726	S(13-303)	
BC	14	304	1163	1912	0.49873	0.97831	Developed	10.9
BC	14	400			1.03109	0.89958	S(14-402)	
BC	14	402	1259	824	1.03109	0.89958	Developed	50.4
BC	14	403	954	64	1.50291	0.85344	Developed	36.5
BC	14	500	1048	2759	1.07518	0.84843	Developed	13.8
BC	14	600			1.71185	0.79219	S(14-603)	
BC	14	602			1.71185	0.79219	S(14-603)	
BC	14	603	690	319	1.71185	0.79219	Developed	14.4
BC	14	604			1.71185	0.79219	S(14-603)	
BC	14	702	1442	455	0.76174	0.93328	Developed	48.1
BC	14	1001			0.97950	0.95567	S(13-1001)	
BC	14	1201	642	335	1.04483	0.91917	Developed	18.2
BC	14	1203	829	24	1.25524	0.89249	Developed	18.8
BC	14	1303	632	134	1.29663	0.86029	Developed	17
BC	14	1305			1.29663	0.86029	S(14-1303)	
BC	14	1308			1.29663	0.86029	S(14-1303)	
BC	14	1403			0.96425	0.92372	S(13-1403)	
BC	14	1802			0.58557	0.97738	S(13-1802)	
BC	14	3500	211	5	3.92258	0.60781	Developed	8.6
AB	4	101	27	4	0.55418	0.97839	Developed	0.1
AB	4	105	509	91	1.00838	0.83654	Developed	8.4
AB	4	203			1.14136	0.83394	S(4-204)	
AB	4	204	323	9	1.14136	0.83394	Developed	2
AB	4	216			1.14136	0.83394	S(4-G2)	
AB	4	302			0.32446	1.03296	S(9-302)	
AB	4	500			1.29870	0.81333	S(14-500)	
AB	4	601			0.56477	0.96552	S(9-602)	
AB	4	602			0.56477	0.96552	S(9-602)	
AB	4	1200			0.58716	0.94070	S(4-1201)	
AB	4	1201	375	24	0.58716	0.94070	Developed	3.8
AB	4	1203	344	4	0.46082	0.99309	Developed	0.9
AB	4	1303			0.83507	0.90048	S(9-1303)	
AB	5	101			0.56167	0.96617	S(9-101)	
AB	5	105			0.46902	0.97653	S(9-105)	
AB	5	203			0.40237	1.03636	S(9-203)	
AB	5	204			0.57506	0.95722	S(9-204)	
AB	5	216			0.58043	0.95569	S(9-G2)	
AB	5	302			0.32446	1.03296	S(9-302)	
AB	5	500			1.29870	0.81333	S(14-500)	
AB	5	601			0.56477	0.96552	S(9-602)	
AB	5	602			0.56477	0.96552	S(9-602)	
AB	5	1200			0.50825	0.97237	S(9-1201)	
AB	5	1201			0.50825	0.97237	S(9-1201)	
AB	5	1203			0.57268	0.93601	S(9-1203)	
AB	5	1303			0.83507	0.90048	S(9-1303)	
AB	6	101			0.56167	0.96617	S(9-101)	
AB	6	105			0.46902	0.97653	S(9-105)	
AB	6	203			0.40237	1.03636	S(9-203)	
AB	6	204			0.57506	0.95722	S(9-204)	
AB	6	216			0.58043	0.95569	S(9-G2)	
AB	6	302			0.32446	1.03296	S(9-302)	
AB	6	500			1.29870	0.81333	S(14-500)	
AB	6	601			0.56477	0.96552	S(9-602)	
AB	6	602			0.56477	0.96552	S(9-602)	
AB	6	1200			0.50825	0.97237	S(9-1201)	
AB	6	1201			0.50825	0.97237	S(9-1201)	
AB	6	1203			0.57268	0.93601	S(9-1203)	
AB	6	1303			0.83507	0.90048	S(9-1303)	
AB	9	101	380	79	0.56167	0.96617	Developed	2.2
AB	9	104			0.46902	0.97653	S(9-105)	
AB	9	105	648	409	0.46902	0.97653	Developed	4.6
AB	9	109			0.46902	0.97653	S(9-105)	
AB	9	203	225	27	0.40237	1.03636	Developed	1.9
AB	9	204	566	691	0.57506	0.95722	Developed	3.7
AB	9	216			0.58043	0.95569	S(9-G2)	
AB	9	302	382	40	0.32446	1.03296	Developed	5.7
AB	9	304			0.32446	1.03296	S(9-302)	
AB	9	305			0.32446	1.03296	S(9-302)	
AB	9	306			0.32446	1.03296	S(9-302)	
AB	9	500			1.29870	0.81333	S(14-500)	
AB	9	600			0.56477	0.96552	S(9-602)	
AB	9	601			0.56477	0.96552	S(9-602)	
AB	9	602	118	25	0.56477	0.96552	Developed	1.1

jur	ecozone	species	volm	count	a	b	model	rmse
AB	9	604			0.56477	0.96552	S(9-602)	
AB	9	1150			0.61442	0.94010	S(9-F1)	
AB	9	1200			0.50825	0.97237	S(9-1201)	
AB	9	1201	560	242	0.50825	0.97237	Developed	3.1
AB	9	1203	414	32	0.57268	0.93601	Developed	9.4
AB	9	1303	217	3	0.83507	0.90048	Developed	3.5
AB	9	1404			0.83507	0.90048	S(9-G10)	
AB	9	1500			0.83507	0.90048	S(9-G10)	
AB	9	1550			0.83507	0.90048	S(9-G10)	
AB	10	101			0.56167	0.96617	S(9-101)	
AB	10	104			0.46902	0.97653	S(9-105)	
AB	10	105			0.46902	0.97653	S(9-105)	
AB	10	203			0.40237	1.03636	S(9-203)	
AB	10	204			0.57506	0.95722	S(9-204)	
AB	10	216			0.58043	0.95569	S(9-G2)	
AB	10	302			0.32446	1.03296	S(9-302)	
AB	10	304			0.32446	1.03296	S(9-302)	
AB	10	500			1.29870	0.81333	S(14-500)	
AB	10	602			0.56477	0.96552	S(9-602)	
AB	10	604			0.56477	0.96552	S(9-602)	
AB	10	1150			0.61442	0.94010	S(9-F1)	
AB	10	1200			0.50825	0.97237	S(9-1201)	
AB	10	1201			0.50825	0.97237	S(9-1201)	
AB	10	1203			0.57268	0.93601	S(9-1203)	
AB	10	1303			0.83507	0.90048	S(9-1303)	
AB	10	1550			0.83507	0.90048	S(9-G10)	
AB	14	101			0.56167	0.96617	S(9-101)	
AB	14	104	568	9	0.66689	0.91800	Developed	2.1
AB	14	105			0.66689	0.91800	S(14-104)	
AB	14	109			0.66689	0.91800	S(14-104)	
AB	14	201			0.61612	0.94542	S(BC-14-201)	
AB	14	203			0.54036	0.96085	S(14-204)	
AB	14	204	378	40	0.54036	0.96085	Developed	3.3
AB	14	216			0.54036	0.96085	S(14-G2)	
AB	14	217			0.54036	0.96085	S(14-G2)	
AB	14	302			0.32446	1.03296	S(9-302)	
AB	14	304			0.32446	1.03296	S(9-302)	
AB	14	306			0.32446	1.03296	S(9-302)	
AB	14	402			1.03109	0.89958	S(BC-14-402)	
AB	14	500	411	9	1.29870	0.81333	Developed	12.9
AB	14	602			0.56477	0.96552	S(9-602)	
AB	14	604			0.56477	0.96552	S(9-602)	
AB	14	702			0.76174	0.93328	S(BC-14-702)	
AB	14	1150			0.68964	0.91682	S(14-F1)	
AB	14	1200			0.18755	1.14362	S(14-1201)	
AB	14	1201	297	9	0.18755	1.14362	Developed	12.2
AB	14	1203			0.57268	0.93601	S(9-1203)	
AB	14	1303			0.83507	0.90048	S(9-1303)	
AB	14	1404			0.83507	0.90048	S(9-G10)	
AB	14	1550			0.83507	0.90048	S(9-G10)	
SK	5	101			5.78582	0.53994	S(6-101)	
SK	5	105			0.58366	0.92361	S(9-105)	
SK	5	203			2.99867	0.66826	S(6-203)	
SK	5	302			0.51332	0.94234	S(MB-6-302)	
SK	5	602			0.31812	1.03772	S(MB-6-602)	
SK	5	1201			1.05832	0.83128	S(6-1201)	
SK	5	1303			0.71096	0.91835	S(MB-9-1303)	
SK	6	101	250	5	5.78582	0.53994	Developed	2.5
SK	6	105			0.58366	0.92361	S(9-105)	
SK	6	203	220	22	2.99867	0.66826	Developed	6.3
SK	6	302			0.51332	0.94234	S(MB-6-302)	
SK	6	602			0.31812	1.03772	S(MB-6-602)	
SK	6	701			1.83613	0.66364	S(MB-6-701)	
SK	6	1201	239	8	1.05832	0.83128	Developed	2.9
SK	6	1203			1.05832	0.83128	S(6-1201)	
SK	6	1303			0.71096	0.91835	S(MB-9-1303)	
SK	6	1404			1.16465	0.83486	S(QC-6-G10)	
SK	6	1500			1.38776	0.82228	S(QC-6-G12)	
SK	9	101	453	215	0.88681	0.86888	Developed	4.9
SK	9	105	586	353	0.58366	0.92361	Developed	5
SK	9	107			0.88681	0.86888	S(9-101)	
SK	9	203	458	228	0.62961	0.95191	Developed	7.2
SK	9	302			0.51332	0.94234	S(MB-6-302)	
SK	9	602			0.31812	1.03772	S(MB-6-602)	

jur	ecozone	species	volm	count	a	b	model	rmse
SK	9	701			1.83613	0.66364	S(MB-6-701)	
SK	9	1201	582	388	0.81618	0.87907	Developed	4.2
SK	9	1203	464	7	1.07554	0.82197	Developed	6.5
SK	9	1303			0.71096	0.91835	S(MB-9-1303)	
SK	9	1404			1.16465	0.83486	S(QC-6-G10)	
SK	9	1500			1.38776	0.82228	S(QC-6-G12)	
SK	9	2201			1.71727	0.76809	S(QC-6-2201)	
SK	9	3405			1.17792	0.82493	S(QC-6-3402)	
SK	10	101			0.88681	0.86888	S(9-101)	
SK	10	105			0.58366	0.92361	S(9-105)	
SK	10	203			0.62961	0.95191	S(9-203)	
SK	10	204			0.62961	0.95191	S(9-203)	
SK	10	302			0.51332	0.94234	S(MB-6-302)	
SK	10	602			0.31812	1.03772	S(MB-6-602)	
SK	10	1201			0.81618	0.87907	S(9-1201)	
SK	10	1203			1.07554	0.82197	S(9-1203)	
SK	10	1303			0.71096	0.91835	S(MB-9-1303)	
SK	10	1404			1.16465	0.83486	S(QC-6-G10)	
SK	10	2201			1.71727	0.76809	S(QC-6-2201)	
SK	10	3405			1.17792	0.82493	S(QC-6-3402)	
MB	3	101			0.66967	0.92007	S(6-101)	
MB	3	105			0.65194	0.92128	S(6-105)	
MB	3	203			0.58097	0.95525	S(6-203)	
MB	3	602			0.31812	1.03772	S(6-602)	
MB	3	1201			0.49064	0.97131	S(6-1201)	
MB	3	1203			0.49064	0.97131	S(6-1201)	
MB	3	1308			0.71096	0.91835	S(9-1303)	
MB	5	101			0.66967	0.92007	S(6-101)	
MB	5	105			0.65194	0.92128	S(6-105)	
MB	5	203			0.58097	0.95525	S(6-203)	
MB	5	302			0.51332	0.94234	S(6-302)	
MB	5	602			0.31812	1.03772	S(6-602)	
MB	5	1201			0.49064	0.97131	S(6-1201)	
MB	5	1203			0.49064	0.97131	S(6-1201)	
MB	5	1308			0.71096	0.91835	S(9-1303)	
MB	6	101	300	43	0.66967	0.92007	Developed	3.1
MB	6	105	167	9	0.65194	0.92128	Developed	1.1
MB	6	203	343	88	0.58097	0.95525	Developed	1.3
MB	6	209	326	20	0.44063	0.99533	Developed	2.2
MB	6	211	115	2	0.70230	0.91293	Developed	0.6
MB	6	302	319	7	0.51332	0.94234	Developed	5.9
MB	6	602	313	22	0.31812	1.03772	Developed	4.4
MB	6	701	477	8	1.83613	0.66364	Developed	6
MB	6	1201	251	34	0.49064	0.97131	Developed	1.1
MB	6	1203			0.49064	0.97131	S(6-1201)	
MB	6	1205			0.49064	0.97131	S(6-1201)	
MB	6	1308			0.71096	0.91835	S(9-1303)	
MB	6	1404			1.04502	0.88211	S(QC-6-G11)	
MB	6	1500			1.38776	0.82228	S(QC-6-G12)	
MB	6	2104			1.01533	0.88869	S(QC-6-2108)	
MB	6	2201			1.71727	0.76809	S(QC-6-2201)	
MB	6	3400			1.17792	0.82493	S(QC-6-3402)	
MB	9	101	287	52	0.33886	1.03630	Developed	2.5
MB	9	105	337	20	0.45402	0.96837	Developed	3
MB	9	203	258	39	0.24046	1.10499	Developed	1.6
MB	9	209			0.44063	0.99533	S(6-209)	
MB	9	302			0.51332	0.94234	S(6-302)	
MB	9	602			0.31812	1.03772	S(6-602)	
MB	9	701			1.83613	0.66364	S(6-701)	
MB	9	1201	284	32	0.41217	1.00319	Developed	1
MB	9	1203			0.41217	1.00319	S(9-1201)	
MB	9	1205			0.41217	1.00319	S(9-1201)	
MB	9	1303	106	4	0.71096	0.91835	Developed	4.6
MB	9	1308			0.71096	0.91835	S(9-1303)	
MB	9	1404			1.04502	0.88211	S(QC-6-G11)	
MB	9	1500			1.38776	0.82228	S(QC-6-G12)	
MB	9	2104			1.01533	0.88869	S(QC-6-2108)	
MB	9	2201			1.71727	0.76809	S(QC-6-2201)	
MB	9	3000			0.80228	0.89269	S(QC-6-3000)	
MB	9	3400			1.17792	0.82493	S(QC-6-3402)	
MB	9	3500			1.38776	0.82228	S(QC-6-G12)	
MB	10	101			0.66967	0.92007	S(6-101)	
MB	10	105			0.45402	0.96837	S(9-105)	
MB	10	203			0.24046	1.10499	S(9-203)	

jur	ecozone	species	volm	count	a	b	model	rmse
MB	10	209			0.44063	0.99533	S(6-209)	
MB	10	302			0.51332	0.94234	S(6-302)	
MB	10	602			0.31812	1.03772	S(6-602)	
MB	10	701			1.83613	0.66364	S(6-701)	
MB	10	1201			0.41217	1.00319	S(9-1201)	
MB	10	1203			0.41217	1.00319	S(9-1201)	
MB	10	1205			0.41217	1.00319	S(9-1201)	
MB	10	1308			0.71096	0.91835	S(9-1303)	
MB	10	1404			1.04502	0.88211	S(QC-6-G11)	
MB	10	1500			1.38776	0.82228	S(QC-6-G12)	
MB	10	2104			1.01533	0.88869	S(QC-6-2108)	
MB	10	2201			1.71727	0.76809	S(QC-6-2201)	
MB	10	3000			0.80228	0.89269	S(QC-6-3000)	
MB	10	3400			1.17792	0.82493	S(QC-6-3402)	
MB	10	3500			1.38776	0.82228	S(QC-6-G12)	
MB	15	101			0.66967	0.92007	S(6-101)	
MB	15	103			0.65194	0.92128	S(6-105)	
MB	15	105			0.65194	0.92128	S(6-105)	
MB	15	203			0.58097	0.95525	S(6-203)	
MB	15	302			0.51332	0.94234	S(6-302)	
MB	15	602			0.31812	1.03772	S(6-602)	
MB	15	1201			0.49064	0.97131	S(6-1201)	
MB	15	1203			0.49064	0.97131	S(6-1201)	
MB	15	1308			0.71096	0.91835	S(9-1303)	
ON	6	101	375	384	0.77023	0.91649	Developed	3.4
ON	6	105	708	19	0.50948	0.97649	Developed	3.9
ON	6	202	739	20	0.46569	0.95674	Developed	5.3
ON	6	203	384	465	0.78623	0.91140	Developed	4.3
ON	6	209	662	28	0.45592	0.98648	Developed	6.2
ON	6	302	413	30	0.39767	1.02691	Developed	3.3
ON	6	401			1.10181	0.84087	S(QC-6-401)	
ON	6	602			1.06855	0.83510	S(QC-6-602)	
ON	6	701	556	8	0.54189	0.92004	Developed	4.2
ON	6	1200			0.58974	0.94683	S(6-1201)	
ON	6	1201	729	320	0.58974	0.94683	Developed	4.2
ON	6	1203	905	10	0.32271	1.05241	Developed	2.8
ON	6	1303	454	63	0.96655	0.88672	Developed	5.1
ON	6	1400			1.25608	0.85189	S(QC-6-1401)	
ON	6	1401			1.25608	0.85189	S(QC-6-1401)	
ON	6	4500			1.04502	0.88211	S(QC-6-G11)	
ON	6	5500			1.04502	0.88211	S(QC-6-G11)	
ON	8	101			0.77023	0.91649	S(6-101)	
ON	8	105			0.50948	0.97649	S(6-105)	
ON	8	202			0.46569	0.95674	S(6-202)	
ON	8	203			0.78623	0.91140	S(6-203)	
ON	8	209			0.45592	0.98648	S(6-209)	
ON	8	302			0.39767	1.02691	S(6-302)	
ON	8	401			1.02967	0.85162	S(QC-8-401)	
ON	8	602			1.07195	0.86243	S(QC-8-602)	
ON	8	701			0.54189	0.92004	S(6-701)	
ON	8	1200			1.05356	0.83107	S(QC-8-1201)	
ON	8	1303			0.96655	0.88672	S(6-1303)	
ON	8	1401			1.10941	0.88297	S(QC-8-1401)	
ON	8	4500			0.97042	0.89514	S(QC-8-G11)	
ON	8	5500			0.97042	0.89514	S(QC-8-G11)	
ON	15	101			0.77023	0.91649	S(6-101)	
ON	15	105			0.50948	0.97649	S(6-105)	
ON	15	202			0.46569	0.95674	S(6-202)	
ON	15	203			0.78623	0.91140	S(6-203)	
ON	15	209			0.45592	0.98648	S(6-209)	
ON	15	302			0.39767	1.02691	S(6-302)	
ON	15	602			1.06855	0.83510	S(QC-6-401)	
ON	15	701			0.54189	0.92004	S(6-701)	
ON	15	1200			0.58974	0.94683	S(6-1201)	
ON	15	1303			0.96655	0.88672	S(6-1303)	
ON	15	1400			1.25608	0.85189	S(QC-6-1401)	
ON	15	4500			1.04502	0.88211	S(QC-6-G11)	
ON	15	5500			1.04502	0.88211	S(QC-6-G11)	
QC	1	101			0.72502	0.91086	S(6-101)	
QC	1	105			0.83019	0.87375	S(6-105)	
QC	1	107			0.72502	0.91086	S(6-101)	
QC	1	302			1.00489	0.83591	S(6-302)	
QC	1	602			1.06855	0.83510	S(6-602)	
QC	1	1201			1.10348	0.82202	S(6-1201)	

jur	ecozone	species	volm	count	a	b	model	rmse
QC	1	1203			0.95633	0.85996	S(6-1203)	
QC	1	1303			1.30129	0.81005	S(6-1303)	
QC	2	101			0.72502	0.91086	S(6-101)	
QC	2	105			0.83019	0.87375	S(6-105)	
QC	2	107			0.72502	0.91086	S(6-101)	
QC	2	302			1.00489	0.83591	S(6-302)	
QC	2	602			1.06855	0.83510	S(6-602)	
QC	2	1201			1.10348	0.82202	S(6-1201)	
QC	2	1203			0.95633	0.85996	S(6-1203)	
QC	2	1303			1.30129	0.81005	S(6-1303)	
QC	3	101			0.72502	0.91086	S(6-101)	
QC	3	105			0.83019	0.87375	S(6-105)	
QC	3	107			0.72502	0.91086	S(6-101)	
QC	3	302			1.00489	0.83591	S(6-302)	
QC	3	602			1.06855	0.83510	S(6-602)	
QC	3	1201			1.10348	0.82202	S(6-1201)	
QC	3	1203			0.95633	0.85996	S(6-1203)	
QC	3	1303			1.30129	0.81005	S(6-1303)	
QC	5	101	147	75	0.72502	0.91086	Developed	2.1
QC	5	105			0.83019	0.87375	S(6-105)	
QC	5	107			0.72502	0.91086	S(6-101)	
QC	5	202			0.98902	0.83373	S(6-202)	
QC	5	203			1.49398	0.76552	S(6-203)	
QC	5	209			0.93164	0.86006	S(6-209)	
QC	5	302			1.00489	0.83591	S(6-302)	
QC	5	401			1.10181	0.84087	S(6-401)	
QC	5	602			1.06855	0.83510	S(6-602)	
QC	5	701			0.89038	0.84268	S(6-701)	
QC	5	1201			1.10348	0.82202	S(6-1201)	
QC	5	1203			0.95633	0.85996	S(6-1203)	
QC	5	1211			1.01787	0.84013	S(5-G9)	
QC	5	1301			1.04999	0.85834	S(6-1301)	
QC	5	1303			1.30129	0.81005	S(6-1303)	
QC	5	1401			1.25608	0.85189	S(6-1401)	
QC	5	1405			1.19837	0.83800	S(6-1405)	
QC	5	1550			1.38776	0.82228	S(5-G12)	
QC	6	101	445	19331	1.22548	0.80482	Developed	5.5
QC	6	102	369	557	2.33303	0.69163	Developed	16.7
QC	6	103			2.33303	0.69163	S(6-102)	
QC	6	105	367	1722	0.83019	0.87375	Developed	7.5
QC	6	107			2.33303	0.69163	S(6-102)	
QC	6	202	836	1194	0.98902	0.83373	Developed	11.7
QC	6	203	395	3754	1.49398	0.76552	Developed	6
QC	6	209	507	174	0.93164	0.86006	Developed	12.9
QC	6	211			0.93164	0.86006	S(6-209)	
QC	6	302	412	9928	1.00489	0.83591	Developed	7
QC	6	401	578	427	1.10181	0.84087	Developed	13.2
QC	6	602	263	288	1.06855	0.83510	Developed	5.2
QC	6	701	498	1874	0.89038	0.84268	Developed	8.7
QC	6	1201	577	5559	1.10348	0.82202	Developed	8
QC	6	1203	620	166	0.95633	0.85996	Developed	7.4
QC	6	1205			0.95633	0.85996	S(6-1203)	
QC	6	1206	558	574	0.96990	0.86199	Developed	11.5
QC	6	1211			1.01787	0.84013	S(6-G9)	
QC	6	1301	426	3518	1.04999	0.85834	Developed	10.4
QC	6	1303	423	10360	1.30129	0.81005	Developed	6.8
QC	6	1304	84	8	1.25720	0.86545	Developed	4.5
QC	6	1401	509	3925	1.25608	0.85189	Developed	11.9
QC	6	1405	362	1907	1.19837	0.83800	Developed	9.3
QC	6	1406	113	4	0.86295	0.88630	Developed	3.1
QC	6	1410	139	5	0.69379	1.04040	Developed	7.4
QC	6	1550			1.38776	0.82228	S(6-G12)	
QC	6	1601			2.83245	0.68807	S(8-1601)	
QC	6	1701	268	3	0.35197	1.06486	Developed	0.2
QC	6	1800	25	4	2.76699	0.69947	Developed	0.8
QC	6	1900	187	18	1.30775	0.85821	Developed	5.6
QC	6	2000	496	502	1.24619	0.85041	Developed	12.7
QC	6	2101			1.01533	0.88869	S(6-2108)	
QC	6	2102			1.01533	0.88869	S(6-2108)	
QC	6	2104			1.01533	0.88869	S(6-2108)	
QC	6	2108	377	349	1.01533	0.88869	Developed	9.1
QC	6	2201	168	6	1.71727	0.76809	Developed	2.1
QC	6	2202			1.71727	0.76809	S(6-2201)	
QC	6	2203			1.71727	0.76809	S(6-2201)	

jur	ecozone	species	volm	count	a	b	model	rmse
QC	6	2801	241	22	0.51126	1.03954	Developed	6.5
QC	6	2802	118	151	4.14535	0.61019	Developed	8.2
QC	6	3000	463	100	0.80228	0.89269	Developed	8
QC	6	3401	296	13	0.77124	0.92823	Developed	7.9
QC	6	3402	384	224	1.17792	0.82493	Developed	6.7
QC	6	3403			1.17792	0.82493	S(6-3402)	
QC	6	3500	121	114	2.90411	0.64778	Developed	5.7
QC	6	3960	139	13	2.77336	0.74638	Developed	7.4
QC	7	101	325	1385	0.95476	0.84293	Developed	5.3
QC	7	102	502	650	0.91250	0.85425	Developed	6.7
QC	7	103	329	16	8.67528	0.47598	Developed	14.7
QC	7	105	391	1113	0.95013	0.83786	Developed	7.4
QC	7	107			0.91250	0.85425	S(7-102)	
QC	7	202	454	40	0.55369	0.92741	Developed	10.6
QC	7	203	220	19	1.63882	0.75393	Developed	5.8
QC	7	209	294	28	0.79119	0.88870	Developed	5.8
QC	7	211	91	6	1.16975	0.79417	Developed	3.2
QC	7	302	395	6143	1.20871	0.80203	Developed	8.9
QC	7	401	422	105	1.33273	0.80405	Developed	11.2
QC	7	602	328	107	1.02507	0.82924	Developed	5.5
QC	7	701	543	1781	0.91762	0.82251	Developed	8.5
QC	7	1201	553	1905	1.08130	0.81903	Developed	7
QC	7	1203	476	257	0.73311	0.88423	Developed	8.7
QC	7	1205			0.73311	0.88423	S(7-1203)	
QC	7	1206	510	48	1.29627	0.80560	Developed	8.4
QC	7	1211			1.03052	0.82784	S(7-G9)	
QC	7	1301	417	1182	0.93143	0.90297	Developed	9.1
QC	7	1303	331	1778	1.67453	0.77248	Developed	9.5
QC	7	1304	134	38	1.44609	0.79050	Developed	3.3
QC	7	1401	554	2304	0.82525	0.95661	Developed	14.2
QC	7	1405	637	1626	1.13275	0.85940	Developed	8.6
QC	7	1406			0.82525	0.95661	S(7-1401)	
QC	7	1410	46	5	3.52526	0.57475	Developed	2.1
QC	7	1550			1.15980	0.87563	S(7-G12)	
QC	7	1701			4.14673	0.60943	S(8-1701)	
QC	7	1900	246	4	1.51822	0.82838	Developed	5.7
QC	7	2000	284	175	0.88516	0.93155	Developed	8.1
QC	7	2108			1.01533	0.88869	S(6-2108)	
QC	7	2201	106	8	0.81735	0.94571	Developed	4.6
QC	7	2202			0.81735	0.94571	S(7-2201)	
QC	7	2801	198	24	0.79133	0.94238	Developed	6.2
QC	7	2802	119	103	2.52434	0.74879	Developed	6.7
QC	7	3000			0.80228	0.89269	S(6-3000)	
QC	7	3401	386	47	0.48356	1.03500	Developed	15.8
QC	7	3402	189	55	0.96267	0.87780	Developed	6.9
QC	7	3403			0.96267	0.87780	S(7-3402)	
QC	7	3500	57	28	2.69108	0.62196	Developed	4.7
QC	7	3960	68	14	11.01469	0.41854	Developed	24.1
QC	8	101	191	75	1.11856	0.82961	Developed	4.1
QC	8	102	342	89	0.91446	0.87099	Developed	5.6
QC	8	103	418	7	9.80922	0.48276	Developed	39.4
QC	8	105	283	50	1.22191	0.78966	Developed	7.2
QC	8	107			0.91446	0.87099	S(8-102)	
QC	8	202	442	140	1.08631	0.81702	Developed	9.1
QC	8	203	201	13	1.38321	0.80607	Developed	7.7
QC	8	209	330	5	1.92479	0.73895	Developed	3.7
QC	8	211			1.92479	0.73895	S(8-209)	
QC	8	302	301	515	0.92889	0.86410	Developed	5.6
QC	8	401	461	205	1.02967	0.85162	Developed	8.3
QC	8	602	264	73	1.07195	0.86243	Developed	7.8
QC	8	701	376	208	1.19350	0.79098	Developed	8.2
QC	8	1201	387	272	1.05356	0.83107	Developed	5.4
QC	8	1203	328	27	1.31262	0.75216	Developed	4.6
QC	8	1205	238	10	2.70246	0.67178	Developed	10.7
QC	8	1206	390	75	1.15264	0.82865	Developed	6.8
QC	8	1211			1.04604	0.83612	S(8-G9)	
QC	8	1301	289	74	0.96893	0.88626	Developed	8.6
QC	8	1303	308	45	1.69789	0.76877	Developed	8.3
QC	8	1304	119	99	1.36505	0.81858	Developed	3.1
QC	8	1401	524	452	1.10941	0.88297	Developed	12.2
QC	8	1404	69	3	0.69504	1.01664	Developed	4.6
QC	8	1405	498	1120	1.07315	0.86813	Developed	7.6
QC	8	1406	594	76	1.31857	0.82285	Developed	14.5
QC	8	1550			1.39775	0.81916	S(8-G12)	

jur	ecozone	species	volm	count	a	b	model	rmse
QC	8	1601	206	10	2.83245	0.68807	Developed	6.4
QC	8	1701	278	5	4.14673	0.60943	Developed	6.5
QC	8	1900	134	13	2.86208	0.69117	Developed	3.2
QC	8	2000	322	60	1.15520	0.87147	Developed	10.3
QC	8	2101	174	11	1.29441	0.78767	Developed	2.9
QC	8	2102	189	3	1.24963	0.85654	Developed	1.2
QC	8	2104			1.12625	0.86949	S(8-2108)	
QC	8	2108	241	20	1.12625	0.86949	Developed	9.2
QC	8	2201	136	22	1.66394	0.75696	Developed	4.7
QC	8	2202	49	3	0.00317	2.38309	Developed	3.2
QC	8	2203			1.66394	0.75696	S(8-2201)	
QC	8	2801	325	12	1.86043	0.74400	Developed	6.6
QC	8	2802	40	6	2.80111	0.67228	Developed	3.7
QC	8	3000	425	23	0.86624	0.89472	Developed	5.5
QC	8	3401	267	28	1.39632	0.82080	Developed	8
QC	8	3402	203	23	1.43918	0.80014	Developed	5.9
QC	8	3403			1.39632	0.82080	S(8-3401)	
QC	8	3405	297	32	0.99015	0.84951	Developed	7.6
QC	8	3500	114	7	11.36563	0.50657	Developed	34.7
QC	15	101	275	78	0.91613	0.88082	Developed	2.6
QC	15	105			0.83019	0.87375	S(6-105)	
QC	15	107			0.91613	0.88082	S(15-101)	
QC	15	202			0.98902	0.83373	S(6-202)	
QC	15	203	132	11	0.39814	1.06612	Developed	2.3
QC	15	209			0.93164	0.86006	S(6-209)	
QC	15	302			1.00489	0.83591	S(6-302)	
QC	15	401			1.10181	0.84087	S(6-401)	
QC	15	602			1.06855	0.83510	S(6-602)	
QC	15	701			0.89038	0.84268	S(6-701)	
QC	15	1201			1.10348	0.82202	S(6-1201)	
QC	15	1203			0.95633	0.85996	S(6-1203)	
QC	15	1211			1.01787	0.84013	S(15-G9)	
QC	15	1301			1.04999	0.85834	S(6-1301)	
QC	15	1303			1.30129	0.81005	S(6-1303)	
QC	15	1401			1.25608	0.85189	S(6-1401)	
QC	15	1405			1.19837	0.83800	S(6-1405)	
QC	15	1550			1.38776	0.82228	S(15-G12)	
NB	7	100			0.53510	0.97379	S(7-102)	
NB	7	101	298	342	0.55739	0.94664	Developed	2.7
NB	7	102	364	329	0.53510	0.97379	Developed	9.8
NB	7	105	352	90	0.82309	0.87687	Developed	5.6
NB	7	107			0.53510	0.97379	S(7-102)	
NB	7	108			0.82309	0.87687	S(7-105)	
NB	7	202			0.55369	0.92741	S(QC-7-202)	
NB	7	203	319	100	1.65316	0.74939	Developed	3.3
NB	7	209			1.65316	0.74939	S(7-203)	
NB	7	302	344	466	0.86413	0.86935	Developed	8
NB	7	401			1.33273	0.80405	S(QC-7-401)	
NB	7	601			0.53570	0.96905	S(7-602)	
NB	7	602	249	9	0.53570	0.96905	Developed	4.4
NB	7	701	397	34	0.89422	0.83752	Developed	9.7
NB	7	1200			0.70402	0.92443	S(7-1201)	
NB	7	1201	451	182	0.70402	0.92443	Developed	4.8
NB	7	1203	308	5	2.03376	0.72389	Developed	8.1
NB	7	1206	287	13	0.82041	0.90548	Developed	4.9
NB	7	1301	307	29	1.68964	0.80308	Developed	9.1
NB	7	1303	256	91	0.93979	0.90421	Developed	5.6
NB	7	1304	109	2	0.83766	0.91497	Developed	0.8
NB	7	1401	278	112	0.83934	0.95899	Developed	9.6
NB	7	1405	316	129	0.67486	0.96776	Developed	8.2
NB	7	1500			0.86561	0.95475	S(7-G12)	
NB	7	1550			0.86561	0.95475	S(7-G12)	
NB	7	2000	257	49	0.86561	0.95475	Developed	8.8
NS	7	101	207	161	0.54428	0.96344	Developed	1.9
NS	7	102	567	306	0.47960	0.97796	Developed	5.9
NS	7	103	15	2	1.35898	1.04174	Developed	0.5
NS	7	105	277	199	0.49082	0.97586	Developed	5.7
NS	7	106			0.49082	0.97586	S(7-105)	
NS	7	107	396	212	0.54911	0.96189	Developed	4.7
NS	7	202	465	120	0.47919	0.95862	Developed	31.3
NS	7	203	105	5	1.41550	0.76902	Developed	4.2
NS	7	209	237	11	0.76983	0.85418	Developed	3.5
NS	7	211			0.76983	0.85418	S(7-209)	
NS	7	302	272	648	0.48497	0.98632	Developed	5.1

jur	ecozone	species	volm	count	a	b	model	rmse
NS	7	401	641	41	0.67307	0.92206	Developed	8.4
NS	7	601			0.58910	0.95084	S(7-602)	
NS	7	602	210	31	0.58910	0.95084	Developed	4.5
NS	7	701			0.32067	1.02788	S(PE-7-701)	
NS	7	1100			0.51636	0.95782	S(7-F1)	
NS	7	1150			0.51636	0.95782	S(7-F1)	
NS	7	1200	205	16	0.89414	0.87285	Developed	3.8
NS	7	1201	252	33	0.95670	0.85511	Developed	3.7
NS	7	1206	307	20	0.52252	0.98824	Developed	4.4
NS	7	1301	293	106	0.71940	0.97351	Developed	6.8
NS	7	1303	202	71	0.69540	0.96400	Developed	3.5
NS	7	1304	47	2	0.89673	0.89925	Developed	1.2
NS	7	1401	233	105	0.63275	1.01514	Developed	8.9
NS	7	1405	260	343	0.60437	0.98816	Developed	6.4
NS	7	1500			0.61628	1.00543	S(7-G12)	
NS	7	1550			0.61628	1.00543	S(7-G12)	
NS	7	2000	314	29	0.78152	0.96768	Developed	6.7
NS	7	2100	75	3	3.71583	0.67848	Developed	6.3
NS	7	2108	186	23	0.71646	0.94687	Developed	3.2
NS	7	2201			0.77616	0.93736	S(PE-7-2201)	
NS	7	2801	56	2	0.57681	0.97773	Developed	0.4
NS	7	3400			0.50973	1.03030	S(7-3401)	
NS	7	3401	208	14	0.50973	1.03030	Developed	2.6
NS	7	4000			0.61628	1.00543	S(7-G12)	
NS	7	5000			0.69608	0.92492	S(7-G9)	
PE	7	101	243	102	0.51439	0.97472	Developed	2.8
PE	7	102	214	49	0.45898	0.98104	Developed	2.5
PE	7	105	326	242	0.52351	0.96574	Developed	3.9
PE	7	202			0.55369	0.92741	S(QC-7-202)	
PE	7	209			0.76983	0.85418	S(NS-7-209)	
PE	7	302	299	221	0.43460	1.01533	Developed	5.8
PE	7	401	316	7	0.54503	0.96819	Developed	8.9
PE	7	602	290	26	0.72010	0.91134	Developed	3.6
PE	7	701	258	20	0.32067	1.02788	Developed	5.4
PE	7	1200			0.67919	0.93225	S(7-1201)	
PE	7	1201	319	55	0.67919	0.93225	Developed	4.9
PE	7	1206	343	13	0.61361	0.95448	Developed	5.5
PE	7	1301	155	26	0.54796	1.02886	Developed	3.8
PE	7	1303	227	45	0.78878	0.94231	Developed	4.8
PE	7	1304			0.78878	0.94231	S(7-1303)	
PE	7	1401	214	38	0.56984	1.02905	Developed	5.8
PE	7	1405	254	266	0.56425	1.00286	Developed	6.4
PE	7	1550			1.02860	0.89867	S(7-G12)	
PE	7	2000	192	18	0.75827	0.96855	Developed	4.6
PE	7	2108			0.71646	0.94687	S(NS-7-2108)	
PE	7	2200	284	5	0.77616	0.93736	Developed	4.3
PE	7	2201			0.77616	0.93736	S(7-2200)	
PE	7	2802	91	8	0.83877	0.92678	Developed	2.9
PE	7	3401	156	4	0.68413	0.98061	Developed	2.6
NF	1	101			0.70032	0.91663	S(5-101)	
NF	1	105			1.35030	0.78408	S(6-105)	
NF	1	302			0.95238	0.83696	S(5-302)	
NF	1	602			1.06855	0.83510	S(QC-6-602)	
NF	1	1303			0.82748	0.92404	S(6-1303)	
NF	5	101	217	44	0.70032	0.91663	Developed	2.1
NF	5	105			1.35030	0.78408	S(6-105)	
NF	5	202			0.98902	0.83373	S(QC-5-202)	
NF	5	302	265	17	0.95238	0.83696	Developed	2.4
NF	5	602			1.06855	0.83510	S(QC-5-602)	
NF	5	1201			1.10348	0.82202	S(QC-5-1201)	
NF	5	1203			0.95633	0.85996	S(QC-5-1203)	
NF	5	1301			1.04999	0.85834	S(QC-5-1301)	
NF	5	1303			0.82748	0.92404	S(6-1303)	
NF	5	1405			1.19837	0.83800	S(QC-5-1405)	
NF	5	1500			1.38776	0.82228	S(QC-6-G12)	
NF	6	101	263	300	0.82921	0.88429	Developed	3
NF	6	105	146	8	1.35030	0.78408	Developed	1.6
NF	6	202			0.98902	0.83373	S(QC-6-202)	
NF	6	209			0.93164	0.86006	S(QC-6-209)	
NF	6	302	376	382	0.81637	0.86923	Developed	5.5
NF	6	602			1.06855	0.83510	S(QC-6-602)	
NF	6	1201			1.10348	0.82202	S(QC-6-1201)	
NF	6	1203			0.95633	0.85996	S(QC-6-1203)	
NF	6	1301			1.04999	0.85834	S(QC-6-1301)	

jur	ecozone	species	volm	count	a	b	model	rmse
NF	6	1303	89	7	0.82748	0.92404	Developed	2.8
NF	6	1405			1.19837	0.83800	S(QC-6-1405)	
NF	6	1500			1.38776	0.82228	S(QC-6-G12)	
NF	6	3500			2.90411	0.64778	S(QC-6-3500)	
YK	2	101			0.56052	0.97384	S(12-101)	
YK	2	105			0.52672	0.97123	S(12-105)	
YK	2	204			0.49371	0.99450	S(12-204)	
YK	3	101			0.56052	0.97384	S(12-101)	
YK	3	105			0.52672	0.97123	S(12-105)	
YK	3	204			0.49371	0.99450	S(12-204)	
YK	3	304			0.54372	0.96563	S(12-G1)	
YK	3	602			0.49371	0.99450	S(12-G2)	
YK	3	1201			0.54480	0.98768	S(12-1201)	
YK	3	1203			0.54480	0.98768	S(12-1201)	
YK	3	1308			0.54480	0.98768	S(12-1201)	
YK	4	101			0.56052	0.97384	S(12-101)	
YK	4	105			0.52672	0.97123	S(12-105)	
YK	4	204			0.49371	0.99450	S(12-204)	
YK	4	304			0.54372	0.96563	S(12-G1)	
YK	4	602			0.49371	0.99450	S(12-G2)	
YK	4	1201			0.54480	0.98768	S(12-1201)	
YK	4	1203			0.54480	0.98768	S(12-1201)	
YK	4	1308			0.54480	0.98768	S(12-1201)	
YK	11	101			0.56052	0.97384	S(12-101)	
YK	11	105			0.52672	0.97123	S(12-105)	
YK	11	204			0.49371	0.99450	S(12-204)	
YK	11	304			0.54372	0.96563	S(12-G1)	
YK	11	602			0.49371	0.99450	S(12-G2)	
YK	11	1201			0.54480	0.98768	S(12-1201)	
YK	11	1203			0.54480	0.98768	S(12-1201)	
YK	11	1308			0.54480	0.98768	S(12-1201)	
YK	12	101	152	20	0.56052	0.97384	Developed	2.5
YK	12	105	376	119	0.52672	0.97123	Developed	3.3
YK	12	204	253	82	0.49371	0.99450	Developed	1.5
YK	12	304			0.54372	0.96563	S(12-G1)	
YK	12	602			0.49371	0.99450	S(12-G2)	
YK	12	1201	204	19	0.54480	0.98768	Developed	2
YK	12	1203			0.54480	0.98768	S(12-1201)	
YK	12	1308			0.54480	0.98768	S(12-1201)	
NT	2	101			0.56052	0.97384	S(YK-2-101)	
NT	2	105			0.52672	0.97123	S(YK-2-105)	
NT	2	204			0.49371	0.99450	S(YK-2-204)	
NT	3	101			0.56052	0.97384	S(YK-3-101)	
NT	3	105			0.52672	0.97123	S(YK-3-105)	
NT	3	204			0.49371	0.99450	S(YK-3-204)	
NT	3	304			0.54372	0.96563	S(YK-3-304)	
NT	3	602			0.49371	0.99450	S(YK-3-602)	
NT	3	1201			0.54480	0.98768	S(YK-3-1201)	
NT	3	1203			0.54480	0.98768	S(YK-3-1203)	
NT	3	1308			0.54480	0.98768	S(YK-3-1308)	
NT	4	101			0.55418	0.97839	S(AB-4-101)	
NT	4	105			1.00838	0.83654	S(AB-4-105)	
NT	4	203			1.14136	0.83394	S(AB-4-203)	
NT	4	204			1.14136	0.83394	S(AB-4-204)	
NT	4	216			1.14136	0.83394	S(AB-4-216)	
NT	4	302			0.32446	1.03296	S(AB-4-302)	
NT	4	500			1.29870	0.81333	S(AB-4-500)	
NT	4	601			0.56477	0.96552	S(AB-4-601)	
NT	4	602			0.56477	0.96552	S(AB-4-602)	
NT	4	1200			0.58716	0.94070	S(AB-4-1200)	
NT	4	1201			0.58716	0.94070	S(AB-4-1201)	
NT	4	1203			0.46082	0.99309	S(AB-4-1203)	
NT	4	1303			0.83507	0.90048	S(AB-4-1303)	
NT	5	101			0.56167	0.96617	S(AB-5-101)	
NT	5	105			0.46902	0.97653	S(AB-5-105)	
NT	5	203			0.40237	1.03636	S(AB-5-203)	
NT	5	204			0.57506	0.95722	S(AB-5-204)	
NT	5	216			0.58043	0.95569	S(AB-5-216)	
NT	5	302			0.32446	1.03296	S(AB-5-302)	
NT	5	500			1.29870	0.81333	S(AB-5-500)	
NT	5	601			0.56477	0.96552	S(AB-5-601)	
NT	5	602			0.56477	0.96552	S(AB-5-602)	
NT	5	1200			0.50825	0.97237	S(AB-5-1200)	
NT	5	1201			0.50825	0.97237	S(AB-5-1201)	

jur	ecozone	species	volm	count	a	b	model	rmse
NT	5	1203			0.57268	0.93601	S(AB-5-1203)	
NT	5	1303			0.83507	0.90048	S(AB-5-1303)	
NT	9	101			0.56167	0.96617	S(AB-9-101)	
NT	9	104			0.46902	0.97653	S(AB-9-104)	
NT	9	105			0.46902	0.97653	S(AB-9-105)	
NT	9	109			0.46902	0.97653	S(AB-9-109)	
NT	9	203			0.40237	1.03636	S(AB-9-203)	
NT	9	204			0.57506	0.95722	S(AB-9-204)	
NT	9	216			0.58043	0.95569	S(AB-9-216)	
NT	9	302			0.32446	1.03296	S(AB-9-302)	
NT	9	304			0.32446	1.03296	S(AB-9-304)	
NT	9	305			0.32446	1.03296	S(AB-9-305)	
NT	9	306			0.32446	1.03296	S(AB-9-306)	
NT	9	500			1.29870	0.81333	S(AB-9-500)	
NT	9	600			0.56477	0.96552	S(AB-9-600)	
NT	9	601			0.56477	0.96552	S(AB-9-601)	
NT	9	602			0.56477	0.96552	S(AB-9-602)	
NT	9	604			0.56477	0.96552	S(AB-9-604)	
NT	9	1150			0.61442	0.94010	S(AB-9-1150)	
NT	9	1200			0.50825	0.97237	S(AB-9-1200)	
NT	9	1201			0.50825	0.97237	S(AB-9-1201)	
NT	9	1203			0.57268	0.93601	S(AB-9-1203)	
NT	9	1303			0.83507	0.90048	S(AB-9-1303)	
NT	9	1404			0.83507	0.90048	S(AB-9-1404)	
NT	9	1500			0.83507	0.90048	S(AB-9-1500)	
NT	9	1550			0.83507	0.90048	S(AB-9-1550)	
NT	11	101			0.56052	0.97384	S(YK-11-101)	
NT	11	105			0.52672	0.97123	S(YK-11-105)	
NT	11	204			0.49371	0.99450	S(YK-11-204)	
NT	11	304			0.54372	0.96563	S(YK-11-304)	
NT	11	602			0.49371	0.99450	S(YK-11-602)	
NT	11	1201			0.54480	0.98768	S(YK-11-1201)	
NT	11	1203			0.54480	0.98768	S(YK-11-1203)	
NT	11	1308			0.54480	0.98768	S(YK-11-1308)	
NT	12	101			0.56052	0.97384	S(YK-12-101)	
NT	12	105			0.52672	0.97123	S(YK-12-105)	
NT	12	204			0.49371	0.99450	S(YK-12-204)	
NT	12	304			0.54372	0.96563	S(YK-12-304)	
NT	12	602			0.49371	0.99450	S(YK-12-602)	
NT	12	1201			0.54480	0.98768	S(YK-12-1201)	
NT	12	1203			0.54480	0.98768	S(YK-12-1203)	
NT	12	1308			0.54480	0.98768	S(YK-12-1308)	
NU	1	101			0.72502	0.91086	S(QC-1-101)	
NU	1	105			0.83019	0.87375	S(QC-1-105)	
NU	1	107			0.72502	0.91086	S(QC-1-107)	
NU	1	302			1.00489	0.83591	S(QC-1-302)	
NU	1	602			1.06855	0.83510	S(QC-1-602)	
NU	1	1201			1.10348	0.82202	S(QC-1-1201)	
NU	1	1203			0.95633	0.85996	S(QC-1-1203)	
NU	1	1303			1.30129	0.81005	S(QC-1-1303)	
NU	2	101			0.72502	0.91086	S(QC-2-101)	
NU	2	105			0.83019	0.87375	S(QC-2-105)	
NU	2	107			0.72502	0.91086	S(QC-2-107)	
NU	2	302			1.00489	0.83591	S(QC-2-302)	
NU	2	602			1.06855	0.83510	S(QC-2-602)	
NU	2	1201			1.10348	0.82202	S(QC-2-1201)	
NU	2	1203			0.95633	0.85996	S(QC-2-1203)	
NU	2	1303			1.30129	0.81005	S(QC-2-1303)	
NU	3	101			0.72502	0.91086	S(QC-3-101)	
NU	3	105			0.83019	0.87375	S(QC-3-105)	
NU	3	107			0.72502	0.91086	S(QC-3-107)	
NU	3	302			1.00489	0.83591	S(QC-3-302)	
NU	3	602			1.06855	0.83510	S(QC-3-602)	
NU	3	1201			1.10348	0.82202	S(QC-3-1201)	
NU	3	1203			0.95633	0.85996	S(QC-3-1203)	
NU	3	1303			1.30129	0.81005	S(QC-3-1303)	
NU	5	101			0.72502	0.91086	S(QC-5-101)	
NU	5	105			0.83019	0.87375	S(QC-5-105)	
NU	5	107			0.72502	0.91086	S(QC-5-107)	
NU	5	202			0.98902	0.83373	S(QC-5-202)	
NU	5	203			1.49398	0.76552	S(QC-5-203)	
NU	5	209			0.93164	0.86006	S(QC-5-209)	
NU	5	302			1.00489	0.83591	S(QC-5-302)	
NU	5	401			1.10181	0.84087	S(QC-5-401)	

jur	ecozone	species	volm	count	a	b	model	rmse
NU	5	602			1.06855	0.83510	S(QC-5-602)	
NU	5	701			0.89038	0.84268	S(QC-5-701)	
NU	5	1201			1.10348	0.82202	S(QC-5-1201)	
NU	5	1203			0.95633	0.85996	S(QC-5-1203)	
NU	5	1211			1.01787	0.84013	S(QC-5-1211)	
NU	5	1301			1.04999	0.85834	S(QC-5-1301)	
NU	5	1303			1.30129	0.81005	S(QC-5-1303)	
NU	5	1401			1.25608	0.85189	S(QC-5-1401)	
NU	5	1405			1.19837	0.83800	S(QC-5-1405)	
NU	5	1550			1.38776	0.82228	S(QC-5-1550)	
NU	15	101			0.91613	0.88082	S(QC-15-101)	
NU	15	105			0.83019	0.87375	S(QC-15-105)	
NU	15	107			0.91613	0.88082	S(QC-15-107)	
NU	15	202			0.98902	0.83373	S(QC-15-202)	
NU	15	203			0.39814	1.06612	S(QC-15-203)	
NU	15	209			0.93164	0.86006	S(QC-15-209)	
NU	15	302			1.00489	0.83591	S(QC-15-302)	
NU	15	401			1.10181	0.84087	S(QC-15-401)	
NU	15	602			1.06855	0.83510	S(QC-15-602)	
NU	15	701			0.89038	0.84268	S(QC-15-701)	
NU	15	1201			1.10348	0.82202	S(QC-15-1201)	
NU	15	1203			0.95633	0.85996	S(QC-15-1203)	
NU	15	1211			1.01787	0.84013	S(QC-15-1211)	
NU	15	1301			1.04999	0.85834	S(QC-15-1301)	
NU	15	1303			1.30129	0.81005	S(QC-15-1303)	
NU	15	1401			1.25608	0.85189	S(QC-15-1401)	
NU	15	1405			1.19837	0.83800	S(QC-15-1405)	
NU	15	1550			1.38776	0.82228	S(QC-15-1550)	

Table 3a. Dead tree biomass

$P_{dead} = prop \times b\_m$
jur = jurisdiction
P_{dead} = dead tree biomass/ha (tonnes)
prop = prop1 - prop5 = proportion corresponding to first centile (volume<v1); second centile (v1<=volume<v2); etc.
v1, v2, v3, v4 = centile boundaries (volume in m^3/ha)
b_m = expected stem wood biomass of merchantable-sized trees

jur	ecozone	genus	prop1	prop2	prop3	prop4	prop5	v1	v2	v3	v4
AB	4	1	0.233	0.131	0.097	0.079	0.107	211	291	333	387
AB	4	2	0.199	0.095	0.151	0.112	0.234	143	164	183	224
AB	4	3	0.667	0.334	0.203	0.236	0.214	167	206	233	278
AB	4	6	0.248	0.118	0.086	0.088	0.030	11	23	44	81
AB	4	9	0.082	0.098	0.101	0.106	0.084	192	254	301	351
AB	4	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	4	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	5	1	0.201	0.149	0.146	0.118	0.112	197	294	352	425
AB	5	2	0.122	0.096	0.099	0.090	0.085	149	241	312	397
AB	5	9	0.168	0.150	0.147	0.133	0.130	179	260	316	387
AB	5	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	6	1	0.201	0.149	0.146	0.118	0.112	197	294	352	425
AB	6	2	0.122	0.096	0.099	0.090	0.085	149	241	312	397
AB	6	9	0.168	0.150	0.147	0.133	0.130	179	260	316	387
AB	6	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	9	1	0.201	0.149	0.146	0.118	0.112	197	294	352	425
AB	9	2	0.122	0.096	0.099	0.090	0.085	149	241	312	397
AB	9	3	0.667	0.334	0.203	0.236	0.214	167	206	233	278
AB	9	5	0.041	0.011	0.073	0.206	0.059	176	236	305	383
AB	9	6	0.248	0.118	0.086	0.088	0.030	11	23	44	81
AB	9	8	0.201	0.149	0.146	0.118	0.112	197	294	352	425
AB	9	9	0.168	0.150	0.147	0.133	0.130	179	260	316	387
AB	9	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	9	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	10	1	0.201	0.149	0.146	0.118	0.112	197	294	352	425
AB	10	2	0.122	0.096	0.099	0.090	0.085	149	241	312	397
AB	10	5	0.041	0.011	0.073	0.206	0.059	176	236	305	383
AB	10	8	0.201	0.149	0.146	0.118	0.112	197	294	352	425
AB	10	9	0.168	0.150	0.147	0.133	0.130	179	260	316	387
AB	10	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	14	1	0.136	0.040	0.049	0.075	0.031	189	252	320	442
AB	14	2	0.043	0.085	0.056	0.063	0.069	89	158	226	285
AB	14	3	0.033	0.039	0.079	0.012	0.015	88	188	281	300
AB	14	5	0.041	0.011	0.073	0.206	0.059	176	236	305	383
AB	14	6	0.248	0.118	0.086	0.088	0.030	11	23	44	81
AB	14	8	0.201	0.149	0.146	0.118	0.112	197	294	352	425
AB	14	9	0.040	0.445	0.157	0.156	0.245	81	131	191	270
AB	14	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
AB	14	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
BC	4	1	0.068	0.217	0.106	0.194	0.263	59	122	209	355
BC	4	2	0.177	0.063	0.049	0.044	0.096	53	101	183	283
BC	4	3	0.667	0.126	0.192	0.294	0.507	23	65	123	229
BC	4	4	0.667	0.390	0.233	0.215	0.165	193	288	377	531
BC	4	5	0.144	0.244	0.219	0.195	0.177	73	142	234	399
BC	4	6	0.222	0.129	0.177	0.216	0.206	105	172	237	335
BC	4	7	0.667	0.392	0.287	0.166	0.144	181	285	399	592
BC	4	8	0.068	0.217	0.106	0.194	0.263	59	122	209	355
BC	4	9	0.009	0.112	0.101	0.136	0.115	68	135	206	312
BC	4	10	0.667	0.000	0.667	0.000	0.254	6	8	28	155
BC	4	13	0.009	0.112	0.101	0.136	0.115	68	135	206	312
BC	9	1	0.188	0.018	0.145	0.000	0.122	72	138	199	287
BC	9	2	0.091	0.061	0.060	0.078	0.108	82	136	185	261
BC	9	3	0.667	0.432	0.415	0.328	0.242	99	177	262	394
BC	9	6	0.222	0.129	0.177	0.216	0.206	105	172	237	335
BC	9	7	0.667	0.392	0.287	0.166	0.144	181	285	399	592
BC	9	8	0.188	0.018	0.145	0.000	0.122	72	138	199	287
BC	9	9	0.136	0.064	0.119	0.058	0.066	98	156	217	312
BC	9	10	0.000	0.000	0.532	0.000	0.409	64	73	79	103
BC	9	12	0.136	0.064	0.119	0.058	0.066	98	156	217	312
BC	9	13	0.136	0.064	0.119	0.058	0.066	98	156	217	312
BC	12	1	0.212	0.245	0.064	0.237	0.185	36	76	115	187
BC	12	2	0.134	0.033	0.085	0.149	0.135	43	75	125	215

jur	ecozone	genus	prop1	prop2	prop3	prop4	prop5	v1	v2	v3	v4
BC	12	3	0.667	0.126	0.192	0.294	0.507	23	65	123	229
BC	12	4	0.437	0.316	0.205	0.155	0.119	218	469	719	1042
BC	12	6	0.222	0.129	0.177	0.216	0.206	105	172	237	335
BC	12	7	0.667	0.392	0.287	0.166	0.144	181	285	399	592
BC	12	8	0.212	0.245	0.064	0.237	0.185	36	76	115	187
BC	12	9		0.395	0.667	0.000	0.000		59	131	212
BC	12	10	0.667	0.411	0.184	0.181	0.118	94	165	233	329
BC	12	11	0.667	0.098	0.172	0.290	0.002	136	312	470	718
BC	12	12	0.450	0.289	0.178	0.156	0.128	138	245	367	551
BC	13	1	0.328	0.206	0.154	0.149	0.119	357	695	961	1320
BC	13	2	0.417	0.173	0.154	0.170	0.227	36	104	180	339
BC	13	3	0.227	0.223	0.170	0.121	0.081	104	291	539	891
BC	13	4	0.437	0.316	0.205	0.155	0.119	218	469	719	1042
BC	13	5	0.172	0.208	0.138	0.109	0.095	174	323	490	787
BC	13	6	0.222	0.129	0.177	0.216	0.206	105	172	237	335
BC	13	7	0.552	0.364	0.264	0.231	0.125	158	348	517	780
BC	13	8	0.437	0.316	0.205	0.155	0.119	218	469	719	1042
BC	13	9	0.187	0.172	0.081	0.109	0.041	50	101	164	421
BC	13	10	0.667	0.411	0.184	0.181	0.118	94	165	233	329
BC	13	11	0.667	0.098	0.172	0.290	0.002	136	312	470	718
BC	13	12	0.450	0.289	0.178	0.156	0.128	138	245	367	551
BC	13	13	0.187	0.172	0.081	0.109	0.041	50	101	164	421
BC	14	1	0.420	0.285	0.269	0.258	0.222	132	232	330	473
BC	14	2	0.299	0.170	0.138	0.157	0.180	65	143	231	369
BC	14	3	0.667	0.432	0.415	0.328	0.242	99	177	262	394
BC	14	4	0.667	0.390	0.233	0.215	0.165	193	288	377	531
BC	14	5	0.144	0.244	0.219	0.195	0.177	73	142	234	399
BC	14	6	0.222	0.129	0.177	0.216	0.206	105	172	237	335
BC	14	7	0.667	0.392	0.287	0.166	0.144	181	285	399	592
BC	14	8	0.144	0.244	0.219	0.195	0.177	73	142	234	399
BC	14	9	0.097	0.126	0.101	0.099	0.087	53	94	148	250
BC	14	10	0.667	0.411	0.184	0.181	0.118	94	165	233	329
BC	14	11	0.667	0.098	0.172	0.290	0.002	136	312	470	718
BC	14	12	0.450	0.289	0.178	0.156	0.128	138	245	367	551
BC	14	13	0.097	0.126	0.101	0.099	0.087	53	94	148	250
MB	3	2	0.559	0.155	0.105	0.071	0.071	23	53	92	160
MB	5	1	0.667	0.112	0.320	0.126	0.066	40	81	127	187
MB	5	2	0.559	0.155	0.105	0.071	0.071	23	53	92	160
MB	5	8	0.667	0.112	0.320	0.126	0.066	40	81	127	187
MB	5	9	0.216	0.527	0.330	0.314	0.286	14	39	74	132
MB	5	10	0.667	0.171	0.181	0.135	0.188	13	41	78	123
MB	6	1	0.667	0.112	0.320	0.126	0.066	40	81	127	187
MB	6	2	0.559	0.155	0.105	0.071	0.071	23	53	92	160
MB	6	3	0.028	0.093	0.135	0.037	0.210	20	33	94	229
MB	6	6	0.316	0.143	0.044	0.046	0.098	87	124	174	232
MB	6	7	0.365	0.331	0.081	0.096	0.000	100	144	193	334
MB	6	9	0.216	0.527	0.330	0.314	0.286	14	39	74	132
MB	6	10	0.667	0.171	0.181	0.135	0.188	13	41	78	123
MB	6	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
MB	6	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
MB	9	1	0.667	0.455	0.163	0.144	0.071	50	100	142	196
MB	9	2	0.667	0.667	0.185	0.074	0.090	14	39	74	129
MB	9	3	0.667	0.230	0.261	0.339	0.064	79	104	184	295
MB	9	6	0.465	0.017	0.263	0.369	0.104	53	95	124	163
MB	9	7	0.365	0.331	0.081	0.096	0.000	100	144	193	334
MB	9	9	0.667	0.667	0.259	0.126	0.152	19	44	91	164
MB	9	10	0.667	0.667	0.259	0.126	0.152	19	44	91	164
MB	9	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
MB	9	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
MB	10	1	0.000	0.050	0.041	0.017	0.074	33	80	224	397
MB	10	2	0.667	0.667	0.185	0.074	0.090	14	39	74	129
MB	10	3	0.028	0.093	0.135	0.037	0.210	20	33	94	229
MB	10	6	0.316	0.143	0.044	0.046	0.098	87	124	174	232
MB	10	9	0.667	0.667	0.259	0.126	0.152	19	44	91	164
MB	10	10	0.667	0.667	0.259	0.126	0.152	19	44	91	164
MB	10	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
MB	10	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
MB	15	1	0.667	0.112	0.320	0.126	0.066	40	81	127	187
MB	15	2	0.559	0.155	0.105	0.071	0.071	23	53	92	160
MB	15	8	0.667	0.112	0.320	0.126	0.066	40	81	127	187
MB	15	9	0.216	0.527	0.330	0.314	0.286	14	39	74	132
MB	15	10	0.667	0.171	0.181	0.135	0.188	13	41	78	123
MB	15	13	0.667	0.171	0.181	0.135	0.188	13	41	78	123
NB	7	1	0.218	0.117	0.087	0.063	0.039	95	151	192	243
NB	7	2	0.000	0.000	0.077	0.053	0.054	6	58	160	240

jur	ecozone	genus	prop1	prop2	prop3	prop4	prop5	v1	v2	v3	v4
NB	7	3	0.338	0.171	0.107	0.089	0.072	88	160	195	235
NB	7	4	0.000	0.000	0.004	0.009	0.002	115	155	198	236
NB	7	6	0.314	0.126	0.085	0.046	0.053	129	170	187	212
NB	7	7	0.297	0.059	0.020	0.046	0.059	156	214	259	318
NB	7	8	0.218	0.117	0.087	0.063	0.039	95	151	192	243
NB	7	9	0.123	0.106	0.074	0.069	0.045	109	168	200	250
NB	7	10	0.179	0.114	0.070	0.052	0.045	84	139	166	196
NB	7	11	0.151	0.084	0.081	0.056	0.042	109	148	177	214
NB	7	12	0.456	0.136	0.153	0.087	0.073	108	138	162	190
NB	7	13	0.456	0.136	0.153	0.087	0.073	108	138	162	190
NF	1	1	0.000	0.000	0.026	0.058	0.051	19	48	92	146
NF	5	1	0.000	0.000	0.026	0.058	0.051	19	48	92	146
NF	5	3	0.000	0.000	0.000	0.000	0.072	11	23	67	155
NF	5	8	0.000	0.000	0.000	0.000	0.072	11	23	67	155
NF	5	9	0.085	0.055	0.048	0.041	0.031	54	104	146	206
NF	5	10	0.000	0.000	0.000	0.000	0.090	7	17	46	78
NF	6	1	0.001	0.027	0.062	0.095	0.081	16	43	81	134
NF	6	2	0.139	0.047	0.054	0.042	0.044	28	65	115	189
NF	6	3	0.002	0.007	0.075	0.125	0.084	18	55	106	163
NF	6	6	0.161	0.120	0.032	0.051	0.048	6	20	40	92
NF	6	8	0.002	0.007	0.075	0.125	0.084	18	55	106	163
NF	6	9	0.085	0.055	0.048	0.041	0.031	54	104	146	206
NF	6	10	0.000	0.000	0.000	0.000	0.090	7	17	46	78
NF	6	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
NF	6	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
NF	6	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196
NS	7	1	0.352	0.224	0.134	0.100	0.067	26	57	100	172
NS	7	2	0.092	0.077	0.067	0.058	0.055	40	86	141	225
NS	7	3	0.667	0.257	0.187	0.160	0.106	30	61	94	141
NS	7	4	0.096	0.071	0.059	0.051	0.031	88	152	215	316
NS	7	6	0.382	0.175	0.062	0.122	0.064	12	26	56	119
NS	7	7	0.667	0.213	0.498	0.304	0.179	72	127	166	206
NS	7	8	0.352	0.224	0.134	0.100	0.067	26	57	100	172
NS	7	9	0.034	0.087	0.084	0.096	0.129	24	53	84	130
NS	7	10	0.667	0.201	0.129	0.140	0.078	26	56	90	137
NS	7	11	0.197	0.155	0.101	0.086	0.060	37	72	110	158
NS	7	12	0.057	0.128	0.073	0.079	0.052	30	65	102	158
NS	7	13	0.057	0.128	0.073	0.079	0.052	30	65	102	158
NT	3	1	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	3	8	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	4	1	0.233	0.131	0.097	0.079	0.107	211	291	333	387
NT	4	2	0.199	0.095	0.151	0.112	0.234	143	164	183	224
NT	4	3	0.667	0.334	0.203	0.236	0.214	167	206	233	278
NT	4	6	0.248	0.118	0.086	0.088	0.030	11	23	44	81
NT	4	9	0.082	0.098	0.101	0.106	0.084	192	254	301	351
NT	4	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
NT	4	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
NT	5	1	0.201	0.149	0.146	0.118	0.112	197	294	352	425
NT	5	2	0.122	0.096	0.099	0.090	0.085	149	241	312	397
NT	5	9	0.168	0.150	0.147	0.133	0.130	179	260	316	387
NT	5	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
NT	9	1	0.201	0.149	0.146	0.118	0.112	197	294	352	425
NT	9	2	0.122	0.096	0.099	0.090	0.085	149	241	312	397
NT	9	3	0.667	0.334	0.203	0.236	0.214	167	206	233	278
NT	9	5	0.041	0.011	0.073	0.206	0.059	176	236	305	383
NT	9	6	0.248	0.118	0.086	0.088	0.030	11	23	44	81
NT	9	8	0.201	0.149	0.146	0.118	0.112	197	294	352	425
NT	9	9	0.168	0.150	0.147	0.133	0.130	179	260	316	387
NT	9	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
NT	9	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
NT	11	1	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	11	2	0.000	0.002	0.002	0.000	0.000	25	48	72	132
NT	11	3	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	11	6	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	11	8	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	11	9	0.000	0.000	0.000	0.000	0.000	13	34	64	127
NT	11	13	0.000	0.000	0.000	0.000	0.000	13	34	64	127
NT	12	1	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	12	2	0.000	0.002	0.002	0.000	0.000	25	48	72	132
NT	12	3	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	12	6	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	12	8	0.004	0.002	0.000	0.000	0.000	29	60	100	176
NT	12	9	0.000	0.000	0.000	0.000	0.000	13	34	64	127
NT	12	10	0.000	0.000	0.000	0.000	0.000	13	34	64	127
NT	12	13	0.000	0.000	0.000	0.000	0.000	13	34	64	127

jur	ecozone	genus	prop1	prop2	prop3	prop4	prop5	v1	v2	v3	v4
NU	1	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85
NU	2	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85
NU	3	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85
NU	5	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85
NU	5	2	0.139	0.047	0.054	0.042	0.044	28	65	115	189
NU	5	3	0.164	0.084	0.064	0.062	0.056	43	83	117	164
NU	5	6	0.161	0.120	0.032	0.051	0.048	6	20	40	92
NU	5	8	0.057	0.118	0.120	0.041	0.060	19	36	57	85
NU	5	10	0.168	0.097	0.073	0.038	0.032	40	79	115	162
NU	5	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
NU	5	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196
NU	15	1	0.131	0.056	0.305	0.090	0.040	8	21	48	111
NU	15	2	0.000	0.052	0.253	0.019	0.023	10	33	61	93
NU	15	3	0.164	0.084	0.064	0.062	0.056	43	83	117	164
NU	15	6	0.161	0.120	0.032	0.051	0.048	6	20	40	92
NU	15	8	0.131	0.056	0.305	0.090	0.040	8	21	48	111
NU	15	9	0.085	0.055	0.048	0.041	0.031	54	104	146	206
NU	15	10	0.168	0.097	0.073	0.038	0.032	40	79	115	162
NU	15	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
NU	15	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196
ON	6	1	0.657	0.161	0.273	0.113	0.058	44	88	138	198
ON	6	2	0.513	0.168	0.115	0.071	0.069	24	55	96	169
ON	6	3	0.028	0.093	0.135	0.037	0.210	20	33	94	229
ON	6	4	0.003	0.006	0.037	0.007	0.016	110	177	224	281
ON	6	6	0.280	0.114	0.045	0.047	0.101	88	128	180	236
ON	6	7	0.304	0.257	0.108	0.076	0.000	108	150	196	339
ON	6	8	0.657	0.161	0.273	0.113	0.058	44	88	138	198
ON	6	9	0.216	0.476	0.334	0.342	0.255	14	42	79	142
ON	6	10	0.667	0.667	0.156	0.131	0.142	7	43	83	109
ON	6	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
ON	6	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
ON	6	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196
ON	8	1	0.079	0.019	0.082	0.013	0.051	84	114	158	210
ON	8	2	0.000	0.000	0.009	0.004	0.045	38	82	134	203
ON	8	3	0.056	0.023	0.007	0.082	0.033	37	75	112	157
ON	8	4	0.000	0.007	0.020	0.039	0.023	98	149	174	229
ON	8	6	0.000	0.462	0.046	0.099	0.040	20	47	76	114
ON	8	7	0.000	0.111	0.021	0.017	0.064	12	46	111	192
ON	8	8	0.079	0.019	0.082	0.013	0.051	84	114	158	210
ON	8	9	0.030	0.031	0.033	0.015	0.048	36	63	87	132
ON	8	10	0.069	0.024	0.000	0.000	0.025	26	48	76	142
ON	8	11	0.040	0.027	0.019	0.032	0.015	75	122	161	219
ON	8	12	0.028	0.040	0.040	0.012	0.006	77	111	143	194
ON	8	13	0.028	0.040	0.040	0.012	0.006	77	111	143	194
ON	9	1	0.667	0.332	0.133	0.113	0.058	54	103	146	198
ON	9	2	0.667	0.602	0.121	0.075	0.072	16	40	74	128
ON	9	3	0.667	0.230	0.455	0.074	0.033	79	132	213	292
ON	9	6	0.005	0.159	0.227	0.278	0.101	49	91	125	168
ON	9	8	0.667	0.332	0.133	0.113	0.058	54	103	146	198
ON	9	9	0.667	0.621	0.258	0.118	0.150	19	42	83	154
ON	9	10	0.293	0.224	0.332	0.000	0.243	23	31	42	105
ON	10	1	0.000	0.050	0.041	0.017	0.074	33	80	224	397
ON	10	8	0.000	0.050	0.041	0.017	0.074	33	80	224	397
ON	15	1	0.657	0.161	0.273	0.113	0.058	44	88	138	198
ON	15	2	0.513	0.168	0.115	0.071	0.069	24	55	96	169
ON	15	3	0.028	0.093	0.135	0.037	0.210	20	33	94	229
ON	15	4	0.003	0.006	0.037	0.007	0.016	110	177	224	281
ON	15	6	0.280	0.114	0.045	0.047	0.101	88	128	180	236
ON	15	7	0.304	0.257	0.108	0.076	0.000	108	150	196	339
ON	15	9	0.216	0.476	0.334	0.342	0.255	14	42	79	142
ON	15	10	0.667	0.667	0.156	0.131	0.142	7	43	83	109
ON	15	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
ON	15	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
PE	7	1	0.667	0.382	0.254	0.224	0.123	57	98	135	184
PE	7	2	0.092	0.077	0.067	0.058	0.055	40	86	141	225
PE	7	3	0.667	0.376	0.271	0.194	0.157	68	102	128	166
PE	7	4	0.667	0.355	0.398	0.268	0.057	127	149	188	268
PE	7	6	0.667	0.505	0.319	0.064	0.079	23	55	108	181
PE	7	7	0.667	0.213	0.498	0.304	0.179	72	127	166	206
PE	7	9	0.186	0.308	0.222	0.102	0.100	74	116	156	219
PE	7	10	0.373	0.152	0.258	0.101	0.101	75	107	130	158
PE	7	11	0.667	0.360	0.266	0.204	0.165	70	103	128	161
PE	7	12	0.635	0.193	0.371	0.173	0.172	54	90	118	160
QC	1	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85
QC	2	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85

jur	ecozone	genus	prop1	prop2	prop3	prop4	prop5	v1	v2	v3	v4
QC	3	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85
QC	5	1	0.057	0.118	0.120	0.041	0.060	19	36	57	85
QC	5	2	0.139	0.047	0.054	0.042	0.044	28	65	115	189
QC	5	3	0.164	0.084	0.064	0.062	0.056	43	83	117	164
QC	5	6	0.161	0.120	0.032	0.051	0.048	6	20	40	92
QC	5	8	0.057	0.118	0.120	0.041	0.060	19	36	57	85
QC	5	10	0.168	0.097	0.073	0.038	0.032	40	79	115	162
QC	5	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
QC	5	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196
QC	6	1	0.173	0.110	0.092	0.069	0.055	26	54	86	138
QC	6	2	0.139	0.047	0.054	0.042	0.044	28	65	115	189
QC	6	3	0.164	0.084	0.064	0.062	0.056	43	83	117	164
QC	6	4	0.003	0.006	0.037	0.007	0.016	110	177	224	281
QC	6	6	0.161	0.120	0.032	0.051	0.048	6	20	40	92
QC	6	7	0.260	0.100	0.067	0.064	0.035	78	127	170	222
QC	6	8	0.173	0.110	0.092	0.069	0.055	26	54	86	138
QC	6	9	0.085	0.055	0.048	0.041	0.031	54	104	146	206
QC	6	10	0.168	0.097	0.073	0.038	0.032	40	79	115	162
QC	6	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
QC	6	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
QC	6	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196
QC	7	1	0.153	0.151	0.075	0.048	0.032	26	66	103	158
QC	7	2	0.139	0.047	0.054	0.042	0.044	28	65	115	189
QC	7	3	0.086	0.082	0.046	0.052	0.050	48	90	125	170
QC	7	4	0.000	0.000	0.004	0.009	0.002	115	155	198	236
QC	7	6	0.000	0.363	0.000	0.000	0.010	15	51	89	121
QC	7	7	0.007	0.097	0.069	0.036	0.019	35	77	123	192
QC	7	8	0.153	0.151	0.075	0.048	0.032	26	66	103	158
QC	7	9	0.032	0.036	0.014	0.022	0.039	47	92	134	201
QC	7	10	0.383	0.050	0.052	0.035	0.010	24	56	90	137
QC	7	11	0.064	0.029	0.025	0.017	0.005	67	113	148	197
QC	7	12	0.061	0.043	0.025	0.035	0.005	9	29	72	143
QC	7	13	0.061	0.043	0.025	0.035	0.005	9	29	72	143
QC	8	1	0.079	0.019	0.082	0.013	0.051	84	114	158	210
QC	8	2	0.000	0.000	0.009	0.004	0.045	38	82	134	203
QC	8	3	0.056	0.023	0.007	0.082	0.033	37	75	112	157
QC	8	4	0.000	0.007	0.020	0.039	0.023	98	149	174	229
QC	8	6	0.000	0.462	0.046	0.099	0.040	20	47	76	114
QC	8	7	0.000	0.111	0.021	0.017	0.064	12	46	111	192
QC	8	8	0.079	0.019	0.082	0.013	0.051	84	114	158	210
QC	8	9	0.030	0.031	0.033	0.015	0.048	36	63	87	132
QC	8	10	0.069	0.024	0.000	0.000	0.025	26	48	76	142
QC	8	11	0.040	0.027	0.019	0.032	0.015	75	122	161	219
QC	8	12	0.028	0.040	0.040	0.012	0.006	77	111	143	194
QC	8	13	0.028	0.040	0.040	0.012	0.006	77	111	143	194
QC	15	1	0.131	0.056	0.305	0.090	0.040	8	21	48	111
QC	15	2	0.000	0.052	0.253	0.019	0.023	10	33	61	93
QC	15	3	0.164	0.084	0.064	0.062	0.056	43	83	117	164
QC	15	6	0.161	0.120	0.032	0.051	0.048	6	20	40	92
QC	15	8	0.131	0.056	0.305	0.090	0.040	8	21	48	111
QC	15	9	0.085	0.055	0.048	0.041	0.031	54	104	146	206
QC	15	10	0.168	0.097	0.073	0.038	0.032	40	79	115	162
QC	15	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
QC	15	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196
SK	5	1	0.667	0.112	0.320	0.126	0.066	40	81	127	187
SK	5	8	0.667	0.112	0.320	0.126	0.066	40	81	127	187
SK	6	1	0.667	0.112	0.320	0.126	0.066	40	81	127	187
SK	6	2	0.559	0.155	0.105	0.071	0.071	23	53	92	160
SK	6	3	0.028	0.093	0.135	0.037	0.210	20	33	94	229
SK	6	6	0.316	0.143	0.044	0.046	0.098	87	124	174	232
SK	6	8	0.667	0.112	0.320	0.126	0.066	40	81	127	187
SK	6	9	0.216	0.527	0.330	0.314	0.286	14	39	74	132
SK	6	10	0.667	0.171	0.181	0.135	0.188	13	41	78	123
SK	6	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
SK	6	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
SK	9	1	0.083	0.118	0.105	0.078	0.068	196	290	339	405
SK	9	2	0.019	0.018	0.042	0.072	0.060	88	136	181	239
SK	9	3	0.028	0.093	0.135	0.037	0.210	20	33	94	229
SK	9	6	0.316	0.143	0.044	0.046	0.098	87	124	174	232
SK	9	8	0.083	0.118	0.105	0.078	0.068	196	290	339	405
SK	9	9	0.154	0.113	0.102	0.081	0.088	239	291	330	385
SK	9	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
SK	9	11	0.074	0.061	0.044	0.027	0.021	82	128	164	211
SK	9	12	0.107	0.120	0.049	0.028	0.019	45	99	147	196
SK	9	13	0.107	0.120	0.049	0.028	0.019	45	99	147	196

jur	ecozone	genus	prop1	prop2	prop3	prop4	prop5	v1	v2	v3	v4
SK	10	1	0.083	0.118	0.105	0.078	0.068	196	290	339	405
SK	10	2	0.019	0.018	0.042	0.072	0.060	88	136	181	239
SK	10	9	0.154	0.113	0.102	0.081	0.088	239	291	330	385
SK	10	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
SK	10	13	0.137	0.105	0.272	0.254	0.053	48	127	200	212
YK	3	1	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	3	8	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	4	1	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	4	2	0.000	0.002	0.002	0.000	0.000	25	48	72	132
YK	4	3	0.667	0.334	0.203	0.236	0.214	167	206	233	278
YK	4	6	0.248	0.118	0.086	0.088	0.030	11	23	44	81
YK	4	9	0.168	0.150	0.147	0.133	0.130	179	260	316	387
YK	4	10	0.137	0.105	0.272	0.254	0.053	48	127	200	212
YK	11	1	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	11	2	0.000	0.002	0.002	0.000	0.000	25	48	72	132
YK	11	3	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	11	6	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	11	8	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	11	9	0.000	0.000	0.000	0.000	0.000	13	34	64	127
YK	11	13	0.000	0.000	0.000	0.000	0.000	13	34	64	127
YK	12	1	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	12	2	0.000	0.002	0.002	0.000	0.000	25	48	72	132
YK	12	3	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	12	6	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	12	8	0.004	0.002	0.000	0.000	0.000	29	60	100	176
YK	12	9	0.000	0.000	0.000	0.000	0.000	13	34	64	127
YK	12	10	0.000	0.000	0.000	0.000	0.000	13	34	64	127
YK	12	13	0.000	0.000	0.000	0.000	0.000	13	34	64	127

Table 4. Stem wood biomass model parameters for nonmerchantable-sized trees by jurisdiction, ecozone and lead species

$nonmerchfactor = k + a \times b\_m^b$

jur = jurisdiction

volm = highest recorded volume in plots used to develop model (m^3/ha)

count = number of unique plots used to develop model

cap = upper cap on nonmerchfactor

model = model was developed or substituted from another province/ecozone/species/genus(G)/forest type(F)

rmse = root mean square error

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
BC	4	100			46.02082	-1.09137	0.86379	6.562	S(4-105)	
BC	4	101			26.7407	-0.92364	1.16872	6.635	S(9-101)	
BC	4	104			46.02082	-1.09137	0.86379	6.562	S(4-105)	
BC	4	105	550	13	46.02082	-1.09137	0.86379	6.562	Developed	0.0675
BC	4	204	330	9	100	-1.05274	0.53603	2.936	Developed	0.0824
BC	4	206			100	-1.05274	0.53603	2.936	S(4-204)	
BC	4	208			2.68001	-0.19417	0	1.714	S(14-208)	
BC	4	300			14.17778	-0.8311	0.84532	3.757	S(14-304)	
BC	4	301			30.09378	-0.76376	0.68648	10.832	S(13-301)	
BC	4	304			14.17778	-0.8311	0.84532	3.757	S(14-304)	
BC	4	400			10.06273	-0.40439	0	4.518	S(14-402)	
BC	4	402			10.06273	-0.40439	0	4.518	S(14-402)	
BC	4	403			10.06273	-0.40439	0	4.518	S(14-402)	
BC	4	500			55.22243	-1.05248	0.86758	5.212	S(14-500)	
BC	4	600			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	4	602			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	4	603			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	4	604			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	4	702			10.15522	-0.55292	0.55319	4.702	S(14-702)	
BC	4	1201	510	21	25.70852	-0.72228	0.38555	6.017	Developed	0.1653
BC	4	1203	630	13	100	-1.2048	0.8455	4.241	Developed	0.1692
BC	4	1303	270	8	49.1645	-0.92401	0.47062	7.245	Developed	0.0792
BC	4	1305			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	4	1308			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	4	1403			0.78814	-0.00607	0.24786	1.009	S(13-1403)	
BC	4	1802			60.05647	-1.13867	0.9387	11.963	S(13-1802)	
BC	9	100			5.31717	-0.31625	0	1.692	S(9-105)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
BC	9	101	370	8	26.7407	-0.92364	1.16872	6.635	Developed	0.4305
BC	9	104			5.31717	-0.31625	0	1.692	S(9-105)	
BC	9	105	390	7	5.31717	-0.31625	0	1.692	Developed	0.0931
BC	9	106			16.30091	-0.78697	0.90166	5.923	S(13-106)	
BC	9	204	350	16	20.94688	-0.91535	0.90123	14.910	Developed	0.2586
BC	9	206			20.94688	-0.91535	0.90123	14.910	S(9-204)	
BC	9	208			2.68001	-0.19417	0	1.714	S(14-208)	
BC	9	300			14.17778	-0.8311	0.84532	3.757	S(14-304)	
BC	9	301			30.09378	-0.76376	0.68648	10.832	S(13-301)	
BC	9	304			14.17778	-0.8311	0.84532	3.757	S(14-304)	
BC	9	400			10.06273	-0.40439	0	4.518	S(14-402)	
BC	9	402			10.06273	-0.40439	0	4.518	S(14-402)	
BC	9	403			10.06273	-0.40439	0	4.518	S(14-402)	
BC	9	500			55.22243	-1.05248	0.86758	5.212	S(14-500)	
BC	9	600			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	9	602			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	9	603			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	9	604			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	9	702			10.15522	-0.55292	0.55319	4.702	S(14-702)	
BC	9	1201	430	19	26.52754	-0.80597	0.57463	6.701	Developed	0.1717
BC	9	1203			9.73904	-0.614	0.66487	5.258	S(14-1203)	
BC	9	1303			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	9	1305			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	9	1308			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	9	1403			0.78814	-0.00607	0.24786	1.009	S(13-1403)	
BC	9	1802			60.05647	-1.13867	0.9387	11.963	S(13-1802)	
BC	12	100			28.91781	-0.7054	0	5.249	S(12-105)	
BC	12	101			46.83595	-1.82962	1.82208	4.203	S(14-101)	
BC	12	104			28.91781	-0.7054	0	5.249	S(12-105)	
BC	12	105	410	9	28.91781	-0.7054	0	5.249	Developed	0.2924
BC	12	106			16.30091	-0.78697	0.90166	5.923	S(9-106)	
BC	12	201			48.70297	-1.00804	0.7306	2.864	S(14-201)	
BC	12	204	370	14	20.02171	-0.75078	0.5642	4.095	Developed	0.3474
BC	12	206			20.02171	-0.75078	0.5642	4.095	S(12-204)	
BC	12	208			2.68001	-0.19417	0	1.714	S(14-208)	
BC	12	300			14.17778	-0.8311	0.84532	3.757	S(14-304)	
BC	12	301			30.09378	-0.76376	0.68648	10.832	S(9-301)	
BC	12	303			41.41805	-1.32525	1.00575	3.933	S(13-303)	
BC	12	304			14.17778	-0.8311	0.84532	3.757	S(14-304)	
BC	12	400			32.6985	-0.81762	0.8007	9.932	S(13-402)	
BC	12	402			32.6985	-0.81762	0.8007	9.932	S(13-402)	
BC	12	403			32.6985	-0.81762	0.8007	9.932	S(13-402)	
BC	12	500			37.32514	-0.94491	0.91272	6.398	S(9-500)	
BC	12	600			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	12	602			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	12	603			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	12	604			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	12	702			47.76776	-0.86093	0.67924	16.028	S(9-702)	
BC	12	1001			17.5788	-0.95981	0.97378	5.016	S(9-1001)	
BC	12	1201			25.70852	-0.72228	0.38555	6.017	S(4-1203)	
BC	12	1203			100	-1.2048	0.8455	4.241	S(4-1203)	
BC	12	1303			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	12	1305			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	12	1308			49.1645	-0.92401	0.47062	7.245	S(4-1303)	
BC	12	1403			0.78814	-0.00607	0.24786	1.009	S(13-1403)	
BC	12	1802			60.05647	-1.13867	0.9387	11.963	S(13-1802)	
BC	13	100			16.30091	-0.78697	0.90166	5.923	S(13-106)	
BC	13	101			46.83595	-1.82962	1.82208	4.203	S(14-101)	
BC	13	104			16.30091	-0.78697	0.90166	5.923	S(13-106)	
BC	13	105			16.30091	-0.78697	0.90166	5.923	S(13-106)	
BC	13	106	2370	104	16.30091	-0.78697	0.90166	5.923	Developed	0.0695
BC	13	201			48.70297	-1.00804	0.7306	2.864	S(14-201)	
BC	13	204	670	24	28.96521	-0.61908	0.16504	11.375	Developed	0.4094
BC	13	205			28.96521	-0.61908	0.16504	11.375	S(13-204)	
BC	13	206			28.96521	-0.61908	0.16504	11.375	S(13-204)	
BC	13	208			2.68001	-0.19417	0	1.714	S(14-208)	
BC	13	300			30.09378	-0.76376	0.68648	10.832	S(13-301)	
BC	13	301	1490	71	30.09378	-0.76376	0.68648	10.832	Developed	0.0841
BC	13	303	1550	22	41.41805	-1.32525	1.00575	3.933	Developed	0.0287
BC	13	304	230	7	21.60028	-1.06466	0.94839	6.085	Developed	0.0898
BC	13	400			32.6985	-0.81762	0.8007	9.932	S(13-402)	
BC	13	402	3210	96	32.6985	-0.81762	0.8007	9.932	Developed	0.0562
BC	13	403			32.6985	-0.81762	0.8007	9.932	S(13-402)	
BC	13	500	2910	96	37.32514	-0.94491	0.91272	6.398	Developed	0.0453
BC	13	600			22.17143	-0.72861	0.64195	4.330	S(14-603)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
BC	13	602			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	13	603			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	13	604			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	13	702	1750	62	47.76776	-0.86093	0.67924	16.028	Developed	0.1909
BC	13	1001	1210	6	17.5788	-0.95981	0.97378	5.016	Developed	0.0011
BC	13	1201	170	6	17.929	-0.53862	0	2.228	Developed	0.2628
BC	13	1203	830	25	22.01947	-0.81228	0.75609	13.874	Developed	0.1931
BC	13	1303	430	5	77.09252	-0.87353	0.3796	4.071	Developed	0.1552
BC	13	1305			77.09252	-0.87353	0.3796	4.071	S(13-1303)	
BC	13	1308			77.09252	-0.87353	0.3796	4.071	S(13-1303)	
BC	13	1403	1130	4	0.78814	-0.00607	0.24786	1.009	Developed	0.0015
BC	13	1802	990	41	60.05647	-1.13867	0.9387	11.963	Developed	0.0772
BC	14	100			13.38988	-0.84768	0.88557	3.079	S(14-105)	
BC	14	101	130	4	46.83595	-1.82962	1.82208	4.203	Developed	0.0703
BC	14	104	970	41	4.43631	-0.44481	0.62319	2.998	Developed	0.0841
BC	14	105	750	36	13.38988	-0.84768	0.88557	3.079	Developed	0.0938
BC	14	106			16.30091	-0.78697	0.90166	5.923	S(13-106)	
BC	14	201	170	4	48.70297	-1.00804	0.7306	2.864	Developed	0.1424
BC	14	204	790	39	18.79727	-0.86026	0.85829	3.696	Developed	0.0468
BC	14	206			18.79727	-0.86026	0.85829	3.696	S(14-204)	
BC	14	208	610	20	2.68001	-0.19417	0	1.714	Developed	0.1918
BC	14	300			14.17778	-0.8311	0.84532	3.757	S(14-304)	
BC	14	301			30.09378	-0.76376	0.68648	10.832	S(13-301)	
BC	14	303			41.41805	-1.32525	1.00575	3.933	S(13-303)	
BC	14	304	870	31	14.17778	-0.8311	0.84532	3.757	Developed	0.0781
BC	14	400			10.06273	-0.40439	0	4.518	S(14-402)	
BC	14	402	1050	40	10.06273	-0.40439	0	4.518	Developed	0.2288
BC	14	403			10.06273	-0.40439	0	4.518	S(14-402)	
BC	14	500	870	42	55.22243	-1.05248	0.86758	5.212	Developed	0.0571
BC	14	600			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	14	602			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	14	603	690	31	22.17143	-0.72861	0.64195	4.330	Developed	0.1684
BC	14	604			22.17143	-0.72861	0.64195	4.330	S(14-603)	
BC	14	702	870	39	10.15522	-0.55292	0.55319	4.702	Developed	0.0797
BC	14	1001			17.5788	-0.95981	0.97378	5.016	S(13-1001)	
BC	14	1201	450	22	20.55478	-0.82397	0.74857	4.069	Developed	0.0627
BC	14	1203	470	4	9.73904	-0.614	0.66487	5.258	Developed	0.0377
BC	14	1303	450	21	11.29732	-0.51535	0.25426	4.992	Developed	0.1622
BC	14	1305			11.29732	-0.51535	0.25426	4.992	S(14-1303)	
BC	14	1308			11.29732	-0.51535	0.25426	4.992	S(14-1303)	
BC	14	1403			0.78814	-0.00607	0.24786	1.009	S(13-1403)	
BC	14	1802			60.05647	-1.13867	0.9387	11.963	S(13-1802)	
BC	14	3500	210	5	3.83806	-0.23654	0	2.969	Developed	0.2653
AB	4	101			10.40668	-0.45672	0	5.098	S(9-101)	
AB	4	105	510	20	100	-1.36729	0.89492	1.673	Developed	0.0399
AB	4	203			100	-1.50378	0.93718	1.159	S(4-204)	
AB	4	204	330	11	100	-1.50378	0.93718	1.159	Developed	0.0178
AB	4	216			100	-1.44649	0.9062	1.354	S(4-G2)	
AB	4	302			1.35033	-0.0573	0	1.287	S(9-302)	
AB	4	500			100	-1.17643	0.78738	1.415	S(14-500)	
AB	4	601			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	4	602			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	4	1200			19.96441	-0.93331	0.80583	2.661	S(4-1201)	
AB	4	1201	450	19	19.96441	-0.93331	0.80583	2.661	Developed	0.062
AB	4	1203			1.55347	-0.08847	0	1.438	S(9-1203)	
AB	4	1303			25.07966	-0.78065	0.26171	2.929	S(9-1303)	
AB	5	101			10.40668	-0.45672	0	5.098	S(9-101)	
AB	5	105			1.28332	-0.04223	0	1.226	S(9-105)	
AB	5	203			17.48375	-1.1662	0.95782	4.518	S(9-203)	
AB	5	204			22.25858	-0.79598	0.65006	7.633	S(9-204)	
AB	5	216			21.42318	-0.82482	0.71896	7.227	S(9-G2)	
AB	5	302			1.35033	-0.0573	0	1.287	S(9-302)	
AB	5	500			100	-1.17643	0.78738	1.415	S(14-500)	
AB	5	601			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	5	602			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	5	1200			9.90809	-0.64128	0.61987	4.640	S(9-1201)	
AB	5	1201			9.90809	-0.64128	0.61987	4.640	S(9-1201)	
AB	5	1203			1.55347	-0.08847	0	1.438	S(9-1203)	
AB	5	1303			25.07966	-0.78065	0.26171	2.929	S(9-1303)	
AB	6	101			10.40668	-0.45672	0	5.098	S(9-101)	
AB	6	105			1.28332	-0.04223	0	1.226	S(9-105)	
AB	6	203			17.48375	-1.1662	0.95782	4.518	S(9-203)	
AB	6	204			22.25858	-0.79598	0.65006	7.633	S(9-204)	
AB	6	216			21.42318	-0.82482	0.71896	7.227	S(9-G2)	
AB	6	302			1.35033	-0.0573	0	1.287	S(9-302)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
AB	6	500			100	-1.17643	0.78738	1.415	S(14-500)	
AB	6	601			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	6	602			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	6	1200			9.90809	-0.64128	0.61987	4.640	S(9-1201)	
AB	6	1201			9.90809	-0.64128	0.61987	4.640	S(9-1201)	
AB	6	1203			1.55347	-0.08847	0	1.438	S(9-1203)	
AB	6	1303			25.07966	-0.78065	0.26171	2.929	S(9-1303)	
AB	9	101	390	20	10.40668	-0.45672	0	5.098	Developed	0.0804
AB	9	104			1.28332	-0.04223	0	1.226	S(9-105)	
AB	9	105	650	32	1.28332	-0.04223	0	1.226	Developed	0.0492
AB	9	109			1.28332	-0.04223	0	1.226	S(9-105)	
AB	9	203	230	12	17.48375	-1.1662	0.95782	4.518	Developed	0.0351
AB	9	204	630	31	22.25858	-0.79598	0.65006	7.633	Developed	0.0696
AB	9	216			21.42318	-0.82482	0.71896	7.227	S(9-G2)	
AB	9	302	430	19	1.35033	-0.0573	0	1.287	Developed	0.0755
AB	9	304			1.35033	-0.0573	0	1.287	S(9-302)	
AB	9	305			1.35033	-0.0573	0	1.287	S(9-302)	
AB	9	306			1.35033	-0.0573	0	1.287	S(9-302)	
AB	9	500			100	-1.17643	0.78738	1.415	S(14-500)	
AB	9	600			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	9	601			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	9	602	170	7	2.47087	-0.50127	0.89816	2.025	Developed	0.0467
AB	9	604			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	9	1150			13.94938	-0.69433	0.62942	5.536	S(9-F1)	
AB	9	1200			9.90809	-0.64128	0.61987	4.640	S(9-1201)	
AB	9	1201	810	30	9.90809	-0.64128	0.61987	4.640	Developed	0.1132
AB	9	1203	450	22	1.55347	-0.08847	0	1.438	Developed	0.0857
AB	9	1303	210	6	25.07966	-0.78065	0.26171	2.929	Developed	0.1294
AB	9	1404			25.07966	-0.78065	0.26171	2.929	S(9-G10)	
AB	9	1500			25.07966	-0.78065	0.26171	2.929	S(9-G10)	
AB	9	1550			25.07966	-0.78065	0.26171	2.929	S(9-G10)	
AB	10	101			10.40668	-0.45672	0	5.098	S(9-101)	
AB	10	104			1.28332	-0.04223	0	1.226	S(9-105)	
AB	10	105			1.28332	-0.04223	0	1.226	S(9-105)	
AB	10	203			17.48375	-1.1662	0.95782	4.518	S(9-203)	
AB	10	204			22.25858	-0.79598	0.65006	7.633	S(9-204)	
AB	10	216			21.42318	-0.82482	0.71896	7.227	S(9-G2)	
AB	10	302			1.35033	-0.0573	0	1.287	S(9-302)	
AB	10	304			1.35033	-0.0573	0	1.287	S(9-302)	
AB	10	500			100	-1.17643	0.78738	1.415	S(14-500)	
AB	10	602			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	10	604			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	10	1150			13.94938	-0.69433	0.62942	5.536	S(9-F1)	
AB	10	1200			9.90809	-0.64128	0.61987	4.640	S(9-1201)	
AB	10	1201			9.90809	-0.64128	0.61987	4.640	S(9-1201)	
AB	10	1203			1.55347	-0.08847	0	1.438	S(9-1203)	
AB	10	1303			25.07966	-0.78065	0.26171	2.929	S(9-1303)	
AB	10	1550			25.07966	-0.78065	0.26171	2.929	S(9-G10)	
AB	14	101			10.40668	-0.45672	0	5.098	S(9-101)	
AB	14	104	590	16	48.99808	-1.24998	0.93085	1.390	Developed	0.0182
AB	14	105			48.99808	-1.24998	0.93085	1.390	S(14-104)	
AB	14	109			48.99808	-1.24998	0.93085	1.390	S(14-104)	
AB	14	201			48.70297	-1.00804	0.7306	2.864	S(BC-14-201)	
AB	14	203			13.86142	-0.59118	0.27474	6.130	S(14-204)	
AB	14	204	370	18	13.86142	-0.59118	0.27474	6.130	Developed	0.1327
AB	14	216			13.86142	-0.59118	0.27474	6.130	S(14-G2)	
AB	14	217			13.86142	-0.59118	0.27474	6.130	S(14-G2)	
AB	14	302			1.35033	-0.0573	0	1.287	S(9-302)	
AB	14	304			1.35033	-0.0573	0	1.287	S(9-302)	
AB	14	306			1.35033	-0.0573	0	1.287	S(9-302)	
AB	14	402			10.06273	-0.40439	0	4.518	S(BC-14-402)	
AB	14	500	470	11	100	-1.17643	0.78738	1.415	Developed	0.0698
AB	14	602			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	14	604			2.47087	-0.50127	0.89816	2.025	S(9-602)	
AB	14	702			10.15522	-0.55292	0.55319	4.702	S(BC-14-702)	
AB	14	1150			14.24586	-0.62496	0.41466	6.144	S(14-F1)	
AB	14	1200			40.43449	-1.06379	0.6506	4.850	S(14-1201)	
AB	14	1201	350	11	40.43449	-1.06379	0.6506	4.850	Developed	0.3011
AB	14	1203			1.55347	-0.08847	0	1.438	S(9-1203)	
AB	14	1303			25.07966	-0.78065	0.26171	2.929	S(9-1303)	
AB	14	1404			25.07966	-0.78065	0.26171	2.929	S(9-G10)	
AB	14	1550			25.07966	-0.78065	0.26171	2.929	S(9-G10)	
MB	3	101			22.44502	-1.04479	0.89465	6.595	S(6-101)	
MB	3	105			4.35246	-0.88483	0.94593	3.760	S(6-105)	
MB	3	203			25.56227	-1.19477	0.91577	7.048	S(6-203)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
MB	3	602			6.30082	-0.86233	0.9576	4.670	S(6-602)	
MB	3	1201			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	3	1203			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	3	1308			4.14352	-0.33058	0	2.435	S(9-1303)	
MB	5	101			22.44502	-1.04479	0.89465	6.595	S(6-101)	
MB	5	105			4.35246	-0.88483	0.94593	3.760	S(6-105)	
MB	5	203			25.56227	-1.19477	0.91577	7.048	S(6-203)	
MB	5	302			50.08769	-1.4757	0.97733	3.642	S(6-302)	
MB	5	602			6.30082	-0.86233	0.9576	4.670	S(6-602)	
MB	5	1201			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	5	1203			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	5	1308			4.14352	-0.33058	0	2.435	S(9-1303)	
MB	6	101	290	15	22.44502	-1.04479	0.89465	6.595	Developed	0.1004
MB	6	105	210	10	4.35246	-0.88483	0.94593	3.760	Developed	0.0463
MB	6	203	350	17	25.56227	-1.19477	0.91577	7.048	Developed	0.0522
MB	6	209	330	16	4.62873	-1.25078	0.98485	1.717	Developed	0.0192
MB	6	211	190	6	100	-2.37618	0.99824	1.075	Developed	0.0045
MB	6	302	350	12	50.08769	-1.4757	0.97733	3.642	Developed	0.151
MB	6	602	330	15	6.30082	-0.86233	0.9576	4.670	Developed	0.0976
MB	6	701	490	12	1.53277	-0.08744	0	1.140	Developed	0.0756
MB	6	1201	270	13	30.01994	-1.29268	0.96759	8.253	Developed	0.0952
MB	6	1203			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	6	1205			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	6	1308			4.14352	-0.33058	0	2.435	S(9-1303)	
MB	6	1404			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
MB	6	1500			23.09543	-1.24338	0.97843	2.059	S(QC-6-12)	
MB	6	2104			2.64149	-0.48517	0.78568	1.584	S(QC-6-2108)	
MB	6	2201			79.34118	-1.77218	1.06325	3.822	S(QC-6-2201)	
MB	6	3400			11.20539	-1.03138	0.95098	2.646	S(QC-6-3402)	
MB	9	101	290	15	14.28144	-0.88034	0.78835	5.599	Developed	0.1497
MB	9	105	470	20	1.17265	-0.5913	0.94111	1.658	Developed	0.0724
MB	9	203	250	12	14.58352	-1.25616	0.9591	4.707	Developed	0.0337
MB	9	209			4.62873	-1.25078	0.98485	1.717	S(6-209)	
MB	9	302			50.08769	-1.4757	0.97733	3.642	S(6-302)	
MB	9	602			6.30082	-0.86233	0.9576	4.670	S(6-602)	
MB	9	701			1.53277	-0.08744	0	1.140	S(6-701)	
MB	9	1201	330	15	33.66166	-1.8728	1.09091	2.503	Developed	0.0975
MB	9	1203			33.66166	-1.8728	1.09091	2.503	S(9-1201)	
MB	9	1205			33.66166	-1.8728	1.09091	2.503	S(9-1201)	
MB	9	1303	150	8	4.14352	-0.33058	0	2.435	Developed	0.0942
MB	9	1308			4.14352	-0.33058	0	2.435	S(9-1303)	
MB	9	1404			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
MB	9	1500			23.09543	-1.24338	0.97843	2.059	S(QC-6-12)	
MB	9	2104			2.64149	-0.48517	0.78568	1.584	S(QC-6-2108)	
MB	9	2201			79.34118	-1.77218	1.06325	3.822	S(QC-6-2201)	
MB	9	3000			8.97534	-1.16548	1.00573	2.337	S(QC-6-3000)	
MB	9	3400			11.20539	-1.03138	0.95098	2.646	S(QC-6-3402)	
MB	9	3500			23.09543	-1.24338	0.97843	2.059	S(QC-6-G12)	
MB	10	101			22.44502	-1.04479	0.89465	6.595	S(6-101)	
MB	10	105			1.17265	-0.5913	0.94111	1.658	S(9-105)	
MB	10	203			14.58352	-1.25616	0.9591	4.707	S(9-203)	
MB	10	209			4.62873	-1.25078	0.98485	1.717	S(6-209)	
MB	10	302			50.08769	-1.4757	0.97733	3.642	S(6-302)	
MB	10	602			6.30082	-0.86233	0.9576	4.670	S(6-602)	
MB	10	701			1.53277	-0.08744	0	1.140	S(6-701)	
MB	10	1201			33.66166	-1.8728	1.09091	2.503	S(9-1201)	
MB	10	1203			33.66166	-1.8728	1.09091	2.503	S(9-1201)	
MB	10	1205			33.66166	-1.8728	1.09091	2.503	S(9-1201)	
MB	10	1308			4.14352	-0.33058	0	2.435	S(9-1303)	
MB	10	1404			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
MB	10	1500			23.09543	-1.24338	0.97843	2.059	S(QC-6-G12)	
MB	10	2104			2.64149	-0.48517	0.78568	1.584	S(QC-6-2108)	
MB	10	2201			79.34118	-1.77218	1.06325	3.822	S(QC-6-2201)	
MB	10	3000			8.97534	-1.16548	1.00573	2.337	S(QC-6-3000)	
MB	10	3400			11.20539	-1.03138	0.95098	2.646	S(QC-6-3402)	
MB	10	3500			23.09543	-1.24338	0.97843	2.059	S(QC-6-G12)	
MB	15	101			22.44502	-1.04479	0.89465	6.595	S(6-101)	
MB	15	103			4.35246	-0.88483	0.94593	3.760	S(6-105)	
MB	15	105			4.35246	-0.88483	0.94593	3.760	S(6-105)	
MB	15	203			25.56227	-1.19477	0.91577	7.048	S(6-203)	
MB	15	302			50.08769	-1.4757	0.97733	3.642	S(6-302)	
MB	15	602			6.30082	-0.86233	0.9576	4.670	S(6-602)	
MB	15	1201			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	15	1203			30.01994	-1.29268	0.96759	8.253	S(6-1201)	
MB	15	1308			4.14352	-0.33058	0	2.435	S(9-1303)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
ON	6	101	370	18	7.51261	-0.90545	0.92269	2.744	Developed	0.0132
ON	6	105	710	12	5.78921	-0.77447	0.87183	2.391	Developed	0.1688
ON	6	202	730	19	8.14131	-1.14321	0.99203	1.157	Developed	0.0158
ON	6	203	390	20	13.58894	-1.05909	0.92296	3.261	Developed	0.0287
ON	6	209	670	15	2.48159	-0.50364	0.80179	2.149	Developed	0.0508
ON	6	302	490	14	3.66629	-0.70031	0.9199	3.905	Developed	0.0466
ON	6	401			3.72682	-0.64352	0.87049	2.099	S(QC-6-401)	
ON	6	602			11.59906	-1.108	1.00027	2.349	S(QC-6-602)	
ON	6	701	550	8	2.00495	-0.13524	0	2.134	Developed	0.0423
ON	6	1200			19.12969	-1.19575	0.96388	4.417	S(6-1201)	
ON	6	1201	730	29	19.12969	-1.19575	0.96388	4.417	Developed	0.0448
ON	6	1203	910	10	0.59987	-0.84232	0.99718	1.015	Developed	0.0056
ON	6	1303	450	16	3.87664	-0.63159	0.8238	2.747	Developed	0.0444
ON	6	1400			12.64978	-0.98129	0.92714	2.787	S(QC-6-1401)	
ON	6	1401			12.64978	-0.98129	0.92714	2.787	S(QC-6-1401)	
ON	6	4500			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
ON	6	5500			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
ON	8	101			7.51261	-0.90545	0.92269	2.744	S(6-101)	
ON	8	105			5.78921	-0.77447	0.87183	2.391	S(6-105)	
ON	8	202			8.14131	-1.14321	0.99203	1.157	S(6-202)	
ON	8	203			13.58894	-1.05909	0.92296	3.261	S(6-203)	
ON	8	209			2.48159	-0.50364	0.80179	2.149	S(6-209)	
ON	8	302			3.66629	-0.70031	0.9199	3.905	S(6-302)	
ON	8	401			4.41187	-0.30879	0	3.290	S(QC-8-401)	
ON	8	602			21.59003	-1.31316	1.01414	3.127	S(QC-8-602)	
ON	8	701			2.00495	-0.13524	0	2.134	S(6-701)	
ON	8	1200			17.75801	-1.07948	0.94762	3.469	S(QC-8-1201)	
ON	8	1303			3.87664	-0.63159	0.8238	2.747	S(6-1303)	
ON	8	1401			100	-1.75952	1.00996	3.224	S(QC-8-1401)	
ON	8	4500			16.29484	-1.11531	0.96458	2.528	S(QC-8-G11)	
ON	8	5500			16.29484	-1.11531	0.96458	2.528	S(QC-8-G11)	
ON	15	101			7.51261	-0.90545	0.92269	2.744	S(6-101)	
ON	15	105			5.78921	-0.77447	0.87183	2.391	S(6-105)	
ON	15	202			8.14131	-1.14321	0.99203	1.157	S(6-202)	
ON	15	203			13.58894	-1.05909	0.92296	3.261	S(6-203)	
ON	15	209			2.48159	-0.50364	0.80179	2.149	S(6-209)	
ON	15	302			3.66629	-0.70031	0.9199	3.905	S(6-302)	
ON	15	602			11.59906	-1.108	1.00027	2.349	S(QC-6-602)	
ON	15	701			2.00495	-0.13524	0	2.134	S(6-701)	
ON	15	1200			19.12969	-1.19575	0.96388	4.417	S(6-1201)	
ON	15	1303			3.87664	-0.63159	0.8238	2.747	S(6-1303)	
ON	15	1400			12.64978	-0.98129	0.92714	2.787	S(QC-6-1401)	
ON	15	4500			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
ON	15	5500			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
QC	1	101			8.99246	-1.21901	1.0667	2.352	S(5-101)	
QC	1	105			10.39531	-1.06237	0.95677	2.674	S(6-105)	
QC	1	107			8.99246	-1.21901	1.0667	2.352	S(5-101)	
QC	1	302			11.57012	-0.92928	0.87474	2.695	S(6-302)	
QC	1	602			11.59906	-1.108	1.00027	2.349	S(6-602)	
QC	1	1201			12.91952	-1.06418	0.95711	2.556	S(6-1201)	
QC	1	1203			5.72642	-0.80223	0.91475	2.675	S(6-1203)	
QC	1	1303			10.25417	-0.98816	0.93635	2.231	S(6-1303)	
QC	2	101			8.99246	-1.21901	1.0667	2.352	S(5-101)	
QC	2	105			10.39531	-1.06237	0.95677	2.674	S(6-105)	
QC	2	107			8.99246	-1.21901	1.0667	2.352	S(5-101)	
QC	2	302			11.57012	-0.92928	0.87474	2.695	S(6-302)	
QC	2	602			11.59906	-1.108	1.00027	2.349	S(6-602)	
QC	2	1201			12.91952	-1.06418	0.95711	2.556	S(6-1201)	
QC	2	1203			5.72642	-0.80223	0.91475	2.675	S(6-1203)	
QC	2	1303			10.25417	-0.98816	0.93635	2.231	S(6-1303)	
QC	3	101			8.99246	-1.21901	1.0667	2.352	S(5-101)	
QC	3	105			10.39531	-1.06237	0.95677	2.674	S(6-105)	
QC	3	107			8.99246	-1.21901	1.0667	2.352	S(5-101)	
QC	3	302			11.57012	-0.92928	0.87474	2.695	S(6-302)	
QC	3	602			11.59906	-1.108	1.00027	2.349	S(6-602)	
QC	3	1201			12.91952	-1.06418	0.95711	2.556	S(6-1201)	
QC	3	1203			5.72642	-0.80223	0.91475	2.675	S(6-1203)	
QC	3	1303			10.25417	-0.98816	0.93635	2.231	S(6-1303)	
QC	5	101	150	8	8.99246	-1.21901	1.0667	2.352	Developed	0.0427
QC	5	105			10.39531	-1.06237	0.95677	2.674	S(6-105)	
QC	5	107			8.99246	-1.21901	1.0667	2.352	S(5-101)	
QC	5	202			4.76288	-0.79539	0.93756	1.987	S(6-202)	
QC	5	203			8.59496	-0.98844	0.9525	2.053	S(6-203)	
QC	5	209			5.38329	-0.89559	0.96393	1.773	S(6-209)	
QC	5	302			11.57012	-0.92928	0.87474	2.695	S(6-302)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
QC	5	401			3.72682	-0.64352	0.87049	2.099	S(6-401)	
QC	5	602			11.59906	-1.108	1.00027	2.349	S(6-602)	
QC	5	701			2.73419	-0.44256	0.68656	1.938	S(6-701)	
QC	5	1201			12.91952	-1.06418	0.95711	2.556	S(6-1201)	
QC	5	1203			5.72642	-0.80223	0.91475	2.675	S(6-1203)	
QC	5	1211			12.66183	-1.05787	0.95865	2.557	S(6-G9)	
QC	5	1301			15.35825	-1.18031	0.97261	2.097	S(6-1301)	
QC	5	1303			10.25417	-0.98816	0.93635	2.231	S(6-1303)	
QC	5	1401			12.64978	-0.98129	0.92714	2.787	S(6-1401)	
QC	5	1405			5.99252	-0.83192	0.91955	1.939	S(6-1405)	
QC	5	1550			23.09543	-1.24338	0.97843	2.059	S(6-G12)	
QC	6	101	450	22	11.30727	-1.02861	0.93716	2.299	Developed	0.0128
QC	6	102	370	19	3.88349	-0.58274	0.77715	3.137	Developed	0.0191
QC	6	103			3.88349	-0.58274	0.77715	3.137	S(6-102)	
QC	6	105	370	19	10.39531	-1.06237	0.95677	2.674	Developed	0.014
QC	6	107			3.88349	-0.58274	0.77715	3.137	S(6-102)	
QC	6	202	830	32	4.76288	-0.79539	0.93756	1.987	Developed	0.0225
QC	6	203	390	20	8.59496	-0.98844	0.9525	2.053	Developed	0.0173
QC	6	209	510	23	5.38329	-0.89559	0.96393	1.773	Developed	0.0255
QC	6	211			5.38329	-0.89559	0.96393	1.773	S(6-209)	
QC	6	302	410	20	11.57012	-0.92928	0.87474	2.695	Developed	0.0189
QC	6	401	570	27	3.72682	-0.64352	0.87049	2.099	Developed	0.0271
QC	6	602	270	14	11.59906	-1.108	1.00027	2.349	Developed	0.0296
QC	6	701	490	24	2.73419	-0.44256	0.68656	1.938	Developed	0.0419
QC	6	1201	570	28	12.91952	-1.06418	0.95711	2.556	Developed	0.0137
QC	6	1203	510	21	5.72642	-0.80223	0.91475	2.675	Developed	0.0462
QC	6	1205			5.72642	-0.80223	0.91475	2.675	S(6-1203)	
QC	6	1206	550	25	29.48878	-1.25499	0.96669	2.450	Developed	0.0264
QC	6	1211			12.66183	-1.05787	0.95865	2.557	S(6-G9)	
QC	6	1301	430	22	15.35825	-1.18031	0.97261	2.097	Developed	0.0112
QC	6	1303	430	20	10.25417	-0.98816	0.93635	2.231	Developed	0.0135
QC	6	1304			10.25417	-0.98816	0.93635	2.231	S(6-1303)	
QC	6	1401	510	24	12.64978	-0.98129	0.92714	2.787	Developed	0.0318
QC	6	1405	370	18	5.99252	-0.83192	0.91955	1.939	Developed	0.0207
QC	6	1406			12.64978	-0.98129	0.92714	2.787	S(6-1401)	
QC	6	1410	130	4	100	-1.86099	0.99118	1.830	Developed	0.0629
QC	6	1550			23.09543	-1.24338	0.97843	2.059	S(6-G12)	
QC	6	1601			1.22048	-0.03617	0	1.080	S(8-1601)	
QC	6	1701			23.09543	-1.24338	0.97843	2.059	S(6-G12)	
QC	6	1800			23.09543	-1.24338	0.97843	2.059	S(6-G12)	
QC	6	1900	190	7	7.70957	-0.66857	0.68974	2.584	Developed	0.0961
QC	6	2000	490	21	13.63717	-1.04457	0.94423	2.553	Developed	0.0192
QC	6	2101			2.64149	-0.48517	0.78568	1.584	S(6-2108)	
QC	6	2102			2.64149	-0.48517	0.78568	1.584	S(6-2108)	
QC	6	2104			2.64149	-0.48517	0.78568	1.584	S(6-2108)	
QC	6	2108	370	18	2.64149	-0.48517	0.78568	1.584	Developed	0.0189
QC	6	2201	150	4	79.34118	-1.77218	1.06325	3.822	Developed	0.0468
QC	6	2202			79.34118	-1.77218	1.06325	3.822	S(6-2201)	
QC	6	2203			79.34118	-1.77218	1.06325	3.822	S(6-2201)	
QC	6	2801	250	7	5.76622	-0.67631	0.82268	2.306	Developed	0.079
QC	6	2802	110	6	95.32004	-1.68006	1.04938	2.038	Developed	0.0083
QC	6	3000	470	18	8.97534	-1.16548	1.00573	2.337	Developed	0.0659
QC	6	3401	290	10	38.36604	-1.52492	1.01064	2.167	Developed	0.055
QC	6	3402	390	17	11.20539	-1.03138	0.95098	2.646	Developed	0.0156
QC	6	3403			11.20539	-1.03138	0.95098	2.646	S(6-3402)	
QC	6	3500	130	7	24.89521	-1.39549	1.04036	1.933	Developed	0.0409
QC	6	3960	130	6	7.14708	-0.66605	0.66032	2.104	Developed	0.0388
QC	7	101	310	15	8.00911	-0.8993	0.88455	2.479	Developed	0.023
QC	7	102	510	18	8.48027	-0.91997	0.90692	2.647	Developed	0.0143
QC	7	103	330	9	16.5471	-1.07485	0.94481	3.552	Developed	0.056
QC	7	105	390	18	5.33345	-0.71424	0.82205	2.565	Developed	0.0271
QC	7	107			8.48027	-0.91997	0.90692	2.647	S(7-102)	
QC	7	202	450	14	1.925	-0.13469	0	1.504	Developed	0.1364
QC	7	203	210	8	18.49104	-1.1204	0.92453	11.676	Developed	0.0778
QC	7	209	290	14	1.21635	-0.03072	0	1.177	Developed	0.1244
QC	7	211			1.21635	-0.03072	0	1.177	S(7-209)	
QC	7	302	390	20	8.03498	-0.77667	0.8107	2.490	Developed	0.0212
QC	7	401	330	16	1.9729	-0.13265	0	1.773	Developed	0.1619
QC	7	602	330	17	4.86612	-0.38884	0.19561	2.737	Developed	0.137
QC	7	701	430	22	7.19908	-0.85924	0.89888	2.773	Developed	0.0113
QC	7	1201	550	26	21.00435	-1.16403	0.9603	3.787	Developed	0.0144
QC	7	1203	470	22	14.27524	-0.97576	0.88645	3.403	Developed	0.0391
QC	7	1205			14.27524	-0.97576	0.88645	3.403	S(7-1203)	
QC	7	1206	510	20	15.4152	-0.91081	0.84081	13.740	Developed	0.0758
QC	7	1211			19.99849	-1.14146	0.95549	3.778	S(7-G9)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
QC	7	1301	410	19	7.87944	-0.89056	0.9201	2.348	Developed	0.0218
QC	7	1303	330	16	9.70753	-0.8949	0.89553	2.562	Developed	0.0163
QC	7	1304	130	7	100	-1.94992	1.16345	3.833	Developed	0.1679
QC	7	1401	550	23	11.46728	-1.03896	0.96128	2.423	Developed	0.0158
QC	7	1405	630	20	11.58021	-1.01178	0.94141	2.523	Developed	0.016
QC	7	1406			11.46728	-1.03896	0.96128	2.423	S(7-1401)	
QC	7	1410			11.96784	-1.04344	0.95954	2.486	S(7-G11)	
QC	7	1550			29.89737	-1.28531	0.97435	2.439	S(7-G12)	
QC	7	1701			29.89737	-1.28531	0.97435	2.439	S(7-G12)	
QC	7	1900			31.30568	-1.29528	0.96149	3.566	Developed	
QC	7	2000	290	15	25.99389	-1.34008	0.99763	3.171	Developed	0.0486
QC	7	2108			2.64149	-0.48517	0.78568	1.584	S(6-2108)	
QC	7	2201	110	3	1.53779	-3.54937	1.12757	54.576	Developed	0.0102
QC	7	2202			1.53779	-3.54937	1.12757	54.576	S(7-2201)	
QC	7	2801	190	9	52.33799	-1.41949	0.92447	2.587	Developed	0.0973
QC	7	2802	110	6	29.2265	-1.24627	0.99155	2.253	Developed	0.0269
QC	7	3000			8.97534	-1.16548	1.00573	2.337	S(6-3000)	
QC	7	3401	390	15	14.94825	-0.9484	0.87561	4.036	Developed	0.0626
QC	7	3402	190	10	6.65056	-0.77447	0.83121	2.680	Developed	0.0362
QC	7	3403			6.65056	-0.77447	0.83121	2.680	S(7-3402)	
QC	7	3500			100	-1.83852	0.99124	1.974	S(8-3500)	
QC	7	3960			7.14708	-0.66605	0.66032	2.104	S(6-3960)	
QC	8	101	190	10	16.02972	-1.09825	0.93694	3.514	Developed	0.0413
QC	8	102	350	15	9.09471	-0.82258	0.82598	3.079	Developed	0.0356
QC	8	103			16.5471	-1.07485	0.94481	3.552	S(7-103)	
QC	8	105	290	14	70.17058	-1.86157	1.05514	2.793	Developed	0.0717
QC	8	107			9.09471	-0.82258	0.82598	3.079	S(8-102)	
QC	8	202	390	20	3.28538	-0.48774	0.71381	2.110	Developed	0.068
QC	8	203	170	7	100	-1.95623	0.96308	1.481	Developed	0.1463
QC	8	209			1.21635	-0.03072	0	1.177	S(7-209)	
QC	8	211			1.21635	-0.03072	0	1.177	S(7-209)	
QC	8	302	310	15	7.36094	-0.70006	0.73816	3.027	Developed	0.0165
QC	8	401	390	20	4.41187	-0.30879	0	3.290	Developed	0.1414
QC	8	602	270	14	21.59003	-1.31316	1.01414	3.127	Developed	0.0333
QC	8	701	370	17	6.68018	-0.81487	0.88575	2.504	Developed	0.0451
QC	8	1201	390	16	17.75801	-1.07948	0.94762	3.469	Developed	0.0325
QC	8	1203	330	12	4.94358	-0.68881	0.84448	3.163	Developed	0.0633
QC	8	1205	230	8	100	-1.93914	1.02123	1.671	Developed	0.0648
QC	8	1206	390	16	71.32324	-1.77687	1.07236	3.361	Developed	0.0533
QC	8	1211			16.16578	-1.0682	0.95333	3.140	S(8-G9)	
QC	8	1301	290	14	92.30974	-1.63804	0.99641	7.824	Developed	0.0686
QC	8	1303	310	12	100	-1.65707	1.00054	1.585	Developed	0.0494
QC	8	1304	110	6	10.9088	-0.97116	0.99681	2.385	Developed	0.0706
QC	8	1401	530	25	100	-1.75952	1.00996	3.224	Developed	0.0186
QC	8	1404			100	-1.75952	1.00996	3.224	S(8-1401)	
QC	8	1405	490	21	14.49993	-1.05506	0.94605	2.529	Developed	0.0143
QC	8	1406	430	19	12.02775	-1.22901	1.00508	1.936	Developed	0.0364
QC	8	1550			36.2353	-1.49764	1.01364	2.192	S(8-G12)	
QC	8	1601	210	7	1.22048	-0.03617	0	1.080	Developed	0.0418
QC	8	1701			36.2353	-1.49764	1.01364	2.192	S(8-G12)	
QC	8	1900	250	8	31.30568	-1.29528	0.96149	3.566	Developed	0.0506
QC	8	2000	330	14	100	-1.34043	0.85967	1.532	Developed	0.1473
QC	8	2101	170	8	2.52232	-0.61822	0.95469	2.018	Developed	0.066
QC	8	2102			2.52232	-0.61822	0.95469	2.018	S(8-2101)	
QC	8	2104			2.52232	-0.61822	0.95469	2.018	S(8-2101)	
QC	8	2108	250	9	100	-1.45751	0.9248	1.301	Developed	0.0373
QC	8	2201	130	5	6.89586	-0.83511	0.86058	2.366	Developed	0.029
QC	8	2202			6.89586	-0.83511	0.86058	2.366	S(8-2201)	
QC	8	2203			6.89586	-0.83511	0.86058	2.366	S(8-2201)	
QC	8	2801	330	7	13.64111	-0.99198	0.8864	4.442	Developed	0.0249
QC	8	2802			13.64111	-0.99198	0.8864	4.442	S(8-2801)	
QC	8	3000	430	13	67.60174	-1.58327	1.00009	4.084	Developed	0.0846
QC	8	3401	270	14	4.77647	-0.97728	1.0072	1.415	Developed	0.0944
QC	8	3402	210	9	71.20557	-1.96266	1.07315	3.446	Developed	0.066
QC	8	3403			4.77647	-0.97728	1.0072	1.415	S(8-3401)	
QC	8	3405	290	13	2.14097	-0.15543	0	1.609	Developed	0.1493
QC	8	3500	110	5	100	-1.83852	0.99124	1.974	Developed	0.0783
QC	15	101	250	11	4.58911	-0.71063	0.84952	2.117	Developed	0.0473
QC	15	105			10.39531	-1.06237	0.95677	2.674	S(6-105)	
QC	15	107			4.58911	-0.71063	0.84952	2.117	S(15-101)	
QC	15	202			4.76288	-0.79539	0.93756	1.987	S(6-202)	
QC	15	203	130	6	4.00559	-0.87675	1.09041	2.530	Developed	0.1796
QC	15	209			5.38329	-0.89559	0.96393	1.773	S(6-209)	
QC	15	302			11.57012	-0.92928	0.87474	2.695	S(6-302)	
QC	15	401			3.72682	-0.64352	0.87049	2.099	S(6-401)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
QC	15	602			11.59906	-1.108	1.00027	2.349	S(6-602)	
QC	15	701			2.73419	-0.44256	0.68656	1.938	S(6-701)	
QC	15	1201			12.91952	-1.06418	0.95711	2.556	S(6-1201)	
QC	15	1203			5.72642	-0.80223	0.91475	2.675	S(6-1203)	
QC	15	1211			12.66183	-1.05787	0.95865	2.557	S(6-G9)	
QC	15	1301			15.35825	-1.18031	0.97261	2.097	S(6-1301)	
QC	15	1303			10.25417	-0.98816	0.93635	2.231	S(6-1303)	
QC	15	1401			12.64978	-0.98129	0.92714	2.787	S(6-1401)	
QC	15	1405			5.99252	-0.83192	0.91955	1.939	S(6-1405)	
QC	15	1550			23.09543	-1.24338	0.97843	2.059	S(6-G12)	
NB	7	100			4.67363	-0.82924	0.91921	2.572	S(7-102)	
NB	7	101	310	16	7.55885	-0.99103	0.93223	2.767	Developed	0.0139
NB	7	102	370	19	4.67363	-0.82924	0.91921	2.572	Developed	0.0176
NB	7	105	350	18	5.18119	-0.62943	0.72237	3.005	Developed	0.0649
NB	7	107			4.67363	-0.82924	0.91921	2.572	S(7-102)	
NB	7	108			5.18119	-0.62943	0.72237	3.005	S(7-105)	
NB	7	202			1.925	-0.13469	0	1.504	S(QC-7-202)	
NB	7	203	310	15	26.62259	-1.52602	1.02523	2.990	Developed	0.0889
NB	7	209			26.62259	-1.52602	1.02523	2.990	S(7-203)	
NB	7	302	350	18	6.87158	-0.88717	0.90555	3.080	Developed	0.0089
NB	7	401			1.9729	-0.13265	0	1.773	S(QC-7-401)	
NB	7	601			100	-1.7163	1.00353	1.306	S(7-602)	
NB	7	602	250	10	100	-1.7163	1.00353	1.306	Developed	0.0278
NB	7	701	410	17	29.99509	-1.44058	0.99296	1.140	Developed	0.023
NB	7	1200			23.57963	-1.13546	0.92102	5.415	S(7-1201)	
NB	7	1201	490	23	23.57963	-1.13546	0.92102	5.415	Developed	0.0287
NB	7	1203	310	8	1.1043	-0.01552	0	1.034	Developed	0.011
NB	7	1206	310	13	73.52641	-1.35849	0.889	3.220	Developed	0.0905
NB	7	1301	330	15	6.50267	-0.66603	0.74268	2.162	Developed	0.0775
NB	7	1303	310	15	14.44854	-0.8381	0.73714	3.915	Developed	0.0783
NB	7	1304	130	4	8.49978	-0.49658	0	1.557	Developed	0.0266
NB	7	1401	270	14	4.38144	-0.30622	0.01531	2.781	Developed	0.131
NB	7	1405	330	17	11.32485	-0.90104	0.86949	3.079	Developed	0.0431
NB	7	1500			6.10339	-0.86753	0.94422	1.214	S(7-G12)	
NB	7	1550			6.10339	-0.86753	0.94422	1.214	S(7-G12)	
NB	7	2000	270	12	6.10339	-0.86753	0.94422	1.214	Developed	0.0094
PE	7	101	250	12	10.82144	-1.45701	1.01631	1.726	Developed	0.049
PE	7	102	210	11	2.90026	-0.36516	0.43356	2.083	Developed	0.2061
PE	7	105	330	16	100	-2.06648	1.00956	2.816	Developed	0.0662
PE	7	202			1.925	-0.13469	0	1.504	S(QC-7-202)	
PE	7	209			26.62259	-1.52602	1.02523	2.990	S(NB-7-203)	
PE	7	302	290	14	3.1528	-0.56121	0.80284	1.903	Developed	0.0655
PE	7	401	310	5	0	-2897570.962	1.00293	1.003	Developed	0.0029
PE	7	602	290	10	0.94294	-0.43151	0.89893	1.378	Developed	0.0389
PE	7	701	230	10	100	-1.91903	1.00316	1.859	Developed	0.1035
PE	7	1200			100	-1.604	0.93465	3.352	S(7-1201)	
PE	7	1201	310	15	100	-1.604	0.93465	3.352	Developed	0.1218
PE	7	1206	350	10	77.98905	-1.36278	0.9365	1.868	Developed	0.0819
PE	7	1301	150	8	4.37036	-0.63559	0.7599	2.037	Developed	0.0205
PE	7	1303	230	10	2.18864	-0.15402	0	1.543	Developed	0.1259
PE	7	1304			2.18864	-0.15402	0	1.543	S(7-1303)	
PE	7	1401	210	8	1.32081	-0.6135	0.95297	1.114	Developed	0.0195
PE	7	1405	250	13	36.15239	-1.38027	0.96552	2.571	Developed	0.0274
PE	7	1550			22.08373	-1.31949	1.00787	1.984	S(7-G12)	
PE	7	2000	190	7	100	-1.57409	0.99315	1.176	Developed	0.0589
PE	7	2108			22.08373	-1.31949	1.00787	1.984	S(7-G12)	
PE	7	2200	290	4	0	-69.073	1.04273	1.043	Developed	0.0549
PE	7	2201			0	-69.073	1.04273	1.043	S(7-2200)	
PE	7	2802	90	5	100	-1.6527	0.89754	2.816	Developed	0.1323
PE	7	3401			14.94825	-0.9484	0.87561	4.036	S(QC-7-3401)	
NF	1	101			8.53874	-0.82173	1.01392	5.125	S(6-101)	
NF	1	105			5.85068	-0.35469	0	3.996	S(6-105)	
NF	1	302			10.03927	-0.7285	0.88189	6.176	S(6-302)	
NF	1	602			11.59906	-1.108	1.00027	2.349	S(QC-6-602)	
NF	1	1303			6.79907	-0.45251	0	4.331	S(6-1303)	
NF	5	101			8.53874	-0.82173	1.01392	5.125	S(6-101)	
NF	5	105			5.85068	-0.35469	0	3.996	S(6-105)	
NF	5	202			4.76288	-0.79539	0.93756	1.987	S(QC-6-202)	
NF	5	302			10.03927	-0.7285	0.88189	6.176	S(6-302)	
NF	5	602			11.59906	-1.108	1.00027	2.349	S(QC-6-602)	
NF	5	1201			12.91952	-1.06418	0.95711	2.556	S(QC-6-1201)	
NF	5	1203			5.72642	-0.80223	0.91475	2.675	S(QC-6-1203)	
NF	5	1301			15.35825	-1.18031	0.97261	2.097	S(QC-6-1301)	
NF	5	1303			6.79907	-0.45251	0	4.331	S(6-1303)	
NF	5	1405			5.99252	-0.83192	0.91955	1.939	S(QC-6-1405)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
NF	5	1500			23.09543	-1.24338	0.97843	2.059	S(QC-6-G12)	
NF	6	101	155	11	8.53874	-0.82173	1.01392	5.125	Developed	0.1872
NF	6	105	145	5	5.85068	-0.35469	0	3.996	Developed	0.576
NF	6	202			4.76288	-0.79539	0.93756	1.987	S(QC-6-202)	
NF	6	209			5.38329	-0.89559	0.96393	1.773	S(QC-6-209)	
NF	6	302	175	15	10.03927	-0.7285	0.88189	6.176	Developed	0.2926
NF	6	602			11.59906	-1.108	1.00027	2.349	S(QC-6-602)	
NF	6	1201			12.91952	-1.06418	0.95711	2.556	S(QC-6-1201)	
NF	6	1203			5.72642	-0.80223	0.91475	2.675	S(QC-6-1203)	
NF	6	1301			15.35825	-1.18031	0.97261	2.097	S(QC-6-1301)	
NF	6	1303	55	4	6.79907	-0.45251	0	4.331	Developed	0.5012
NF	6	1405			5.99252	-0.83192	0.91955	1.939	S(QC-6-1405)	
NF	6	1500			23.09543	-1.24338	0.97843	2.059	S(QC-6-G12)	
NF	6	3500			24.89521	-1.39549	1.04036	1.933	S(QC-6-3500)	
YK	2	101			16.71866	-0.65702	0.17189	6.829	S(12-101)	
YK	2	105			5.70955	-0.66636	0.82375	2.660	S(12-105)	
YK	2	204			67.9051	-1.46955	1.15772	7.854	S(12-204)	
YK	3	101			16.71866	-0.65702	0.17189	6.829	S(12-101)	
YK	3	105			5.70955	-0.66636	0.82375	2.660	S(12-105)	
YK	3	204			67.9051	-1.46955	1.15772	7.854	S(12-204)	
YK	3	304			15.80796	-0.99205	0.92479	4.228	S(12-G1)	
YK	3	602			67.9051	-1.46955	1.15772	7.854	S(12-G2)	
YK	3	1201			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	3	1203			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	3	1308			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	4	101			16.71866	-0.65702	0.17189	6.829	S(12-101)	
YK	4	105			5.70955	-0.66636	0.82375	2.660	S(12-105)	
YK	4	204			67.9051	-1.46955	1.15772	7.854	S(12-204)	
YK	4	304			15.80796	-0.99205	0.92479	4.228	S(12-G1)	
YK	4	602			67.9051	-1.46955	1.15772	7.854	S(12-G2)	
YK	4	1201			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	4	1203			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	4	1308			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	11	101			16.71866	-0.65702	0.17189	6.829	S(12-101)	
YK	11	105			5.70955	-0.66636	0.82375	2.660	S(12-105)	
YK	11	204			67.9051	-1.46955	1.15772	7.854	S(12-204)	
YK	11	304			15.80796	-0.99205	0.92479	4.228	S(12-G1)	
YK	11	602			67.9051	-1.46955	1.15772	7.854	S(12-G2)	
YK	11	1201			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	11	1203			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	11	1308			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	12	101	150	5	16.71866	-0.65702	0.17189	6.829	Developed	0.1491
YK	12	105	370	16	5.70955	-0.66636	0.82375	2.660	Developed	0.042
YK	12	204	250	12	67.9051	-1.46955	1.15772	7.854	Developed	0.2256
YK	12	304			15.80796	-0.99205	0.92479	4.228	S(12-G1)	
YK	12	602			67.9051	-1.46955	1.15772	7.854	S(12-G2)	
YK	12	1201	210	9	27.34361	-1.11317	0.96615	5.990	Developed	0.2219
YK	12	1203			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
YK	12	1308			27.34361	-1.11317	0.96615	5.990	S(12-1201)	
NS	7	101			10.82144	-1.45701	1.01631	1.726	S(PE-7-101)	
NS	7	102			2.90026	-0.36516	0.43356	2.083	S(PE-7-102)	
NS	7	103			2.90026	-0.36516	0.43356	2.083	S(PE-7-102)	
NS	7	105			100	-2.06648	1.00956	2.816	S(PE-7-105)	
NS	7	106			100	-2.06648	1.00956	2.816	S(PE-7-105)	
NS	7	107			2.90026	-0.36516	0.43356	2.083	S(PE-7-102)	
NS	7	202			1.925	-0.13469	0	1.504	S(QC-7-202)	
NS	7	203			26.62259	-1.52602	1.02523	2.990	S(NB-7-203)	
NS	7	209			26.62259	-1.52602	1.02523	2.990	S(NB-7-203)	
NS	7	211			26.62259	-1.52602	1.02523	2.990	S(NB-7-203)	
NS	7	302			3.1528	-0.56121	0.80284	1.903	S(PE-7-302)	
NS	7	401			0	-2897570.962	1.00293	1.003	S(PE-7-401)	
NS	7	601			0.94294	-0.43151	0.89893	1.378	S(PE-7-602)	
NS	7	602			0.94294	-0.43151	0.89893	1.378	S(PE-7-602)	
NS	7	701			100	-1.91903	1.00316	1.859	S(PE-7-701)	
NS	7	1100			5.0936	-0.91319	0.94841	1.976	S(PE-7F1)	
NS	7	1150			5.0936	-0.91319	0.94841	1.976	S(PE-7F1)	
NS	7	1200			100	-1.604	0.93465	3.352	S(PE-7-1201)	
NS	7	1201			100	-1.604	0.93465	3.352	S(PE-7-1201)	
NS	7	1206			77.98905	-1.36278	0.9365	1.868	S(PE-7-1206)	
NS	7	1301			4.37036	-0.63559	0.7599	2.037	S(PE-7-1301)	
NS	7	1303			2.18864	-0.15402	0	1.543	S(PE-7-1303)	
NS	7	1304			2.18864	-0.15402	0	1.543	S(PE-7-1303)	
NS	7	1401			1.32081	-0.6135	0.95297	1.114	S(PE-7-1401)	
NS	7	1405			36.15239	-1.38027	0.96552	2.571	S(PE-7-1405)	
NS	7	1500			22.08373	-1.31949	1.00787	1.984	S(PE-7-G12)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
NS	7	1550			22.08373	-1.31949	1.00787	1.984	S(PE-7-G12)	
NS	7	2000			100	-1.57409	0.99315	1.176	S(PE-7-2000)	
NS	7	2100			22.08373	-1.31949	1.00787	1.984	S(PE-7-G12)	
NS	7	2108			22.08373	-1.31949	1.00787	1.984	S(PE-7-G12)	
NS	7	2201			0	-69.073	1.04273	1.043	S(PE-7-2200)	
NS	7	2801			52.33799	-1.41949	0.92447	2.587	S(QC-7-2801)	
NS	7	3400			14.94825	-0.9484	0.87561	4.036	S(QC-7-3401)	
NS	7	3401			14.94825	-0.9484	0.87561	4.036	S(QC-7-3401)	
NS	7	4000			22.08373	-1.31949	1.00787	1.984	S(PE-7-G12)	
NS	7	5000			100	-1.60514	0.96237	3.373	S(PE-7-G9)	
NT	2	101			16.71866	-0.65702	0.17189	6.829	S(YK-2-101)	
NT	2	105			5.70955	-0.66636	0.82375	2.660	S(YK-2-105)	
NT	2	204			67.9051	-1.46955	1.15772	7.854	S(YK-2-204)	
NT	3	101			16.71866	-0.65702	0.17189	6.829	S(YK-3-101)	
NT	3	105			5.70955	-0.66636	0.82375	2.660	S(YK-3-105)	
NT	3	204			67.9051	-1.46955	1.15772	7.854	S(YK-3-204)	
NT	3	304			15.80796	-0.99205	0.92479	4.228	S(YK-3-304)	
NT	3	602			67.9051	-1.46955	1.15772	7.854	S(YK-3-602)	
NT	3	1201			27.34361	-1.11317	0.96615	5.990	S(YK-3-1201)	
NT	3	1203			27.34361	-1.11317	0.96615	5.990	S(YK-3-1203)	
NT	3	1308			27.34361	-1.11317	0.96615	5.990	S(YK-3-1308)	
NT	4	101			10.40668	-0.45672	0	5.098	S(AB-4-101)	
NT	4	105			100	-1.36729	0.89492	1.673	S(AB-4-105)	
NT	4	203			100	-1.50378	0.93718	1.159	S(AB-4-203)	
NT	4	204			100	-1.50378	0.93718	1.159	S(AB-4-204)	
NT	4	216			100	-1.44649	0.9062	1.354	S(AB-4-216)	
NT	4	302			1.35033	-0.0573	0	1.287	S(AB-4-302)	
NT	4	500			100	-1.17643	0.78738	1.415	S(AB-4-500)	
NT	4	601			2.47087	-0.50127	0.89816	2.025	S(AB-4-601)	
NT	4	602			2.47087	-0.50127	0.89816	2.025	S(AB-4-602)	
NT	4	1200			19.96441	-0.93331	0.80583	2.661	S(AB-4-1200)	
NT	4	1201			19.96441	-0.93331	0.80583	2.661	S(AB-4-1201)	
NT	4	1203			1.55347	-0.08847	0	1.438	S(AB-4-1203)	
NT	4	1303			25.07966	-0.78065	0.26171	2.929	S(AB-4-1303)	
NT	5	101			10.40668	-0.45672	0	5.098	S(AB-5-101)	
NT	5	105			1.28332	-0.04223	0	1.226	S(AB-5-105)	
NT	5	203			17.48375	-1.1662	0.95782	4.518	S(AB-5-203)	
NT	5	204			22.25858	-0.79598	0.65006	7.633	S(AB-5-204)	
NT	5	216			21.42318	-0.82482	0.71896	7.227	S(AB-5-216)	
NT	5	302			1.35033	-0.0573	0	1.287	S(AB-5-302)	
NT	5	500			100	-1.17643	0.78738	1.415	S(AB-5-500)	
NT	5	601			2.47087	-0.50127	0.89816	2.025	S(AB-5-601)	
NT	5	602			2.47087	-0.50127	0.89816	2.025	S(AB-5-602)	
NT	5	1200			9.90809	-0.64128	0.61987	4.640	S(AB-5-1200)	
NT	5	1201			9.90809	-0.64128	0.61987	4.640	S(AB-5-1201)	
NT	5	1203			1.55347	-0.08847	0	1.438	S(AB-5-1203)	
NT	5	1303			25.07966	-0.78065	0.26171	2.929	S(AB-5-1303)	
NT	9	101			10.40668	-0.45672	0	5.098	S(AB-9-101)	
NT	9	104			1.28332	-0.04223	0	1.226	S(AB-9-104)	
NT	9	105			1.28332	-0.04223	0	1.226	S(AB-9-105)	
NT	9	109			1.28332	-0.04223	0	1.226	S(AB-9-109)	
NT	9	203			17.48375	-1.1662	0.95782	4.518	S(AB-9-203)	
NT	9	204			22.25858	-0.79598	0.65006	7.633	S(AB-9-204)	
NT	9	216			21.42318	-0.82482	0.71896	7.227	S(AB-9-216)	
NT	9	302			1.35033	-0.0573	0	1.287	S(AB-9-302)	
NT	9	304			1.35033	-0.0573	0	1.287	S(AB-9-304)	
NT	9	305			1.35033	-0.0573	0	1.287	S(AB-9-305)	
NT	9	306			1.35033	-0.0573	0	1.287	S(AB-9-306)	
NT	9	500			100	-1.17643	0.78738	1.415	S(AB-9-500)	
NT	9	600			2.47087	-0.50127	0.89816	2.025	S(AB-9-600)	
NT	9	601			2.47087	-0.50127	0.89816	2.025	S(AB-9-601)	
NT	9	602			2.47087	-0.50127	0.89816	2.025	S(AB-9-602)	
NT	9	604			2.47087	-0.50127	0.89816	2.025	S(AB-9-604)	
NT	9	1150			13.94938	-0.69433	0.62942	5.536	S(AB-9-1150)	
NT	9	1200			9.90809	-0.64128	0.61987	4.640	S(AB-9-1200)	
NT	9	1201			9.90809	-0.64128	0.61987	4.640	S(AB-9-1201)	
NT	9	1203			1.55347	-0.08847	0	1.438	S(AB-9-1203)	
NT	9	1303			25.07966	-0.78065	0.26171	2.929	S(AB-9-1303)	
NT	9	1404			25.07966	-0.78065	0.26171	2.929	S(AB-9-1404)	
NT	9	1500			25.07966	-0.78065	0.26171	2.929	S(AB-9-1500)	
NT	9	1550			25.07966	-0.78065	0.26171	2.929	S(AB-9-1550)	
NT	11	101			16.71866	-0.65702	0.17189	6.829	S(YK-11-101)	
NT	11	105			5.70955	-0.66636	0.82375	2.660	S(YK-11-105)	
NT	11	204			67.9051	-1.46955	1.15772	7.854	S(YK-11-204)	
NT	11	304			15.80796	-0.99205	0.92479	4.228	S(YK-11-304)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
NT	11	602			67.9051	-1.46955	1.15772	7.854	S(YK-11-602)	
NT	11	1201			27.34361	-1.11317	0.96615	5.990	S(YK-11-1201)	
NT	11	1203			27.34361	-1.11317	0.96615	5.990	S(YK-11-1203)	
NT	11	1308			27.34361	-1.11317	0.96615	5.990	S(YK-11-1308)	
NT	12	101			16.71866	-0.65702	0.17189	6.829	S(YK-12-101)	
NT	12	105			5.70955	-0.66636	0.82375	2.660	S(YK-12-105)	
NT	12	204			67.9051	-1.46955	1.15772	7.854	S(YK-12-204)	
NT	12	304			15.80796	-0.99205	0.92479	4.228	S(YK-12-304)	
NT	12	602			67.9051	-1.46955	1.15772	7.854	S(YK-12-602)	
NT	12	1201			27.34361	-1.11317	0.96615	5.990	S(YK-12-1201)	
NT	12	1203			27.34361	-1.11317	0.96615	5.990	S(YK-12-1203)	
NT	12	1308			27.34361	-1.11317	0.96615	5.990	S(YK-12-1308)	
NU	1	101			8.99246	-1.21901	1.0667	2.352	S(QC-1-101)	
NU	1	105			10.39531	-1.06237	0.95677	2.674	S(QC-1-105)	
NU	1	107			8.99246	-1.21901	1.0667	2.352	S(QC-1-107)	
NU	1	302			11.57012	-0.92928	0.87474	2.695	S(QC-1-302)	
NU	1	602			11.59906	-1.108	1.00027	2.349	S(QC-1-602)	
NU	1	1201			12.91952	-1.06418	0.95711	2.556	S(QC-1-1201)	
NU	1	1203			5.72642	-0.80223	0.91475	2.675	S(QC-1-1203)	
NU	1	1303			10.25417	-0.98816	0.93635	2.231	S(QC-1-1303)	
NU	2	101			8.99246	-1.21901	1.0667	2.352	S(QC-2-101)	
NU	2	105			10.39531	-1.06237	0.95677	2.674	S(QC-2-105)	
NU	2	107			8.99246	-1.21901	1.0667	2.352	S(QC-2-107)	
NU	2	302			11.57012	-0.92928	0.87474	2.695	S(QC-2-302)	
NU	2	602			11.59906	-1.108	1.00027	2.349	S(QC-2-602)	
NU	2	1201			12.91952	-1.06418	0.95711	2.556	S(QC-2-1201)	
NU	2	1203			5.72642	-0.80223	0.91475	2.675	S(QC-2-1203)	
NU	2	1303			10.25417	-0.98816	0.93635	2.231	S(QC-2-1303)	
NU	3	101			8.99246	-1.21901	1.0667	2.352	S(QC-3-101)	
NU	3	105			10.39531	-1.06237	0.95677	2.674	S(QC-3-105)	
NU	3	107			8.99246	-1.21901	1.0667	2.352	S(QC-3-107)	
NU	3	302			11.57012	-0.92928	0.87474	2.695	S(QC-3-302)	
NU	3	602			11.59906	-1.108	1.00027	2.349	S(QC-3-602)	
NU	3	1201			12.91952	-1.06418	0.95711	2.556	S(QC-3-1201)	
NU	3	1203			5.72642	-0.80223	0.91475	2.675	S(QC-3-1203)	
NU	3	1303			10.25417	-0.98816	0.93635	2.231	S(QC-3-1303)	
NU	5	101			8.99246	-1.21901	1.0667	2.352	S(QC-5-101)	
NU	5	105			10.39531	-1.06237	0.95677	2.674	S(QC-5-105)	
NU	5	107			8.99246	-1.21901	1.0667	2.352	S(QC-5-107)	
NU	5	202			4.76288	-0.79539	0.93756	1.987	S(QC-5-202)	
NU	5	203			8.59496	-0.98844	0.9525	2.053	S(QC-5-203)	
NU	5	209			5.38329	-0.89559	0.96393	1.773	S(QC-5-209)	
NU	5	302			11.57012	-0.92928	0.87474	2.695	S(QC-5-302)	
NU	5	401			3.72682	-0.64352	0.87049	2.099	S(QC-5-401)	
NU	5	602			11.59906	-1.108	1.00027	2.349	S(QC-5-602)	
NU	5	701			2.73419	-0.44256	0.68656	1.938	S(QC-5-701)	
NU	5	1201			12.91952	-1.06418	0.95711	2.556	S(QC-5-1201)	
NU	5	1203			5.72642	-0.80223	0.91475	2.675	S(QC-5-1203)	
NU	5	1211			12.66183	-1.05787	0.95865	2.557	S(QC-5-1211)	
NU	5	1301			15.35825	-1.18031	0.97261	2.097	S(QC-5-1301)	
NU	5	1303			10.25417	-0.98816	0.93635	2.231	S(QC-5-1303)	
NU	5	1401			12.64978	-0.98129	0.92714	2.787	S(QC-5-1401)	
NU	5	1405			5.99252	-0.83192	0.91955	1.939	S(QC-5-1405)	
NU	5	1550			23.09543	-1.24338	0.97843	2.059	S(QC-5-1550)	
NU	15	101			4.58911	-0.71063	0.84952	2.117	S(QC-15-101)	
NU	15	105			10.39531	-1.06237	0.95677	2.674	S(QC-15-105)	
NU	15	107			4.58911	-0.71063	0.84952	2.117	S(QC-15-107)	
NU	15	202			4.76288	-0.79539	0.93756	1.987	S(QC-15-202)	
NU	15	203			4.00559	-0.87675	1.09041	2.530	S(QC-15-203)	
NU	15	209			5.38329	-0.89559	0.96393	1.773	S(QC-15-209)	
NU	15	302			11.57012	-0.92928	0.87474	2.695	S(QC-15-302)	
NU	15	401			3.72682	-0.64352	0.87049	2.099	S(QC-15-401)	
NU	15	602			11.59906	-1.108	1.00027	2.349	S(QC-15-602)	
NU	15	701			2.73419	-0.44256	0.68656	1.938	S(QC-15-701)	
NU	15	1201			12.91952	-1.06418	0.95711	2.556	S(QC-15-1201)	
NU	15	1203			5.72642	-0.80223	0.91475	2.675	S(QC-15-1203)	
NU	15	1211			12.66183	-1.05787	0.95865	2.557	S(QC-15-1211)	
NU	15	1301			15.35825	-1.18031	0.97261	2.097	S(QC-15-1301)	
NU	15	1303			10.25417	-0.98816	0.93635	2.231	S(QC-15-1303)	
NU	15	1401			12.64978	-0.98129	0.92714	2.787	S(QC-15-1401)	
NU	15	1405			5.99252	-0.83192	0.91955	1.939	S(QC-15-1405)	
NU	15	1550			23.09543	-1.24338	0.97843	2.059	S(QC-15-1550)	
SK	5	101			22.44502	-1.04479	0.89465	6.595	S(MB-6-101)	
SK	5	105			4.35246	-0.88483	0.94593	3.760	S(MB-6-105)	
SK	5	203			25.56227	-1.19477	0.91577	7.048	S(MB-6-203)	

jur	ecozone	species	volm	count	a	b	k	cap	model	rmse
SK	5	302			50.08769	-1.4757	0.97733	3.642	S(MB-6-302)	
SK	5	602			6.30082	-0.86233	0.9576	4.670	S(MB-6-602)	
SK	5	1201			30.01994	-1.29268	0.96759	8.253	S(MB-6-1201)	
SK	5	1303			4.14352	-0.33058	0	2.435	S(MB-6-1303)	
SK	6	101			22.44502	-1.04479	0.89465	6.595	S(MB-6-101)	
SK	6	105			4.35246	-0.88483	0.94593	3.760	S(MB-6-105)	
SK	6	203			25.56227	-1.19477	0.91577	7.048	S(MB-6-203)	
SK	6	302			50.08769	-1.4757	0.97733	3.642	S(MB-6-302)	
SK	6	602			6.30082	-0.86233	0.9576	4.670	S(MB-6-602)	
SK	6	701			1.53277	-0.08744	0	1.140	S(MB-6-701)	
SK	6	1201			30.01994	-1.29268	0.96759	8.253	S(MB-6-1201)	
SK	6	1203			30.01994	-1.29268	0.96759	8.253	S(MB-6-1201)	
SK	6	1303			4.14352	-0.33058	0	2.435	S(MB-6-1303)	
SK	6	1404			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
SK	6	1500			23.09543	-1.24338	0.97843	2.059	S(QC-6-G12)	
SK	9	101			14.28144	-0.88034	0.78835	5.599	S(MB-9-101)	
SK	9	105			1.17265	-0.5913	0.94111	1.658	S(MB-9-105)	
SK	9	107			14.28144	-0.88034	0.78835	5.599	S(MB-9-101)	
SK	9	203			14.58352	-1.25616	0.9591	4.707	S(MB-9-203)	
SK	9	302			50.08769	-1.4757	0.97733	3.642	S(MB-6-302)	
SK	9	602			6.30082	-0.86233	0.9576	4.670	S(MB-6-602)	
SK	9	701			1.53277	-0.08744	0	1.140	S(MB-6-701)	
SK	9	1201			33.66166	-1.8728	1.09091	2.503	S(MB-9-1201)	
SK	9	1203			33.66166	-1.8728	1.09091	2.503	S(MB-6-1201)	
SK	9	1303			4.14352	-0.33058	0	2.435	S(MB-9-1303)	
SK	9	1404			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
SK	9	1500			23.09543	-1.24338	0.97843	2.059	S(QC-6-G12)	
SK	9	2201			79.34118	-1.77218	1.06325	3.822	S(QC-6-2201)	
SK	9	3405			11.20539	-1.03138	0.95098	2.646	S(QC-6-3402)	
SK	10	101			14.28144	-0.88034	0.78835	5.599	S(MB-6-101)	
SK	10	105			1.17265	-0.5913	0.94111	1.658	S(MB-6-105)	
SK	10	203			14.58352	-1.25616	0.9591	4.707	S(MB-6-203)	
SK	10	204			14.58352	-1.25616	0.9591	4.707	S(MB-6-203)	
SK	10	302			50.08769	-1.4757	0.97733	3.642	S(MB-6-302)	
SK	10	602			6.30082	-0.86233	0.9576	4.670	S(MB-6-602)	
SK	10	1201			33.66166	-1.8728	1.09091	2.503	S(MB-6-1201)	
SK	10	1203			33.66166	-1.8728	1.09091	2.503	S(MB-6-1201)	
SK	10	1303			4.14352	-0.33058	0	2.435	S(MB-6-1303)	
SK	10	1404			8.82737	-0.92782	0.93709	2.205	S(QC-6-G11)	
SK	10	2201			79.34118	-1.77218	1.06325	3.822	S(QC-6-2201)	
SK	10	3405			11.20539	-1.03138	0.95098	2.646	S(QC-6-3402)	

Table 5. Stem wood biomass model parameters for sapling-sized trees by jurisdiction, ecozone and predominant genus

saplingfactor = $k + a \times b\_nm^b$
volm = highest recorded volume in plots used to develop model (m^3/ha)
count = number of unique plots used to develop model
cap = upper cap on saplingfactor
model = model was developed or substituted from another province/ecozone/species/genus(G)/forest type(F)
rmse = root mean square error

jur	ecozone	genus	volm	count	a	b	k	cap	model	rmse
BC	4	1			100.00000	-2.53701	0.99954	1.043	S(12-1)	
BC	4	2			3.98935	-1.49181	0.99799	1.034	S(12-2)	
BC	4	3			0.00000	-0.50000	1.00000	1.000	S(12-3)	
BC	4	4			100.00000	-1.59970	0.99224	1.307	S(13-4)	
BC	4	5			32.95091	-1.48218	0.99731	1.176	S(13-5)	
BC	4	6			100.00000	-1.15707	0.79768	1.933	S(14-6)	
BC	4	7			100.00000	-1.74725	0.99328	1.249	S(13-7)	
BC	4	9			100.00000	-2.24387	0.99994	1.030	S(12-9)	
BC	4	10			100.00000	-1.97475	0.99125	1.053	S(12-10)	
BC	4	12			0.06278	-0.27607	0.98750	1.012	S(13-12)	
BC	9	1			100.00000	-2.53701	0.99954	1.043	S(12-1)	
BC	9	2			3.98935	-1.49181	0.99799	1.034	S(12-2)	
BC	9	3			0.00000	-0.50000	1.00000	1.000	S(12-3)	
BC	9	4			100.00000	-1.59970	0.99224	1.307	S(13-4)	
BC	9	5			32.95091	-1.48218	0.99731	1.176	S(13-5)	
BC	9	6			100.00000	-1.15707	0.79768	1.933	S(14-6)	
BC	9	7			100.00000	-1.74725	0.99328	1.249	S(13-7)	
BC	9	9			100.00000	-2.24387	0.99994	1.030	S(12-9)	
BC	9	10			100.00000	-1.97475	0.99125	1.053	S(12-10)	
BC	9	11			0.57735	-1.04228	0.99942	1.015	S(13-9)	
BC	9	12			0.06278	-0.27607	0.98750	1.012	S(13-12)	
BC	12	1	550	28	100.00000	-2.53701	0.99954	1.043	Developed	0.0009
BC	12	2	590	25	3.98935	-1.49181	0.99799	1.034	Developed	0.0018
BC	12	3	390	12	0.00000	-0.50000	1.00000	1.000	Developed	0
BC	12	4			100.00000	-1.59970	0.99224	1.307	S(13-4)	
BC	12	5			32.95091	-1.48218	0.99731	1.176	S(13-5)	
BC	12	6			100.00000	-1.15707	0.79768	1.933	S(14-6)	
BC	12	7			100.00000	-1.74725	0.99328	1.249	S(13-7)	
BC	12	9	750	31	100.00000	-2.24387	0.99994	1.030	Developed	0.002
BC	12	10	290	9	100.00000	-1.97475	0.99125	1.053	Developed	0.0065
BC	12	11			0.57735	-1.04228	0.99942	1.015	S(13-9)	
BC	12	12			0.06278	-0.27607	0.98750	1.012	S(13-12)	
BC	13	1	2370	78	0.74087	-0.85381	0.99681	1.049	Developed	0.0197
BC	13	2	1290	30	100.00000	-1.73842	0.99153	1.106	Developed	0.0212
BC	13	3	1690	66	55.61720	-1.70460	0.99653	1.154	Developed	0.0131
BC	13	4	2110	85	100.00000	-1.59970	0.99224	1.307	Developed	0.0126
BC	13	5	2050	75	32.95091	-1.48218	0.99731	1.176	Developed	0.0109
BC	13	6			100.00000	-1.15707	0.79768	1.933	S(14-6)	
BC	13	7	1810	64	100.00000	-1.74725	0.99328	1.249	Developed	0.0288
BC	13	9	530	16	0.57735	-1.04228	0.99942	1.015	Developed	0.0034
BC	13	10	470	12	1.01268	0.00000	0.00000	1.013	Developed	0.0283
BC	13	11			0.57735	-1.04228	0.99942	1.015	S(13-9)	
BC	13	12	1010	30	0.06278	-0.27607	0.98750	1.012	Developed	0.0069
BC	14	1	1270	52	100.00000	-1.88056	0.99525	1.411	Developed	0.0332
BC	14	2	1050	46	90.88309	-1.77054	0.99762	1.299	Developed	0.0238
BC	14	3	1170	50	24.96734	-1.63907	0.99665	1.262	Developed	0.0062
BC	14	4	1250	53	100.00000	-1.53652	0.98448	1.460	Developed	0.0305
BC	14	5	1390	51	100.00000	-1.31464	0.92883	1.581	Developed	0.082
BC	14	6	650	31	100.00000	-1.15707	0.79768	1.933	Developed	0.1069
BC	14	7	1590	50	100.00000	-1.51651	0.97515	2.174	Developed	0.055
BC	14	9	830	29	100.00000	-1.48050	0.94607	1.547	Developed	0.0857
BC	14	10	630	25	2.41444	-0.67727	0.94270	1.178	Developed	0.0515
BC	14	11			100.00000	-1.48050	0.94607	1.547	S(14-9)	
BC	14	12	210	5	100.00000	-2.26692	1.00560	1.780	Developed	0.0101
AB	4	1	470	19	100.00000	-2.17789	0.99932	4.104	Developed	0.031
AB	4	2			100.00000	-1.64534	0.97137	1.538	S(9-2)	
AB	4	3			32.25579	-1.82482	0.99737	1.119	S(9-3)	
AB	4	5			100.00000	-0.96050	0.29493	1.434	S(14-5)	

jur	ecozone	genus	volm	count	a	b	k	cap	model	rmse
AB	4	6			2.74673	-2.09090	1.10694	1.206	S(9-6)	
AB	4	9	450	14	100.00000	-1.42254	0.89049	1.565	Developed	0.0525
AB	4	10			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	5	1			11.55899	-1.05701	0.95037	1.387	S(9-1)	
AB	5	2			100.00000	-1.64534	0.97137	1.538	S(9-2)	
AB	5	3			32.25579	-1.82482	0.99737	1.119	S(9-3)	
AB	5	5			100.00000	-0.96050	0.29493	1.434	S(14-5)	
AB	5	6			2.74673	-2.09090	1.10694	1.206	S(9-6)	
AB	5	9			22.03504	-1.17420	0.94352	1.742	S(9-9)	
AB	5	10			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	6	1			11.55899	-1.05701	0.95037	1.387	S(9-1)	
AB	6	2			100.00000	-1.64534	0.97137	1.538	S(9-2)	
AB	6	3			32.25579	-1.82482	0.99737	1.119	S(9-3)	
AB	6	5			100.00000	-0.96050	0.29493	1.434	S(14-5)	
AB	6	6			2.74673	-2.09090	1.10694	1.206	S(9-6)	
AB	6	9			22.03504	-1.17420	0.94352	1.742	S(9-9)	
AB	6	10			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	9	1	650	32	11.55899	-1.05701	0.95037	1.387	Developed	0.0538
AB	9	2	630	30	100.00000	-1.64534	0.97137	1.538	Developed	0.0246
AB	9	3	330	12	32.25579	-1.82482	0.99737	1.119	Developed	0.0219
AB	9	5			100.00000	-0.96050	0.29493	1.434	S(14-5)	
AB	9	6	170	19	2.74673	-2.09090	1.10694	1.206	Developed	0.1165
AB	9	8			253.86041	-1.98842	0.99297	1.537	S(9-F1)	
AB	9	9	570	26	22.03504	-1.17420	0.94352	1.742	Developed	0.0251
AB	9	10	210	4	100.00000	-1.02495	0.09598	1.867	Developed	0.0962
AB	9	11			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	9	12			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	9	13			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	10	1			11.55899	-1.05701	0.95037	1.387	S(9-1)	
AB	10	2			100.00000	-1.64534	0.97137	1.538	S(9-2)	
AB	10	3			32.25579	-1.82482	0.99737	1.119	S(9-3)	
AB	10	5			100.00000	-0.96050	0.29493	1.434	S(14-5)	
AB	10	6			2.74673	-2.09090	1.10694	1.206	S(9-6)	
AB	10	8			253.86041	-1.98842	0.99297	1.537	S(9-F1)	
AB	10	9			22.03504	-1.17420	0.94352	1.742	S(9-9)	
AB	10	10			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	10	13			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	14	1	590	16	100.00000	-1.62747	0.97826	1.116	Developed	0.013
AB	14	2	370	18	10.95261	-0.80887	0.80957	1.593	Developed	0.092
AB	14	3			32.25579	-1.82482	0.99737	1.119	S(9-3)	
AB	14	4			100.00000	-1.53652	0.98448	1.460	S(BC-14-4)	
AB	14	5	410	10	100.00000	-0.96050	0.29493	1.434	Developed	0.1754
AB	14	6			2.74673	-2.09090	1.10694	1.206	S(9-6)	
AB	14	7			100.00000	-1.51651	0.97515	2.174	S(BC-14-7)	
AB	14	8			6.36080	-0.62705	0.76063	1.584	S(14-F1	
AB	14	9	350	11	1.95498	-0.13794	0.00000	1.217	Developed	0.1557
AB	14	10			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	14	11			100.00000	-1.02495	0.09598	1.867	S(9-10)	
AB	14	13			100.00000	-1.02495	0.09598	1.867	S(9-10)	
NB	7	1	370	19	4.63023	-1.16502	0.98025	1.268	Developed	0.0122
NB	7	2			0.00000	0.00000	1.00000	1.000	No need	
NB	7	3	330	17	39.17548	-1.89486	0.99369	1.390	Developed	0.0098
NB	7	4			0.00000	0.00000	1.00000	1.000	No need	
NB	7	6			0.00000	0.00000	1.00000	1.000	No need	
NB	7	7	250	5	100.00000	-2.32877	1.00289	1.022	Developed	0.004
NB	7	9	170	7	100.00000	-1.79708	0.99302	1.342	Developed	0.0477
NB	7	10	130	5	5.94853	-0.41090	0.00000	1.618	Developed	0.0263
NB	7	11	150	5	4.88093	-0.62044	0.66974	1.536	Developed	0.0095
NB	7	12			4.88093	-0.62044	0.66974	1.536	S(7-11)	
NB	7	13			4.88093	-0.62044	0.66974	1.536	S(7-11)	
NF	1	1			0.29205	-1.19977	1.00083	1.015	S(6-1)	
NF	1	3			1.21650	-1.43803	0.99980	1.025	S(6-3)	
NF	1	6			0.00000	0.00000	1.00000	1.000	No need	
NF	1	10			2.88564	-1.52973	0.98948	1.065	S(6-10)	
NF	5	1			0.29205	-1.19977	1.00083	1.015	S(6-1)	
NF	5	2			0.00000	0.00000	1.00000	1.000	No need	
NF	5	3			1.21650	-1.43803	0.99980	1.025	S(6-3)	
NF	5	6			0.00000	0.00000	1.00000	1.000	No need	
NF	5	9			0.00000	0.00000	1.00000	1.000	No need	
NF	5	10			2.88564	-1.52973	0.98948	1.065	S(6-10)	
NF	5	11			0.00000	0.00000	1.00000	1.000	No need	
NF	5	12			0.00000	0.00000	1.00000	1.000	No need	
NF	6	1	155	13	0.29205	-1.19977	1.00083	1.015	Developed	0.0025
NF	6	2			0.00000	0.00000	1.00000	1.000	No need	

jur	ecozone	genus	volm	count	a	b	k	cap	model	rmse
NF	6	3	175	15	1.21650	-1.43803	0.99980	1.025	Developed	0.0025
NF	6	6			0.00000	0.00000	1.00000	1.000	No need	
NF	6	9			0.00000	0.00000	1.00000	1.000	No need	
NF	6	10	55	4	2.88564	-1.52973	0.98948	1.065	Developed	0.005
NF	6	11			0.00000	0.00000	1.00000	1.000	No need	
NF	6	12			0.00000	0.00000	1.00000	1.000	No need	
NT	4	1			100.00000	-2.17789	0.99932	4.104	S(AB-4-1)	
NT	4	2			100.00000	-1.64534	0.97137	1.538	S(AB-4-2)	
NT	4	3			32.25579	-1.82482	0.99737	1.119	S(AB-4-3)	
NT	4	5			100.00000	-0.96050	0.29493	1.434	S(AB-4-5)	
NT	4	6			2.74673	-2.09090	1.10694	1.206	S(AB-4-6)	
NT	4	9			100.00000	-1.42254	0.89049	1.565	S(AB-4-9)	
NT	4	10			100.00000	-1.02495	0.09598	1.867	S(AB-4-10)	
NT	5	1			11.55899	-1.05701	0.95037	1.387	S(AB-5-1)	
NT	5	2			100.00000	-1.64534	0.97137	1.538	S(AB-5-2)	
NT	5	3			32.25579	-1.82482	0.99737	1.119	S(AB-5-3)	
NT	5	5			100.00000	-0.96050	0.29493	1.434	S(AB-5-5)	
NT	5	6			2.74673	-2.09090	1.10694	1.206	S(AB-5-6)	
NT	5	9			22.03504	-1.17420	0.94352	1.742	S(AB-5-9)	
NT	5	10			100.00000	-1.02495	0.09598	1.867	S(AB-5-10)	
NT	9	1			11.55899	-1.05701	0.95037	1.387	S(AB-9-1)	
NT	9	2			100.00000	-1.64534	0.97137	1.538	S(AB-9-2)	
NT	9	3			32.25579	-1.82482	0.99737	1.119	S(AB-9-3)	
NT	9	5			100.00000	-0.96050	0.29493	1.434	S(AB-9-5)	
NT	9	6			2.74673	-2.09090	1.10694	1.206	S(AB-9-6)	
NT	9	8			253.86041	-1.98842	0.99297	1.537	S(AB-9-8)	
NT	9	9			22.03504	-1.17420	0.94352	1.742	S(AB-9-9)	
NT	9	10			100.00000	-1.02495	0.09598	1.867	S(AB-9-10)	
NT	9	11			100.00000	-1.02495	0.09598	1.867	S(AB-9-11)	
NT	9	12			100.00000	-1.02495	0.09598	1.867	S(AB-9-12)	
NT	9	13			100.00000	-1.02495	0.09598	1.867	S(AB-9-13)	

Table 6. Proportion model parameters by jurisdiction, ecozone and lead species

$$P_{stemwood} = \frac{1}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$

$$P_{stembark} = \frac{e^{a1+a2\times vol+a3\times lvol}}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$

$$P_{branches} = \frac{e^{b1+b2\times vol+b3\times lvol}}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$

$$P_{foliage} = \frac{e^{c1+c2\times vol+c3\times lvol}}{1 + e^{a1+a2\times vol+a3\times lvol} + e^{b1+b2\times vol+b3\times lvol} + e^{c1+c2\times vol+c3\times lvol}}$$

jur = jurisdiction
count = number of unique plots used to develop model
eco = ecozone
r_sw, r_sb, r_br, r_fl = root mean square errors (stemwood, stembark, branches, foliage)

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
BC	4	100		-1.60956	-0.00063	-0.02844	-1.68559	-0.00158	-0.09039	-1.16477	0.00057	-0.25778				
BC	4	101	81	-1.54908	-0.00006	-0.07404	-1.70112	0.00028	-0.18026	-1.35676	0.00004	-0.22372	0.024	0.01	0.021	0.014
BC	4	104		-1.60956	-0.00063	-0.02844	-1.68559	-0.00158	-0.09039	-1.16477	0.00057	-0.25778				
BC	4	105	64	-1.60956	-0.00063	-0.02844	-1.68559	-0.00158	-0.09039	-1.16477	0.00057	-0.25778	0.02	0.015	0.025	0.013
BC	4	204	69	-2.14744	-0.00068	0.01098	-1.75211	-0.00120	-0.07449	-2.08487	-0.00159	-0.05077	0.038	0.009	0.031	0.013
BC	4	206		-1.53753	0.00002	-0.07921	-1.83729	-0.00101	0.12395	-3.45303	-0.00167	0.29681				
BC	4	208		-0.44623	0.00083	-0.27177	1.80707	0.00087	-0.56041	1.45133	0.00125	-0.69118				
BC	4	300		-2.61722	-0.00055	0.16443	0.87847	0.00365	-0.66021	-0.15277	0.00146	-0.45845				
BC	4	301		-1.26800	0.00023	-0.14649	0.24702	0.00052	-0.35855	0.67499	0.00050	-0.45895				
BC	4	304		-2.61722	-0.00055	0.16443	0.87847	0.00365	-0.66021	-0.15277	0.00146	-0.45845				
BC	4	400		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
BC	4	402		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
BC	4	403		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
BC	4	500		-2.32409	-0.00014	0.10912	-0.69270	0.00016	-0.11998	-0.47021	0.00002	-0.28838				
BC	4	600		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	4	602		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	4	603		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	4	604		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	4	702		-1.37078	0.00018	-0.10944	-0.21679	0.00030	-0.23982	0.42986	0.00052	-0.48340				
BC	4	1201	100	-1.33948	-0.00002	-0.05322	-1.94665	0.00007	-0.11561	-1.43307	0.00164	-0.44432	0.027	0.01	0.029	0.01
BC	4	1203	20	-1.29320	-0.00092	-0.04377	-2.13100	-0.00036	0.03108	-2.16945	-0.00076	-0.17070	0.026	0.011	0.028	0.009
BC	4	1303	27	-1.56892	0.00000	-0.04029	-2.01137	-0.00237	0.07787	-2.02304	-0.00152	-0.14242	0.051	0.013	0.056	0.015
BC	4	1305		-1.56892	0.00000	-0.04029	-2.01137	-0.00237	0.07787	-2.02304	-0.00152	-0.14242				
BC	4	1308		-1.56892	0.00000	-0.04029	-2.01137	-0.00237	0.07787	-2.02304	-0.00152	-0.14242				
BC	4	1403		-1.15533	0.00011	-0.10207	-1.44799	-0.00029	-0.04720	-4.71078	-0.00132	0.27291				
BC	4	1802		-1.96747	-0.00009	0.01675	0.61014	0.00046	-0.43240	-0.67878	0.00063	-0.33985				
BC	9	100		-2.13858	-0.00063	0.06846	0.84377	-0.00058	-0.44448	0.30680	-0.00061	-0.44932				
BC	9	101	11	-0.94390	-0.00019	-0.19243	-1.85106	-0.00347	0.14892	-0.80163	-0.00208	-0.15082	0.054	0.014	0.031	0.037
BC	9	104		-2.13858	-0.00063	0.06846	0.84377	-0.00058	-0.44448	0.30680	-0.00061	-0.44932				
BC	9	105	40	-2.13858	-0.00063	0.06846	0.84377	-0.00058	-0.44448	0.30680	-0.00061	-0.44932	0.064	0.021	0.059	0.027
BC	9	106		-2.13858	-0.00063	0.06846	0.84377	-0.00058	-0.44448	0.30680	-0.00061	-0.44932				
BC	9	204	95	-1.60642	-0.00003	-0.12050	-0.99092	-0.00035	-0.25162	-1.03070	-0.00046	-0.29694	0.054	0.013	0.042	0.02
BC	9	206		-1.53753	0.00002	-0.07921	-1.83729	-0.00101	0.12395	-3.45303	-0.00167	0.29681				
BC	9	208		-0.44623	0.00083	-0.27177	1.80707	0.00087	-0.56041	1.45133	0.00125	-0.69118				
BC	9	300		-2.61722	-0.00055	0.16443	0.87847	0.00365	-0.66021	-0.15277	0.00146	-0.45845				
BC	9	301		-1.26800	0.00023	-0.14649	0.24702	0.00052	-0.35855	0.67499	0.00050	-0.45895				
BC	9	304		-2.61722	-0.00055	0.16443	0.87847	0.00365	-0.66021	-0.15277	0.00146	-0.45845				
BC	9	400		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
BC	9	402		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
BC	9	403		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
BC	9	500		-2.32409	-0.00014	0.10912	-0.69270	0.00016	-0.11998	-0.47021	0.00002	-0.28838				
BC	9	600		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	9	602		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	9	603		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	9	604		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
BC	9	702		-1.37078	0.00018	-0.10944	-0.21679	0.00030	-0.23982	0.42986	0.00052	-0.48340				
BC	9	1201	90	-1.05369	-0.00006	-0.06603	-1.71356	-0.00051	-0.06187	-2.45381	-0.00258	-0.08284	0.04	0.019	0.04	0.018
BC	9	1203	14	-1.06347	0.00007	-0.10037	-0.46651	0.00001	-0.19878	0.89198	0.00214	-0.85523	0.044	0.022	0.05	0.013
BC	9	1303	8	-0.61405	0.00223	-0.31761	-3.87334	-0.00345	0.70929	-2.55439	-0.00408	0.03878	0.034	0.01	0.039	0.009
BC	9	1305		-0.61405	0.00223	-0.31761	-3.87334	-0.00345	0.70929	-2.55439	-0.00408	0.03878				
BC	9	1308		-0.61405	0.00223	-0.31761	-3.87334	-0.00345	0.70929	-2.55439	-0.00408	0.03878				
BC	9	1403		-1.15533	0.00011	-0.10207	-1.44799	-0.00029	-0.04720	-4.71078	-0.00132	0.27291				
BC	9	1802		-1.96747	-0.00009	0.01675	0.61014	0.00046	-0.43240	-0.67878	0.00063	-0.33985				
BC	12	100		-1.60844	-0.00037	-0.05166	-2.19990	-0.00348	0.19577	-1.13882	-0.00224	-0.13420				
BC	12	101	35	-1.36293	0.00018	-0.10464	-1.30874	-0.00147	-0.12218	-0.87608	0.00004	-0.32254	0.042	0.006	0.032	0.017
BC	12	104		-1.60844	-0.00037	-0.05166	-2.19990	-0.00348	0.19577	-1.13882	-0.00224	-0.13420				
BC	12	105	64	-1.60844	-0.00037	-0.05166	-2.19990	-0.00348	0.19577	-1.13882	-0.00224	-0.13420	0.066	0.01	0.043	0.023
BC	12	106		-1.07341	0.00011	-0.17291	1.06544	0.00027	-0.43841	0.65877	0.00028	-0.41110				
BC	12	201		-1.41174	0.00020	-0.11697	1.12058	0.00119	-0.53099	1.62932	0.00173	-0.76184				
BC	12	204	130	-1.79917	-0.00023	-0.08368	-1.33280	0.00001	-0.15161	-1.44423	-0.00049	-0.21075	0.058	0.006	0.053	0.011
BC	12	206		-1.53753	0.00002	-0.07921	-1.83729	-0.00101	0.12395	-3.45303	-0.00167	0.29681				
BC	12	208		-0.44623	0.00083	-0.27177	1.80707	0.00087	-0.56041	1.45133	0.00125	-0.69118				
BC	12	300		-2.61722	-0.00055	0.16443	0.87847	0.00365	-0.66021	-0.15277	0.00146	-0.45845				
BC	12	301		-1.26800	0.00023	-0.14649	0.24702	0.00052	-0.35855	0.67499	0.00050	-0.45895				
BC	12	303		-2.61722	-0.00055	0.16443	0.87847	0.00365	-0.66021	-0.15277	0.00146	-0.45845				
BC	12	304	19	-2.61722	-0.00055	0.16443	0.87847	0.00365	-0.66021	-0.15277	0.00146	-0.45845	0.053	0.019	0.055	0.016
BC	12	400		-0.94047	0.00015	-0.18072	1.15062	0.00031	-0.50674	0.89950	0.00037	-0.57301				
BC	12	402		-0.94047	0.00015	-0.18072	1.15062	0.00031	-0.50674	0.89950	0.00037	-0.57301				
BC	12	403		-1.85530	-0.00020	0.03228	-0.50784	0.00013	-0.21445	-1.73029	0.00015	-0.12991				
BC	12	500		-1.48710	-0.00004	-0.06301	-0.99796	-0.00007	-0.18779	-1.00063	-0.00024	-0.28415				
BC	12	600		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	12	602		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	12	603		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	12	604		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	12	702		-1.36456	0.00018	-0.12536	-0.87735	-0.00020	-0.10052	0.18083	0.00042	-0.43478				
BC	12	1001		-2.28544	0.00022	-0.05148	-0.82522	0.00056	-0.29695	-0.29501	0.00104	-0.50417				
BC	12	1201		-1.33948	-0.00002	-0.05322	-1.94665	0.00007	-0.11561	-1.43307	0.00164	-0.44432				
BC	12	1203		-1.29320	-0.00092	-0.04377	-2.13100	-0.00036	0.03108	-2.16945	-0.00076	-0.17070				
BC	12	1303		-1.56892	0.00000	-0.04029	-2.01137	-0.00237	0.07787	-2.02304	-0.00152	-0.14242				
BC	12	1305		-1.56892	0.00000	-0.04029	-2.01137	-0.00237	0.07787	-2.02304	-0.00152	-0.14242				
BC	12	1308		-1.56892	0.00000	-0.04029	-2.01137	-0.00237	0.07787	-2.02304	-0.00152	-0.14242				
BC	12	1403		-1.15533	0.00011	-0.10207	-1.44799	-0.00029	-0.04720	-4.71078	-0.00132	0.27291				
BC	12	1802		-1.96747	-0.00009	0.01675	0.61014	0.00046	-0.43240	-0.67878	0.00063	-0.33985				
BC	13	100		-1.07341	0.00011	-0.17291	1.06544	0.00027	-0.43841	0.65877	0.00028	-0.41110				
BC	13	101		-1.36293	0.00018	-0.10464	-1.30874	-0.00147	-0.12218	-0.87608	0.00004	-0.32254				
BC	13	104		-1.07341	0.00011	-0.17291	1.06544	0.00027	-0.43841	0.65877	0.00028	-0.41110				
BC	13	105		-1.07341	0.00011	-0.17291	1.06544	0.00027	-0.43841	0.65877	0.00028	-0.41110				
BC	13	106	415	-1.07341	0.00011	-0.17291	1.06544	0.00027	-0.43841	0.65877	0.00028	-0.41110	0.042	0.005	0.025	0.02
BC	13	201	7	-1.75097	-0.00001	-0.05994	0.08858	0.00015	-0.36372	-0.17075	-0.00048	-0.42798	0.02	0.005	0.014	0.012
BC	13	204	130	-2.18146	-0.00004	0.00825	-1.96692	-0.00003	0.01106	-1.68418	0.00007	-0.10473	0.051	0.007	0.033	0.019
BC	13	205		-2.18146	-0.00004	0.00825	-1.96692	-0.00003	0.01106	-1.68418	0.00007	-0.10473				
BC	13	206		-1.53753	0.00002	-0.07921	-1.83729	-0.00101	0.12395	-3.45303	-0.00167	0.29681				
BC	13	208		-0.44623	0.00083	-0.27177	1.80707	0.00087	-0.56041	1.45133	0.00125	-0.69118				
BC	13	300		-1.03255	0.00017	-0.17211	0.72409	0.00039	-0.42118	0.80190	0.00047	-0.46436				
BC	13	301	569	-1.03255	0.00017	-0.17211	0.72409	0.00039	-0.42118	0.80190	0.00047	-0.46436	0.048	0.006	0.025	0.027
BC	13	303	12	-1.65262	0.00009	-0.05002	1.47258	0.00041	-0.57926	1.36426	0.00055	-0.61674	0.036	0.012	0.02	0.026
BC	13	304	66	-1.45808	0.00020	-0.07714	-0.23799	0.00024	-0.14787	-0.05164	0.00035	-0.31761	0.034	0.005	0.022	0.018
BC	13	400		-0.94047	0.00015	-0.18072	1.15062	0.00031	-0.50674	0.89950	0.00037	-0.57301				
BC	13	402	2381	-0.94047	0.00015	-0.18072	1.15062	0.00031	-0.50674	0.89950	0.00037	-0.57301	0.057	0.006	0.033	0.027
BC	13	403	94	-1.85530	-0.00020	0.03228	-0.50784	0.00013	-0.21445	-1.73029	0.00015	-0.12991	0.027	0.01	0.021	0.013
BC	13	500	1318	-1.48710	-0.00004	-0.06301	-0.99796	-0.00007	-0.18779	-1.00063	-0.00024	-0.28415	0.033	0.004	0.019	0.016
BC	13	600		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	13	602		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	13	603		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	13	604		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	13	702	748	-1.36456	0.00018	-0.12536	-0.87735	-0.00020	-0.10052	0.18083	0.00042	-0.43478	0.041	0.009	0.032	0.024
BC	13	1001	108	-2.28544	0.00022	-0.05148	-0.82522	0.00056	-0.29695	-0.29501	0.00104	-0.50417	0.044	0.01	0.022	0.016
BC	13	1201	10	-1.31818	0.00039	-0.09047	-1.63074	-0.00005	-0.00670	-3.23601	-0.00183	0.19294	0.02	0.01	0.014	0.01
BC	13	1203	32	-1.91983	-0.00003	-0.00144	-1.33557	0.00003	-0.01602	-3.26516	0.00081	-0.04073	0.015	0.005	0.008	0.012
BC	13	1303	14	-1.64058	0.00002	-0.02892	-0.67447	-0.00034	-0.12014	-0.83940	-0.00120	-0.25447	0.053	0.006	0.026	0.036
BC	13	1305		-1.64058	0.00002	-0.02892	-0.67447	-0.00034	-0.12014	-0.83940	-0.00120	-0.25447				
BC	13	1308		-1.64058	0.00002	-0.02892	-0.67447	-0.00034	-0.12014	-0.83940	-0.00120	-0.25447				
BC	13	1403	25	-1.15533	0.00011	-0.10207	-1.44799	-0.00029	-0.04720	-4.71078	-0.00132	0.27291	0.018	0.007	0.013	0.008
BC	13	1802	98	-1.96747	-0.00009	0.01675	0.61014	0.00046	-0.43240	-0.67878	0.00063	-0.33985	0.027	0.006	0.022	0.016
BC	14	100		-1.22133	0.00022	-0.16059	0.47166	0.00040	-0.36295	0.48426	0.00035	-0.47520				
BC	14	101	27	-1.98201	0.00002	-0.00124	-1.20589	0.00027	-0.07945	-0.25522	0.00044	-0.29391	0.035	0.007	0.019	0.025
BC	14	104	675	-0.47353	0.00039	-0.30821	-0.30899	-0.00014	-0.22553	0.07149	0.00008	-0.39019	0.061	0.015	0.033	0.025
BC	14	105	1575	-1.22133	0.00022	-0.16059	0.47166	0.00040	-0.36295	0.48426	0.00035	-0.47520	0.062	0.009	0.034	0.029
BC	14	106	7	-1.62880	0.00108	-0.14379	-0.66939	0.00028	-0.18445	-0.80426	-0.00022	-0.17254	0.02	0.007	0.013	0.011

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
BC	14	201	51	-1.41174	0.00020	-0.11697	1.12058	0.00119	-0.53099	1.62932	0.00173	-0.76184	0.072	0.009	0.037	0.035
BC	14	204	3386	-2.13711	-0.00002	-0.01404	-1.87346	0.00005	-0.02429	-1.36311	0.00026	-0.16673	0.038	0.007	0.022	0.017
BC	14	206	19	-1.53753	0.00002	-0.07921	-1.83729	-0.00101	0.12395	-3.45303	-0.00167	0.29681	0.037	0.005	0.023	0.015
BC	14	208	94	-0.44623	0.00083	-0.27177	1.80707	0.00087	-0.56041	1.45133	0.00125	-0.69118	0.121	0.011	0.08	0.044
BC	14	300		-1.38649	0.00012	-0.09336	-0.22895	0.00011	-0.14516	0.40627	0.00040	-0.39776				
BC	14	301	14	-1.26800	0.00023	-0.14649	0.24702	0.00052	-0.35855	0.67499	0.00050	-0.45895	0.027	0.004	0.014	0.022
BC	14	303		-1.65262	0.00009	-0.05002	1.47258	0.00041	-0.57926	1.36426	0.00055	-0.61674				
BC	14	304	1912	-1.38649	0.00012	-0.09336	-0.22895	0.00011	-0.14516	0.40627	0.00040	-0.39776	0.037	0.005	0.021	0.025
BC	14	400		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
BC	14	402	824	-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346	0.076	0.005	0.044	0.034
BC	14	403	64	-1.73109	-0.00013	0.01095	-1.19772	-0.00024	-0.06300	-0.23955	0.00063	-0.42029	0.037	0.01	0.026	0.018
BC	14	500	2759	-2.32409	-0.00014	0.10912	-0.69270	0.00016	-0.11998	-0.47021	0.00002	-0.28838	0.031	0.014	0.019	0.023
BC	14	600		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	14	602		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	14	603	319	-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214	0.05	0.013	0.03	0.026
BC	14	604		-2.84114	-0.00003	0.14963	-2.13031	0.00003	0.00294	-2.28307	0.00000	-0.07214				
BC	14	702	455	-1.37078	0.00018	-0.10944	-0.21679	0.00030	-0.23982	0.42986	0.00052	-0.48340	0.035	0.008	0.023	0.022
BC	14	1001		-2.28544	0.00022	-0.05148	-0.82522	0.00056	-0.29695	-0.29501	0.00104	-0.50417				
BC	14	1201	335	-1.43040	0.00010	-0.04171	-1.77777	-0.00041	0.03829	-3.12888	-0.00098	0.11028	0.027	0.015	0.017	0.021
BC	14	1203	24	-1.60100	0.00015	-0.06790	-0.76893	0.00023	-0.13121	-2.20229	0.00007	-0.13572	0.035	0.005	0.018	0.023
BC	14	1303	134	-2.12988	-0.00031	0.07040	-0.76028	0.00005	-0.11084	-0.23555	-0.00016	-0.39153	0.04	0.009	0.021	0.029
BC	14	1305		-2.12988	-0.00031	0.07040	-0.76028	0.00005	-0.11084	-0.23555	-0.00016	-0.39153				
BC	14	1308		-2.12988	-0.00031	0.07040	-0.76028	0.00005	-0.11084	-0.23555	-0.00016	-0.39153				
BC	14	1403		-1.15533	0.00011	-0.10207	-1.44799	-0.00029	-0.04720	-4.71078	-0.00132	0.27291				
BC	14	1802		-1.96747	-0.00009	0.01675	0.61014	0.00046	-0.43240	-0.67878	0.00063	-0.33985				
BC	14	3500	5	-1.41867	-0.00187	0.00923	1.18858	0.01004	-0.86550	1.11207	0.01244	-1.04315	0.016	0.003	0.01	0.01
AB	4	101	4	-1.45747	0.00492	-0.14092	-2.53740	-0.01683	0.14495	-0.30969	0.03900	-0.82785	0.013	0.001	0.009	0.006
AB	4	105	91	-2.71136	-0.00117	0.19448	-5.11024	-0.00398	0.63364	1.44759	0.00190	-0.77621	0.013	0.01	0.015	0.01
AB	4	203		1.92005	0.00534	-0.98315	-2.99013	-0.00373	0.24658	-0.17518	0.00255	-0.58622				
AB	4	204	9	1.92005	0.00534	-0.98315	-2.99013	-0.00373	0.24658	-0.17518	0.00255	-0.58622	0.011	0.005	0.009	0.002
AB	4	216		1.92005	0.00534	-0.98315	-2.99013	-0.00373	0.24658	-0.17518	0.00255	-0.58622				
AB	4	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	4	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
AB	4	601		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	4	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	4	1200		-1.42342	-0.00027	-0.03020	-4.92747	-0.00259	0.54481	-3.50320	-0.00062	0.09892				
AB	4	1201	24	-1.42342	-0.00027	-0.03020	-4.92747	-0.00259	0.54481	-3.50320	-0.00062	0.09892	0.008	0.011	0.009	0.009
AB	4	1203	4	-1.20848	0.00017	-0.11248	-1.86683	-0.00050	0.10630	-9.50939	-0.00563	1.31981	0.009	0.001	0.009	0.001
AB	4	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	5	101		-1.35108	-0.00045	-0.09348	-1.12677	-0.00054	-0.11802	-0.74079	-0.00214	-0.14597				
AB	5	105		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
AB	5	203		-1.90568	-0.00289	0.00111	-1.99089	-0.00100	-0.04115	-1.61900	-0.00205	-0.18528				
AB	5	204		-1.72707	-0.00006	-0.09404	-1.84906	-0.00029	-0.08748	-1.88402	-0.00160	-0.07144				
AB	5	216		-1.70039	-0.00002	-0.10143	-1.85085	-0.00029	-0.08728	-1.88046	-0.00152	-0.07735				
AB	5	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	5	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
AB	5	601		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	5	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	5	1200		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
AB	5	1201		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
AB	5	1203		-2.31951	-0.00242	0.24672	-2.17145	-0.00103	0.14399	0.38201	0.00530	-0.92292				
AB	5	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	6	101		-1.35108	-0.00045	-0.09348	-1.12677	-0.00054	-0.11802	-0.74079	-0.00214	-0.14597				
AB	6	105		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
AB	6	203		-1.90568	-0.00289	0.00111	-1.99089	-0.00100	-0.04115	-1.61900	-0.00205	-0.18528				
AB	6	204		-1.72707	-0.00006	-0.09404	-1.84906	-0.00029	-0.08748	-1.88402	-0.00160	-0.07144				
AB	6	216		-1.70039	-0.00002	-0.10143	-1.85085	-0.00029	-0.08728	-1.88046	-0.00152	-0.07735				
AB	6	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	6	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
AB	6	601		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	6	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	6	1200		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
AB	6	1201		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
AB	6	1203		-2.31951	-0.00242	0.24672	-2.17145	-0.00103	0.14399	0.38201	0.00530	-0.92292				
AB	6	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	9	101	79	-1.35108	-0.00045	-0.09348	-1.12677	-0.00054	-0.11802	-0.74079	-0.00214	-0.14597	0.028	0.006	0.012	0.018
AB	9	104		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
AB	9	105	409	-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583	0.026	0.015	0.019	0.018
AB	9	109		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
AB	9	203	27	-1.90568	-0.00289	0.00111	-1.99089	-0.00100	-0.04115	-1.61900	-0.00205	-0.18528	0.02	0.013	0.01	0.009
AB	9	204	691	-1.72707	-0.00006	-0.09404	-1.84906	-0.00029	-0.08748	-1.88402	-0.00160	-0.07144	0.031	0.01	0.022	0.013
AB	9	216		-1.70039	-0.00002	-0.10143	-1.85085	-0.00029	-0.08728	-1.88046	-0.00152	-0.07735				
AB	9	302	40	-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726	0.034	0.01	0.02	0.019
AB	9	304		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
AB	9	305		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	9	306		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	9	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
AB	9	600		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	9	601		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	9	602	25	-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111	0.021	0.006	0.015	0.019
AB	9	604		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	9	1150		-1.45271	0.00018	-0.14111	-1.39913	-0.00019	-0.13136	-1.19791	-0.00109	-0.18426				
AB	9	1200		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
AB	9	1201	242	-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141	0.02	0.02	0.022	0.01
AB	9	1203	32	-2.31951	-0.00242	0.24672	-2.17145	-0.00103	0.14399	0.38201	0.00530	-0.92292	0.045	0.016	0.044	0.01
AB	9	1303	3	-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641	0.023	0.004	0.027	0.008
AB	9	1404		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	9	1500		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	9	1550		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	10	101		-1.35108	-0.00045	-0.09348	-1.12677	-0.00054	-0.11802	-0.74079	-0.00214	-0.14597				
AB	10	104		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
AB	10	105		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
AB	10	203		-1.90568	-0.00289	0.00111	-1.99089	-0.00100	-0.04115	-1.61900	-0.00205	-0.18528				
AB	10	204		-1.72707	-0.00006	-0.09404	-1.84906	-0.00029	-0.08748	-1.88402	-0.00160	-0.07144				
AB	10	216		-1.70039	-0.00002	-0.10143	-1.85085	-0.00029	-0.08728	-1.88046	-0.00152	-0.07735				
AB	10	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	10	304		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	10	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
AB	10	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	10	604		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	10	1150		-1.45271	0.00018	-0.14111	-1.39913	-0.00019	-0.13136	-1.19791	-0.00109	-0.18426				
AB	10	1200		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
AB	10	1201		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
AB	10	1203		-2.31951	-0.00242	0.24672	-2.17145	-0.00103	0.14399	0.38201	0.00530	-0.92292				
AB	10	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	10	1550		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	14	101		-1.35108	-0.00045	-0.09348	-1.12677	-0.00054	-0.11802	-0.74079	-0.00214	-0.14597				
AB	14	104	9	0.61366	0.00099	-0.51941	0.56233	0.00132	-0.49655	-0.19861	0.00013	-0.35062	0.014	0.006	0.009	0.004
AB	14	105		0.61366	0.00099	-0.51941	0.56233	0.00132	-0.49655	-0.19861	0.00013	-0.35062				
AB	14	109		0.61366	0.00099	-0.51941	0.56233	0.00132	-0.49655	-0.19861	0.00013	-0.35062				
AB	14	201		-1.41174	0.00020	-0.11697	1.12058	0.00119	-0.53099	1.62932	0.00173	-0.76184				
AB	14	203		-1.63412	0.00000	-0.10448	-1.83368	0.00256	-0.24539	-1.61670	0.00141	-0.24429				
AB	14	204	40	-1.63412	0.00000	-0.10448	-1.83368	0.00256	-0.24539	-1.61670	0.00141	-0.24429	0.026	0.004	0.017	0.011
AB	14	216		-1.63412	0.00000	-0.10448	-1.83368	0.00256	-0.24539	-1.61670	0.00141	-0.24429				
AB	14	217		-1.63412	0.00000	-0.10448	-1.83368	0.00256	-0.24539	-1.61670	0.00141	-0.24429				
AB	14	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	14	304		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	14	306		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
AB	14	402		-1.00442	0.00015	-0.16775	1.04763	0.00034	-0.47792	1.04120	0.00026	-0.59346				
AB	14	500	9	-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347	0.025	0.007	0.015	0.015
AB	14	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	14	604		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
AB	14	702		-1.37078	0.00018	-0.10944	-0.21679	0.00030	-0.23982	0.42986	0.00052	-0.48340				
AB	14	1150		-1.78547	0.00051	-0.07648	-4.05405	0.00044	0.34907	-2.73276	0.00018	0.06545				
AB	14	1200		-1.88956	-0.00093	0.11189	-3.82420	-0.00365	0.56050	-3.24083	-0.00318	0.14834				
AB	14	1201	9	-1.88956	-0.00093	0.11189	-3.82420	-0.00365	0.56050	-3.24083	-0.00318	0.14834	0.037	0.004	0.032	0.008
AB	14	1203		-2.31951	-0.00242	0.24672	-2.17145	-0.00103	0.14399	0.38201	0.00530	-0.92292				
AB	14	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	14	1404		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
AB	14	1550		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
SK	5	101		-2.64732	-0.00177	0.20622	-1.41654	-0.00064	-0.12513	-0.90393	-0.00275	-0.12666				
SK	5	105		-2.17521	-0.00052	0.08564	3.03766	0.00105	-0.90564	2.55859	0.00060	-0.89584				
SK	5	203		-0.89580	0.00284	-0.36581	-2.03143	-0.00036	-0.05584	-1.74204	-0.00199	-0.09195				
SK	5	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
SK	5	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
SK	5	1201		-1.44016	-0.00047	-0.00527	-1.77683	-0.00191	0.06000	0.09540	0.00315	-0.62204				
SK	5	1303		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
SK	6	101	5	-2.64732	-0.00177	0.20622	-1.41654	-0.00064	-0.12513	-0.90393	-0.00275	-0.12666	0.002	0.001	0.002	0.002
SK	6	105		-2.17521	-0.00052	0.08564	3.03766	0.00105	-0.90564	2.55859	0.00060	-0.89584				
SK	6	203	22	-0.89580	0.00284	-0.36581	-2.03143	-0.00036	-0.05584	-1.74204	-0.00199	-0.09195	0.011	0.004	0.011	0.003
SK	6	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
SK	6	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
SK	6	701		-0.86946	0.00049	-0.21193	-5.52074	-0.00350	0.93676	-6.38364	-0.00424	1.09576				
SK	6	1201	8	-1.44016	-0.00047	-0.00527	-1.77683	-0.00191	0.06000	0.09540	0.00315	-0.62204	0.007	0.003	0.004	0.008
SK	6	1203		-1.44016	-0.00047	-0.00527	-1.77683	-0.00191	0.06000	0.09540	0.00315	-0.62204				
SK	6	1303		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
SK	6	1404		-1.86520	-0.00038	0.01566	-1.42968	0.00143	-0.01715	-1.93201	-0.00145	-0.08559				
SK	6	1500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
SK	9	101	215	-1.06237	-0.00029	-0.13618	-0.20075	-0.00106	-0.26874	0.00036	-0.00245	-0.25771	0.026	0.007	0.013	0.017
SK	9	105	353	-2.17521	-0.00052	0.08564	3.03766	0.00105	-0.90564	2.55859	0.00060	-0.89584	0.026	0.016	0.023	0.013
SK	9	107		-1.06237	-0.00029	-0.13618	-0.20075	-0.00106	-0.26874	0.00036	-0.00245	-0.25771				
SK	9	203	228	-0.44277	-0.00031	-0.34969	-0.03556	0.00044	-0.46694	0.79645	0.00009	-0.68375	0.039	0.008	0.021	0.015
SK	9	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
SK	9	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
SK	9	701		-0.86946	0.00049	-0.21193	-5.52074	-0.00350	0.93676	-6.38364	-0.00424	1.09576				
SK	9	1201	388	-0.58199	-0.00017	-0.14142	-2.14470	-0.00060	0.02495	-1.31718	0.00052	-0.38970	0.023	0.019	0.026	0.014
SK	9	1203	7	-2.12561	-0.00174	0.19112	-1.53114	0.00065	-0.05775	-3.43772	-0.00009	0.11738	0.028	0.023	0.034	0.018
SK	9	1303		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
SK	9	1404		-1.86520	-0.00038	0.01566	-1.42968	0.00143	-0.01715	-1.93201	-0.00145	-0.08559				
SK	9	1500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
SK	9	2201		-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547				
SK	9	3405		-1.80450	-0.00079	0.00841	-2.34347	-0.00115	0.18201	-4.39804	-0.00425	0.45335				
SK	10	101		-1.06237	-0.00029	-0.13618	-0.20075	-0.00106	-0.26874	0.00036	-0.00245	-0.25771				
SK	10	105		-2.17521	-0.00052	0.08564	3.03766	0.00105	-0.90564	2.55859	0.00060	-0.89584				
SK	10	203		-0.44277	-0.00031	-0.34969	-0.03556	0.00044	-0.46694	0.79645	0.00009	-0.68375				
SK	10	204		-0.44277	-0.00031	-0.34969	-0.03556	0.00044	-0.46694	0.79645	0.00009	-0.68375				
SK	10	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
SK	10	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
SK	10	1201		-0.58199	-0.00017	-0.14142	-2.14470	-0.00060	0.02495	-1.31718	0.00052	-0.38970				
SK	10	1203		-2.12561	-0.00174	0.19112	-1.53114	0.00065	-0.05775	-3.43772	-0.00009	0.11738				
SK	10	1303		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
SK	10	1404		-1.86520	-0.00038	0.01566	-1.42968	0.00143	-0.01715	-1.93201	-0.00145	-0.08559				
SK	10	2201		-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547				
SK	10	3405		-1.80450	-0.00079	0.00841	-2.34347	-0.00115	0.18201	-4.39804	-0.00425	0.45335				
MB	3	101		-1.40878	0.00046	-0.12404	-1.50184	-0.00197	-0.04272	-0.13822	-0.00152	-0.32029				
MB	3	105		-1.75475	-0.00193	0.02426	-0.42225	-0.00341	-0.16659	1.10215	-0.00276	-0.47527				
MB	3	203		-1.74535	-0.00041	-0.09749	-1.96182	-0.00246	0.05115	-1.11188	-0.00230	-0.17752				
MB	3	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
MB	3	1201		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	3	1203		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	3	1308		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
MB	5	101		-1.40878	0.00046	-0.12404	-1.50184	-0.00197	-0.04272	-0.13822	-0.00152	-0.32029				
MB	5	105		-1.75475	-0.00193	0.02426	-0.42225	-0.00341	-0.16659	1.10215	-0.00276	-0.47527				
MB	5	203		-1.74535	-0.00041	-0.09749	-1.96182	-0.00246	0.05115	-1.11188	-0.00230	-0.17752				
MB	5	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
MB	5	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
MB	5	1201		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	5	1203		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	5	1308		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
MB	6	101	43	-1.40878	0.00046	-0.12404	-1.50184	-0.00197	-0.04272	-0.13822	-0.00152	-0.32029	0.029	0.007	0.016	0.019
MB	6	105	9	-1.75475	-0.00193	0.02426	-0.42225	-0.00341	-0.16659	1.10215	-0.00276	-0.47527	0.037	0.013	0.015	0.03
MB	6	203	88	-1.74535	-0.00041	-0.09749	-1.96182	-0.00246	0.05115	-1.11188	-0.00230	-0.17752	0.04	0.006	0.027	0.023
MB	6	209	20	-1.23902	-0.00019	-0.17449	-0.52719	-0.00264	-0.12160	0.71769	-0.00158	-0.39858	0.046	0.006	0.023	0.043
MB	6	211	2	-1.27216	-0.00067	-0.12924	-0.07467	-0.00119	-0.26562	-0.74269	-0.00105	-0.29240	0.01	0.002	0.006	0.002
MB	6	302	7	-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074	0.038	0.01	0.025	0.025
MB	6	602	22	-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878	0.029	0.011	0.026	0.019
MB	6	701	8	-0.86946	0.00049	-0.21193	-5.52074	-0.00350	0.93676	-6.38364	-0.00424	1.09576	0.036	0.01	0.02	0.025
MB	6	1201	34	-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765	0.038	0.013	0.011	0.046
MB	6	1203		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	6	1205		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	6	1308		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
MB	6	1404		-1.84638	-0.00059	-0.01328	-1.47069	0.00016	0.04924	-2.04427	-0.00230	-0.11974				
MB	6	1500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
MB	6	2104		-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450				
MB	6	2201		-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547				
MB	6	3400		-1.80450	-0.00079	0.00841	-2.34347	-0.00115	0.18201	-4.39804	-0.00425	0.45335				
MB	9	101	52	-0.91774	-0.00016	-0.16789	-0.72635	-0.00196	-0.13529	0.67425	-0.00081	-0.44736	0.04	0.01	0.023	0.029
MB	9	105	20	-1.29543	-0.00020	-0.10159	-0.19265	-0.00198	-0.14842	0.95907	0.00008	-0.52062	0.034	0.015	0.033	0.04
MB	9	203	39	-0.94963	-0.00299	-0.12650	-1.91715	-0.00674	0.20692	-0.92588	-0.00721	-0.04192	0.065	0.011	0.031	0.037
MB	9	209		-1.23902	-0.00019	-0.17449	-0.52719	-0.00264	-0.12160	0.71769	-0.00158	-0.39858				
MB	9	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
MB	9	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
MB	9	701		-0.86946	0.00049	-0.21193	-5.52074	-0.00350	0.93676	-6.38364	-0.00424	1.09576				
MB	9	1201	32	-0.86601	0.00002	-0.08542	-1.57667	-0.00476	0.05603	-0.21520	-0.00411	-0.45986	0.053	0.016	0.038	0.039
MB	9	1203		-0.86601	0.00002	-0.08542	-1.57667	-0.00476	0.05603	-0.21520	-0.00411	-0.45986				
MB	9	1205		-0.86601	0.00002	-0.08542	-1.57667	-0.00476	0.05603	-0.21520	-0.00411	-0.45986				
MB	9	1303	4	-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311	0.025	0.007	0.038	0.018
MB	9	1308		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
MB	9	1404		-1.84638	-0.00059	-0.01328	-1.47069	0.00016	0.04924	-2.04427	-0.00230	-0.11974				
MB	9	1500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
MB	9	2104		-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450				
MB	9	2201		-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
MB	9	3000		-1.28991	0.00033	-0.11208	-1.54606	-0.00024	0.04570	-2.46851	-0.00118	-0.07693				
MB	9	3400		-1.80450	-0.00079	0.00841	-2.34347	-0.00115	0.18201	-4.39804	-0.00425	0.45335				
MB	9	3500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
MB	10	101		-1.40878	0.00046	-0.12404	-1.50184	-0.00197	-0.04272	-0.13822	-0.00152	-0.32029				
MB	10	105		-1.29543	-0.00020	-0.10159	-0.19265	-0.00198	-0.14842	0.95907	0.00008	-0.52062				
MB	10	203		-0.94963	-0.00299	-0.12650	-1.91715	-0.00674	0.20692	-0.92588	-0.00721	-0.04192				
MB	10	209		-1.23902	-0.00019	-0.17449	-0.52719	-0.00264	-0.12160	0.71769	-0.00158	-0.39858				
MB	10	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
MB	10	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
MB	10	701		-0.86946	0.00049	-0.21193	-5.52074	-0.00350	0.93676	-6.38364	-0.00424	1.09576				
MB	10	1201		-0.86601	0.00002	-0.08542	-1.57667	-0.00476	0.05603	-0.21520	-0.00411	-0.45986				
MB	10	1203		-0.86601	0.00002	-0.08542	-1.57667	-0.00476	0.05603	-0.21520	-0.00411	-0.45986				
MB	10	1205		-0.86601	0.00002	-0.08542	-1.57667	-0.00476	0.05603	-0.21520	-0.00411	-0.45986				
MB	10	1308		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
MB	10	1404		-1.84638	-0.00059	-0.01328	-1.47069	0.00016	0.04924	-2.04427	-0.00230	-0.11974				
MB	10	1500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
MB	10	2104		-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450				
MB	10	2201		-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547				
MB	10	3000		-1.28991	0.00033	-0.11208	-1.54606	-0.00024	0.04570	-2.46851	-0.00118	-0.07693				
MB	10	3400		-1.80450	-0.00079	0.00841	-2.34347	-0.00115	0.18201	-4.39804	-0.00425	0.45335				
MB	10	3500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
MB	15	101		-1.40878	0.00046	-0.12404	-1.50184	-0.00197	-0.04272	-0.13822	-0.00152	-0.32029				
MB	15	103		-1.75475	-0.00193	0.02426	-0.42225	-0.00341	-0.16659	1.10215	-0.00276	-0.47527				
MB	15	105		-1.75475	-0.00193	0.02426	-0.42225	-0.00341	-0.16659	1.10215	-0.00276	-0.47527				
MB	15	203		-1.74535	-0.00041	-0.09749	-1.96182	-0.00246	0.05115	-1.11188	-0.00230	-0.17752				
MB	15	302		-1.79458	-0.00028	0.00814	-2.44010	-0.00293	0.28394	0.40730	-0.00056	-0.41074				
MB	15	602		-1.10257	0.00059	-0.21380	-0.92095	-0.00211	-0.10987	-0.24057	-0.00004	-0.38878				
MB	15	1201		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	15	1203		-1.27847	0.00008	-0.06456	-1.37461	-0.00079	-0.04932	-0.19936	-0.00116	-0.41765				
MB	15	1308		-1.74669	-0.00227	0.04072	-1.31690	-0.00303	-0.01724	-1.80603	-0.00651	0.00311				
ON	6	101	384	-1.48090	0.00037	-0.10284	-0.96078	-0.00006	-0.19170	-0.10049	-0.00170	-0.32254	0.03	0.007	0.013	0.024
ON	6	105	19	-1.43124	0.00013	-0.10848	-1.32511	-0.00025	-0.06160	0.85644	0.00113	-0.60321	0.032	0.009	0.018	0.034
ON	6	202	20	-1.06033	0.00008	-0.15101	2.42123	0.00155	-0.78868	1.45028	0.00106	-0.74014	0.02	0.006	0.017	0.01
ON	6	203	465	-1.46008	0.00068	-0.18889	-1.23536	0.00003	-0.18253	-0.73586	-0.00061	-0.32412	0.023	0.009	0.013	0.012
ON	6	209	28	-1.55841	-0.00078	-0.08339	-0.84791	0.00013	-0.19723	0.41823	-0.00044	-0.43352	0.022	0.007	0.016	0.016
ON	6	302	30	-1.72065	-0.00001	-0.00668	-0.69577	0.00084	-0.24070	0.97500	0.00270	-0.66754	0.05	0.009	0.033	0.035
ON	6	401		-1.39146	0.00040	-0.09639	-1.54477	-0.00032	0.05513	-1.20696	0.00029	-0.25361				
ON	6	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
ON	6	701	8	-1.74372	-0.00023	-0.02115	-1.36790	-0.00090	0.03667	0.16417	-0.00082	-0.31008	0.02	0.004	0.012	0.026
ON	6	1200		-1.44534	0.00015	-0.04135	-1.14566	0.00021	-0.14569	0.19552	0.00061	-0.60087				
ON	6	1201	320	-1.44534	0.00015	-0.04135	-1.14566	0.00021	-0.14569	0.19552	0.00061	-0.60087	0.019	0.01	0.007	0.02
ON	6	1203	10	-1.07974	0.00027	-0.15239	-1.15759	0.00016	-0.09906	3.89780	0.00365	-1.48324	0.006	0.011	0.005	0.007
ON	6	1303	63	-1.65610	-0.00021	-0.02113	-1.70783	-0.00005	0.00500	-0.13696	0.00215	-0.54706	0.039	0.008	0.024	0.038
ON	6	1400		-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561				
ON	6	1401		-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561				
ON	6	4500		-1.84638	-0.00059	-0.01328	-1.47069	0.00016	0.04924	-2.04427	-0.00230	-0.11974				
ON	6	5500		-1.84638	-0.00059	-0.01328	-1.47069	0.00016	0.04924	-2.04427	-0.00230	-0.11974				
ON	8	101		-1.48090	0.00037	-0.10284	-0.96078	-0.00006	-0.19170	-0.10049	-0.00170	-0.32254				
ON	8	105		-1.43124	0.00013	-0.10848	-1.32511	-0.00025	-0.06160	0.85644	0.00113	-0.60321				
ON	8	202		-1.06033	0.00008	-0.15101	2.42123	0.00155	-0.78868	1.45028	0.00106	-0.74014				
ON	8	203		-1.46008	0.00068	-0.18889	-1.23536	0.00003	-0.18253	-0.73586	-0.00061	-0.32412				
ON	8	209		-1.55841	-0.00078	-0.08339	-0.84791	0.00013	-0.19723	0.41823	-0.00044	-0.43352				
ON	8	302		-1.72065	-0.00001	-0.00668	-0.69577	0.00084	-0.24070	0.97500	0.00270	-0.66754				
ON	8	401		-1.50521	0.00036	-0.07920	-1.30240	-0.00020	-0.00765	-1.81564	-0.00037	-0.08995				
ON	8	602		-2.10917	-0.00106	0.01693	-2.41482	-0.00179	0.14874	-1.88354	0.00057	-0.12587				
ON	8	701		-1.74372	-0.00023	-0.02115	-1.36790	-0.00090	0.03667	0.16417	-0.00082	-0.31008				
ON	8	1200		-1.52524	0.00000	-0.02236	-1.92886	-0.00025	0.07080	-2.45442	0.00050	-0.09873				
ON	8	1303		-1.65610	-0.00021	-0.02113	-1.70783	-0.00005	0.00500	-0.13696	0.00215	-0.54706				
ON	8	1401		-1.64273	-0.00060	-0.05592	-1.08284	0.00055	-0.05552	-1.30060	-0.00022	-0.39194				
ON	8	4500		-1.80484	-0.00080	-0.01389	-0.91025	0.00143	-0.12666	-2.64397	-0.00271	0.01609				
ON	8	5500		-1.80484	-0.00080	-0.01389	-0.91025	0.00143	-0.12666	-2.64397	-0.00271	0.01609				
ON	15	101		-1.48090	0.00037	-0.10284	-0.96078	-0.00006	-0.19170	-0.10049	-0.00170	-0.32254				
ON	15	105		-1.43124	0.00013	-0.10848	-1.32511	-0.00025	-0.06160	0.85644	0.00113	-0.60321				
ON	15	202		-1.06033	0.00008	-0.15101	2.42123	0.00155	-0.78868	1.45028	0.00106	-0.74014				
ON	15	203		-1.46008	0.00068	-0.18889	-1.23536	0.00003	-0.18253	-0.73586	-0.00061	-0.32412				
ON	15	209		-1.55841	-0.00078	-0.08339	-0.84791	0.00013	-0.19723	0.41823	-0.00044	-0.43352				
ON	15	302		-1.72065	-0.00001	-0.00668	-0.69577	0.00084	-0.24070	0.97500	0.00270	-0.66754				
ON	15	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
ON	15	701		-1.74372	-0.00023	-0.02115	-1.36790	-0.00090	0.03667	0.16417	-0.00082	-0.31008				
ON	15	1200		-1.44534	0.00015	-0.04135	-1.14566	0.00021	-0.14569	0.19552	0.00061	-0.60087				
ON	15	1303		-1.65610	-0.00021	-0.02113	-1.70783	-0.00005	0.00500	-0.13696	0.00215	-0.54706				
ON	15	1400		-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561				
ON	15	4500		-1.84638	-0.00059	-0.01328	-1.47069	0.00016	0.04924	-2.04427	-0.00230	-0.11974				
ON	15	5500		-1.84638	-0.00059	-0.01328	-1.47069	0.00016	0.04924	-2.04427	-0.00230	-0.11974				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
QC	1	101		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
QC	1	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
QC	1	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
QC	1	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
QC	1	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
QC	1	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
QC	1	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
QC	1	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
QC	2	101		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
QC	2	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
QC	2	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
QC	2	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
QC	2	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
QC	2	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
QC	2	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
QC	2	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
QC	3	101		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
QC	3	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
QC	3	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
QC	3	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
QC	3	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
QC	3	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
QC	3	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
QC	3	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
QC	5	101	75	-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268	0.024	0.003	0.013	0.015
QC	5	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
QC	5	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
QC	5	202		-1.76957	-0.00012	-0.01653	-1.64837	-0.00024	0.03517	-0.70974	0.00050	-0.33956				
QC	5	203		-2.01102	0.00021	-0.05152	-1.50322	0.00058	-0.11218	-1.65606	-0.00069	-0.11654				
QC	5	209		-2.11629	-0.00047	0.01330	-1.31833	-0.00036	-0.05929	-0.60505	0.00069	-0.33018				
QC	5	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
QC	5	401		-1.39146	0.00040	-0.09639	-1.54477	-0.00032	0.05513	-1.20696	0.00029	-0.25361				
QC	5	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
QC	5	701		-1.89869	-0.00024	0.00738	-1.45972	0.00002	0.01600	-1.14471	0.00043	-0.18526				
QC	5	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
QC	5	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
QC	5	1211		-1.41288	0.00018	-0.05249	-1.56218	-0.00010	-0.02285	-1.90284	-0.00146	-0.11592				
QC	5	1301		-1.90021	-0.00019	0.00221	-0.93355	0.00068	-0.03877	-2.01874	-0.00060	-0.12468				
QC	5	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
QC	5	1401		-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561				
QC	5	1405		-1.88114	-0.00041	0.00071	-1.47983	0.00001	0.03383	-2.18037	-0.00132	-0.06320				
QC	5	1550		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
QC	6	101	19331	-1.79283	-0.00008	-0.02546	-1.36208	0.00002	-0.08563	-0.85391	-0.00042	-0.20122	0.023	0.006	0.009	0.02
QC	6	102	557	-1.84252	-0.00045	-0.00527	-1.37406	0.00127	-0.08434	-1.79284	-0.00040	-0.06386	0.016	0.01	0.028	0.016
QC	6	103		-1.84252	-0.00045	-0.00527	-1.37406	0.00127	-0.08434	-1.79284	-0.00040	-0.06386				
QC	6	105	1722	-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676	0.032	0.009	0.02	0.032
QC	6	107		-1.84252	-0.00045	-0.00527	-1.37406	0.00127	-0.08434	-1.79284	-0.00040	-0.06386				
QC	6	202	1194	-1.76957	-0.00012	-0.01653	-1.64837	-0.00024	0.03517	-0.70974	0.00050	-0.33956	0.022	0.009	0.024	0.015
QC	6	203	3754	-2.01102	0.00021	-0.05152	-1.50322	0.00058	-0.11218	-1.65606	-0.00069	-0.11654	0.025	0.008	0.016	0.014
QC	6	209	174	-2.11629	-0.00047	0.01330	-1.31833	-0.00036	-0.05929	-0.60505	0.00069	-0.33018	0.025	0.011	0.016	0.021
QC	6	211		-2.11629	-0.00047	0.01330	-1.31833	-0.00036	-0.05929	-0.60505	0.00069	-0.33018				
QC	6	302	9928	-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376	0.022	0.008	0.02	0.026
QC	6	401	427	-1.39146	0.00040	-0.09639	-1.54477	-0.00032	0.05513	-1.20696	0.00029	-0.25361	0.015	0.008	0.018	0.015
QC	6	602	288	-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548	0.027	0.009	0.015	0.018
QC	6	701	1874	-1.89869	-0.00024	0.00738	-1.45972	0.00002	0.01600	-1.14471	0.00043	-0.18526	0.017	0.007	0.024	0.02
QC	6	1201	5559	-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779	0.015	0.011	0.011	0.016
QC	6	1203	166	-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005	0.017	0.013	0.009	0.012
QC	6	1205		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
QC	6	1206	574	-1.10428	0.00029	-0.11239	-2.07261	-0.00059	0.10131	-1.89611	-0.00118	-0.15386	0.012	0.014	0.019	0.012
QC	6	1211		-1.41288	0.00018	-0.05249	-1.56218	-0.00010	-0.02285	-1.90284	-0.00146	-0.11592				
QC	6	1301	3518	-1.90021	-0.00019	0.00221	-0.93355	0.00068	-0.03877	-2.01874	-0.00060	-0.12468	0.02	0.006	0.027	0.012
QC	6	1303	10360	-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026	0.021	0.009	0.026	0.016
QC	6	1304	8	-1.82275	0.00000	-0.00367	-2.43138	-0.00621	0.24245	-3.37261	-0.00856	0.25507	0.02	0.003	0.008	0.015
QC	6	1401	3925	-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561	0.013	0.01	0.016	0.011
QC	6	1405	1907	-1.88114	-0.00041	0.00071	-1.47983	0.00001	0.03383	-2.18037	-0.00132	-0.06320	0.013	0.01	0.021	0.014
QC	6	1406	4	2.38146	0.01040	-1.18824	16.37390	0.07454	-5.33998	4.68302	0.01345	-1.95434	0.006	0.002	0.007	0.002
QC	6	1410	5	-2.00568	-0.00468	0.07437	2.87947	0.02878	-1.34805	-7.19542	-0.02497	1.42328	0.016	0.007	0.016	0.005
QC	6	1550		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
QC	6	1601		-1.14437	0.00148	-0.21289	-0.54650	0.00357	-0.24153	-1.15445	0.00561	-0.53307				
QC	6	1701	3	-3.66574	-0.00364	0.47409	2.54250	0.00839	-0.91773	4.28020	0.00816	-1.68473	0	0	0	0
QC	6	1800	4	-4.37426	-0.07210	1.01963	-5.64261	-0.13092	2.07864	6.05924	0.33279	-4.96474	0.022	0.005	0.005	0.014
QC	6	1900	18	-1.81817	-0.00102	0.00750	-1.51062	0.00228	0.01114	-2.22911	0.00012	-0.09528	0.018	0.006	0.023	0.011
QC	6	2000	502	-2.23522	-0.00055	0.00469	-1.38733	-0.00014	0.04913	-2.38719	-0.00063	-0.15867	0.014	0.009	0.014	0.006
QC	6	2101		-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
QC	6	2102		-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450				
QC	6	2104		-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450				
QC	6	2108	349	-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450	0.018	0.011	0.029	0.01
QC	6	2201	6	-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547	0.004	0.006	0.004	0.01
QC	6	2202		-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547				
QC	6	2203		-2.70354	-0.00322	0.24279	-1.72586	-0.00431	0.18239	-0.95464	0.00230	-0.49547				
QC	6	2801	22	-1.95861	-0.00043	0.01617	-1.77851	0.00141	0.05661	-3.45725	-0.00563	0.24358	0.021	0.012	0.021	0.01
QC	6	2802	151	-4.10034	-0.00685	0.53653	-1.94046	0.00066	0.09940	-1.72251	0.00270	-0.18476	0.021	0.015	0.018	0.013
QC	6	3000	100	-1.28991	0.00033	-0.11208	-1.54606	-0.00024	0.04570	-2.46851	-0.00118	-0.07693	0.012	0.01	0.017	0.008
QC	6	3401	13	-1.76878	-0.00072	-0.00652	-1.74198	-0.00054	0.13045	-3.10639	-0.00243	0.06549	0.017	0.008	0.022	0.005
QC	6	3402	224	-1.80450	-0.00079	0.00841	-2.34347	-0.00115	0.18201	-4.39804	-0.00425	0.45335	0.039	0.01	0.026	0.033
QC	6	3403		-1.80450	-0.00079	0.00841	-2.34347	-0.00115	0.18201	-4.39804	-0.00425	0.45335				
QC	6	3500	114	-1.26404	0.00073	-0.07814	-1.62832	-0.00118	0.01130	-2.39182	-0.00379	-0.01180	0.018	0.016	0.014	0.017
QC	6	3960	13	-3.78870	-0.00239	0.38147	-1.71833	0.00341	-0.03303	-2.70549	-0.00573	0.24110	0.019	0.014	0.008	0.007
QC	7	101	1385	-1.77639	0.00033	-0.04331	-0.78620	0.00031	-0.11304	-1.05792	-0.00076	-0.11614	0.027	0.009	0.013	0.022
QC	7	102	650	-1.29357	0.00016	-0.12270	-1.78699	0.00062	0.00906	-1.54887	0.00023	-0.14620	0.019	0.013	0.03	0.015
QC	7	103	16	-1.82372	0.00236	-0.16116	-2.21874	0.00230	0.02370	-2.80484	0.00068	0.12338	0.03	0.011	0.015	0.009
QC	7	105	1113	-1.93203	0.00001	-0.00035	-1.01300	0.00030	-0.07481	-1.27903	0.00014	-0.15002	0.029	0.012	0.027	0.022
QC	7	107		-1.29357	0.00016	-0.12270	-1.78699	0.00062	0.00906	-1.54887	0.00023	-0.14620				
QC	7	202	40	-2.19170	-0.00080	0.08926	-2.10439	-0.00108	0.22244	-1.91482	-0.00047	-0.05665	0.045	0.009	0.04	0.015
QC	7	203	19	-1.88451	0.00009	-0.09934	-1.82842	0.00082	0.00836	-3.09904	0.00047	0.12738	0.028	0.013	0.016	0.013
QC	7	209	28	-3.16563	-0.00270	0.29641	-1.89966	-0.00176	0.06447	-2.30019	-0.00256	0.05392	0.024	0.009	0.017	0.01
QC	7	211	6	-3.43384	-0.01377	0.52687	-13.47716	-0.08952	4.36034	-5.56283	-0.03443	1.42460	0.094	0.007	0.083	0.015
QC	7	302	6143	-1.49892	0.00014	-0.05766	-1.54262	-0.00013	0.02190	-1.66095	0.00015	-0.11238	0.02	0.011	0.025	0.018
QC	7	401	105	-1.67132	0.00016	-0.04631	-1.15311	0.00029	-0.04049	-1.32825	0.00076	-0.22351	0.017	0.009	0.021	0.014
QC	7	602	107	-1.91754	-0.00024	-0.02643	-1.09894	0.00098	-0.14300	-2.85136	-0.00207	0.12256	0.033	0.012	0.029	0.016
QC	7	701	1781	-1.68046	-0.00010	-0.02462	-1.56037	-0.00050	0.02574	-1.73866	-0.00005	-0.05827	0.025	0.009	0.021	0.02
QC	7	1201	1905	-1.37662	0.00018	-0.05705	-1.69438	0.00045	0.04831	-2.87956	-0.00132	0.05437	0.014	0.014	0.022	0.012
QC	7	1203	257	-1.26665	-0.00005	-0.06801	-2.01027	-0.00065	0.13961	-2.51825	-0.00110	-0.00210	0.028	0.013	0.031	0.011
QC	7	1205		-1.26665	-0.00005	-0.06801	-2.01027	-0.00065	0.13961	-2.51825	-0.00110	-0.00210				
QC	7	1206	48	-1.18290	0.00035	-0.08993	-2.56345	-0.00081	0.22998	-1.32737	0.00116	-0.36356	0.014	0.018	0.021	0.014
QC	7	1211		-1.36680	0.00015	-0.05737	-1.81117	0.00011	0.08074	-2.77363	-0.00115	0.02982				
QC	7	1301	1182	-1.82381	-0.00004	-0.01731	-0.64684	0.00012	-0.08007	-2.20654	-0.00111	-0.08979	0.02	0.007	0.02	0.01
QC	7	1303	1778	-1.81762	-0.00013	-0.00121	-1.15814	0.00095	-0.05346	-2.50011	-0.00104	-0.00606	0.02	0.011	0.026	0.011
QC	7	1304	38	-1.78469	0.00037	-0.02051	-1.63969	-0.00040	0.03661	-3.74549	-0.00647	0.31097	0.015	0.01	0.015	0.011
QC	7	1401	2304	-1.92908	0.00029	-0.03955	-0.85115	-0.00105	-0.03662	-2.09616	-0.00223	-0.13381	0.024	0.008	0.021	0.008
QC	7	1405	1626	-1.56747	-0.00011	-0.08004	-1.44162	-0.00021	0.03849	-2.36291	-0.00059	-0.10074	0.018	0.011	0.019	0.01
QC	7	1406		-1.92908	0.00029	-0.03955	-0.85115	-0.00105	-0.03662	-2.09616	-0.00223	-0.13381				
QC	7	1410	5	-2.56258	-0.01344	0.30226	1.95230	0.04231	-1.14738	-11.21683	-0.13767	3.60192	0.013	0.005	0.02	0.004
QC	7	1550		-1.89733	-0.00020	-0.05816	-2.14698	-0.00154	0.23597	-1.81366	-0.00240	-0.18994				
QC	7	1701		-0.22840	0.00095	-0.38816	3.69442	0.01074	-1.24539	7.04965	0.01029	-2.27227				
QC	7	1900	4	-1.50668	0.00033	-0.10469	-1.78323	-0.00193	0.15348	-0.83843	0.00240	-0.50507	0.004	0.007	0.004	0.016
QC	7	2000	175	-2.58102	-0.00050	0.06067	-1.05751	-0.00037	-0.00095	-2.72441	-0.00174	-0.05799	0.017	0.008	0.016	0.006
QC	7	2108		-1.03988	0.00041	-0.18972	-2.36570	-0.00109	0.28505	-1.80450	-0.00015	-0.22450				
QC	7	2201	8	-1.67676	-0.00074	-0.06905	-0.97053	-0.00375	-0.02213	-3.94994	-0.01023	0.41108	0.018	0.006	0.012	0.014
QC	7	2202		-1.67676	-0.00074	-0.06905	-0.97053	-0.00375	-0.02213	-3.94994	-0.01023	0.41108				
QC	7	2801	24	-1.49261	0.00063	-0.12751	-2.01424	-0.00087	0.16837	-2.89631	-0.00058	0.00402	0.014	0.012	0.023	0.008
QC	7	2802	103	-3.00210	-0.00093	0.18596	-2.07204	-0.00577	0.23158	-1.83800	0.00307	-0.19333	0.024	0.013	0.024	0.011
QC	7	3000		-1.28991	0.00033	-0.11208	-1.54606	-0.00024	0.04570	-2.46851	-0.00118	-0.07693				
QC	7	3401	47	-1.79735	0.00016	-0.07437	-0.89781	-0.00061	-0.05188	-2.32703	-0.00347	-0.02002	0.025	0.008	0.021	0.011
QC	7	3402	55	-1.23719	0.00052	-0.13278	-1.60581	-0.00198	0.09095	-2.95356	-0.00347	0.09107	0.037	0.016	0.026	0.011
QC	7	3403		-1.23719	0.00052	-0.13278	-1.60581	-0.00198	0.09095	-2.95356	-0.00347	0.09107				
QC	7	3500	28	-1.61851	-0.00870	0.07909	-1.32710	0.00478	-0.06784	-2.18401	0.00192	-0.07640	0.031	0.014	0.03	0.017
QC	7	3960	14	-0.71275	0.00058	-0.40922	-1.62645	0.01275	-0.10461	-2.46932	-0.00535	0.05629	0.095	0.129	0.03	0.016
QC	8	101	75	-1.51641	0.00137	-0.11603	-1.58928	0.00118	-0.03380	-0.90053	0.00041	-0.22790	0.021	0.006	0.013	0.017
QC	8	102	89	-1.68433	0.00002	-0.04721	-2.39107	0.00008	0.13302	-1.94607	-0.00059	-0.03318	0.018	0.008	0.025	0.011
QC	8	103	7	-1.90128	0.00081	-0.09783	-3.21295	-0.00095	0.36517	-3.84449	-0.00144	0.45259	0.044	0.007	0.026	0.022
QC	8	105	50	-1.58148	0.00011	-0.06038	-1.58530	0.00001	0.04708	-0.57882	0.00140	-0.29551	0.032	0.009	0.019	0.028
QC	8	107		-1.68433	0.00002	-0.04721	-2.39107	0.00008	0.13302	-1.94607	-0.00059	-0.03318				
QC	8	202	140	-1.45067	0.00017	-0.08399	-1.67088	0.00003	0.04156	-0.96555	0.00087	-0.29448	0.021	0.009	0.024	0.015
QC	8	203	13	-0.68975	0.00075	-0.32992	-0.32080	-0.00244	-0.30576	-1.88071	0.00031	-0.15434	0.052	0.023	0.047	0.023
QC	8	209	5	-3.25605	-0.00281	0.33182	0.09590	-0.00050	-0.31426	-18.49900	-0.01687	3.77650	0.022	0.003	0.011	0.013
QC	8	211		-3.25605	-0.00281	0.33182	0.09590	-0.00050	-0.31426	-18.49900	-0.01687	3.77650				
QC	8	302	515	-1.70983	-0.00022	-0.01714	-1.56487	0.00054	-0.01295	-1.21283	-0.00012	-0.17668	0.017	0.008	0.017	0.019
QC	8	401	205	-1.50521	0.00036	-0.07920	-1.30240	-0.00020	-0.00765	-1.81564	-0.00037	-0.08995	0.017	0.01	0.019	0.017
QC	8	602	73	-2.10917	-0.00106	0.01693	-2.41482	-0.00179	0.14874	-1.88354	0.00057	-0.12587	0.024	0.008	0.019	0.014
QC	8	701	208	-1.67735	0.00030	-0.06835	-1.25500	0.00022	-0.03946	-1.16059	0.00132	-0.22600	0.021	0.009	0.018	0.022
QC	8	1201	272	-1.52524	0.00000	-0.02236	-1.92886	-0.00025	0.07080	-2.45442	0.00050	-0.09873	0.018	0.012	0.018	0.013
QC	8	1203	27	-1.20048	0.00208	-0.18921	-1.14112	0.00342	-0.10198	-0.83213	0.00545	-0.53422	0.048	0.013	0.04	0.016
QC	8	1205	10	-2.24876	-0.00004	0.04454	-2.64799	-0.00331	0.34915	-5.07238	-0.00400	0.47093	0.045	0.013	0.056	0.009
QC	8	1206	75	-1.40443	-0.00051	-0.02069	-1.66406	0.00050	-0.01321	-3.33410	-0.00229	0.15050	0.01	0.013	0.016	0.012
QC	8	1211		-1.79382	-0.00048	0.04551	-1.67909	0.00047	0.00400	-2.82031	-0.00055	0.00311				
QC	8	1301	74	-1.95243	-0.00064	0.02027	-0.62543	0.00143	-0.16001	-3.53335	-0.00440	0.28888	0.011	0.007	0.014	0.011
QC	8	1303	45	-1.54692	0.00057	-0.07099	-1.64362	0.00085	0.01457	-2.84703	-0.00042	0.05385	0.014	0.01	0.017	0.013

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
QC	8	1304	99	-1.73630	-0.00013	-0.02568	-2.26454	-0.00118	0.15466	-3.57136	-0.00013	0.13104	0.017	0.009	0.014	0.01
QC	8	1401	452	-1.64273	-0.00060	-0.05592	-1.08284	0.00055	-0.05552	-1.30060	-0.00022	-0.39194	0.013	0.01	0.015	0.007
QC	8	1404	3	-6.07452	-0.03021	1.43666	0.11305	-0.00875	-0.03199	-18.57400	-0.11316	5.27633	0	0	0	0
QC	8	1405	1120	-1.86270	-0.00080	0.00055	-1.41717	0.00041	-0.00188	-3.21779	-0.00307	0.16785	0.013	0.009	0.014	0.013
QC	8	1406	76	-1.68883	-0.00043	-0.06036	-0.59306	0.00202	-0.14174	-1.36795	-0.00041	-0.29857	0.061	0.025	0.071	0.01
QC	8	1550		-1.25432	0.00037	-0.15723	-2.44701	-0.00043	0.24888	-2.50248	-0.00181	-0.06346				
QC	8	1601	10	-1.14437	0.00148	-0.21289	-0.54650	0.00357	-0.24153	-1.15445	0.00561	-0.53307	0.013	0.009	0.021	0.003
QC	8	1701	5	-0.22840	0.00095	-0.38816	3.69442	0.01074	-1.24539	7.04965	0.01029	-2.27227	0.032	0.009	0.04	0.002
QC	8	1900	13	0.60314	0.00751	-0.69594	-4.27199	-0.00855	0.80273	0.35814	0.00840	-0.86838	0.011	0.007	0.017	0.004
QC	8	2000	60	0.55726	0.00385	-0.69963	-1.56814	-0.00004	0.07073	0.31503	0.00301	-0.81213	0.01	0.009	0.014	0.007
QC	8	2101	11	-1.98968	-0.00217	0.06012	0.36088	0.00778	-0.47164	-6.61673	-0.01657	1.18287	0.031	0.01	0.046	0.013
QC	8	2102	3	6.23737	0.01219	-2.05172	-10.24365	-0.01106	2.23414	-12.76506	-0.02016	2.55281	0	0	0	0
QC	8	2104		-4.76511	-0.00665	0.79145	3.41761	0.01132	-1.25780	-4.19398	-0.00767	0.46496				
QC	8	2108	20	-4.76511	-0.00665	0.79145	3.41761	0.01132	-1.25780	-4.19398	-0.00767	0.46496	0.021	0.012	0.031	0.006
QC	8	2201	22	-2.13002	0.00009	0.04832	-1.31863	0.00177	-0.05154	-2.05238	0.00558	-0.28522	0.017	0.012	0.017	0.01
QC	8	2202	3	-0.94511	0.01382	-0.43560	-5.26851	-0.05912	1.68217	7.52789	0.15081	-4.48764	0	0	0	0
QC	8	2203		-2.13002	0.00009	0.04832	-1.31863	0.00177	-0.05154	-2.05238	0.00558	-0.28522				
QC	8	2801	12	-2.11141	-0.00077	0.06629	-0.99444	0.00155	-0.13722	-3.36739	-0.00235	0.11887	0.017	0.011	0.025	0.007
QC	8	2802	6	-2.04817	0.02739	-0.28290	-4.13369	-0.04292	1.11496	-0.75639	0.02227	-0.71004	0.015	0.004	0.012	0.006
QC	8	3000	23	-1.05244	0.00040	-0.16999	-2.39373	-0.00074	0.23548	-2.70963	-0.00122	-0.04022	0.014	0.011	0.02	0.005
QC	8	3401	28	-1.94537	-0.00044	0.02987	-2.07655	-0.00052	0.14136	-2.98021	-0.00173	0.03809	0.014	0.01	0.023	0.009
QC	8	3402	23	-2.13608	-0.00178	0.10256	-1.30177	0.00101	-0.06272	-2.65518	-0.00116	-0.03588	0.024	0.011	0.02	0.012
QC	8	3403		-1.94537	-0.00044	0.02987	-2.07655	-0.00052	0.14136	-2.98021	-0.00173	0.03809				
QC	8	3405	32	-0.06307	0.00478	-0.47413	-1.97730	-0.00099	0.12901	-2.72715	-0.00345	0.04470	0.029	0.026	0.032	0.016
QC	8	3500	7	-1.27070	-0.00134	-0.08283	-1.05359	0.01632	-0.45451	-2.81488	-0.00324	0.02938	0.037	0.014	0.037	0.015
QC	15	101	78	-1.68706	-0.00011	-0.03278	-0.96271	0.00039	-0.17252	-0.71050	-0.00068	-0.20382	0.022	0.003	0.008	0.016
QC	15	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
QC	15	107		-1.68706	-0.00011	-0.03278	-0.96271	0.00039	-0.17252	-0.71050	-0.00068	-0.20382				
QC	15	202		-1.76957	-0.00012	-0.01653	-1.64837	-0.00024	0.03517	-0.70974	0.00050	-0.33956				
QC	15	203	11	-1.47850	0.00105	-0.16387	-1.00622	-0.00017	-0.17393	-0.58895	0.00454	-0.42946	0.024	0.004	0.031	0.016
QC	15	209		-2.11629	-0.00047	0.01330	-1.31833	-0.00036	-0.05929	-0.60505	0.00069	-0.33018				
QC	15	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
QC	15	401		-1.39146	0.00040	-0.09639	-1.54477	-0.00032	0.05513	-1.20696	0.00029	-0.25361				
QC	15	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
QC	15	701		-1.89869	-0.00024	0.00738	-1.45972	0.00002	0.01600	-1.14471	0.00043	-0.18526				
QC	15	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
QC	15	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
QC	15	1211		-1.41288	0.00018	-0.05249	-1.56218	-0.00010	-0.02285	-1.90284	-0.00146	-0.11592				
QC	15	1301		-1.90021	-0.00019	0.00221	-0.93355	0.00068	-0.03877	-2.01874	-0.00060	-0.12468				
QC	15	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
QC	15	1401		-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561				
QC	15	1405		-1.88114	-0.00041	0.00071	-1.47983	0.00001	0.03383	-2.18037	-0.00132	-0.06320				
QC	15	1550		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
NB	7	100		-0.14522	0.00088	-0.37725	-1.72739	0.00046	0.00262	-0.06704	0.00189	-0.49665				
NB	7	101	342	-1.31795	0.00056	-0.15126	0.27861	0.00157	-0.36430	0.55543	0.00056	-0.46452	0.029	0.008	0.019	0.023
NB	7	102	329	-0.14522	0.00088	-0.37725	-1.72739	0.00046	0.00262	-0.06704	0.00189	-0.49665	0.024	0.014	0.032	0.015
NB	7	105	90	-2.00358	-0.00067	0.03859	0.50530	0.00164	-0.45639	1.04978	0.00254	-0.70004	0.021	0.011	0.019	0.02
NB	7	107		-0.14522	0.00088	-0.37725	-1.72739	0.00046	0.00262	-0.06704	0.00189	-0.49665				
NB	7	108		-2.00358	-0.00067	0.03859	0.50530	0.00164	-0.45639	1.04978	0.00254	-0.70004				
NB	7	202		-2.19170	-0.00080	0.08926	-2.10439	-0.00108	0.22244	-1.91482	-0.00047	-0.05665				
NB	7	203	100	-1.82901	-0.00014	-0.10366	-0.78613	0.00010	-0.17036	-1.57050	-0.00130	-0.09627	0.025	0.005	0.017	0.012
NB	7	209		-1.82901	-0.00014	-0.10366	-0.78613	0.00010	-0.17036	-1.57050	-0.00130	-0.09627				
NB	7	302	466	-0.76240	0.00050	-0.20857	-0.84570	-0.00031	-0.12294	-0.00703	0.00132	-0.47462	0.032	0.013	0.028	0.023
NB	7	401		-1.67132	0.00016	-0.04631	-1.15311	0.00029	-0.04049	-1.32825	0.00076	-0.22351				
NB	7	601		2.83929	0.00626	-1.17981	1.72802	0.00320	-0.76439	2.46813	0.00472	-1.16893				
NB	7	602	9	2.83929	0.00626	-1.17981	1.72802	0.00320	-0.76439	2.46813	0.00472	-1.16893	0.029	0.005	0.022	0.014
NB	7	701	34	-1.97196	-0.00063	0.04105	-0.93447	-0.00006	-0.12503	-3.47384	-0.00079	0.28249	0.014	0.006	0.018	0.014
NB	7	1200		-0.83883	0.00057	-0.17435	-2.13686	0.00035	0.13237	-1.89820	-0.00126	-0.14311				
NB	7	1201	182	-0.83883	0.00057	-0.17435	-2.13686	0.00035	0.13237	-1.89820	-0.00126	-0.14311	0.018	0.014	0.025	0.012
NB	7	1203	5	-3.87854	-0.00307	0.53508	-8.98038	-0.00619	1.64746	13.46456	0.01244	-3.52267	0.007	0.013	0.022	0.007
NB	7	1206	13	-0.68624	-0.00004	-0.16279	-0.40602	-0.00142	-0.15282	-0.22638	0.00223	-0.57594	0.049	0.017	0.036	0.008
NB	7	1301	29	-1.01704	0.00130	-0.22039	0.79180	0.00158	-0.41686	1.50293	0.00428	-0.97426	0.016	0.007	0.022	0.029
NB	7	1303	91	-1.26721	-0.00068	-0.08992	-1.07486	0.00060	-0.10833	-1.16611	0.00064	-0.34094	0.029	0.011	0.022	0.018
NB	7	1304	2	-1.43922	-0.00184	-0.04383	-11.06855	-0.02785	2.64489	24.30223	0.07656	-7.56336	0.004	0	0.015	0.015
NB	7	1401	112	-1.16686	0.00241	-0.24716	0.98638	0.00004	-0.40930	0.77790	0.00137	-0.77148	0.019	0.009	0.021	0.011
NB	7	1405	129	-0.82937	0.00020	-0.23091	-1.10974	-0.00008	-0.04743	-1.77351	-0.00035	-0.19060	0.02	0.012	0.023	0.01
NB	7	1500		-1.50342	0.00121	-0.18426	-0.14535	0.00115	-0.22599	-2.11093	-0.00239	-0.10017				
NB	7	1550		-1.50342	0.00121	-0.18426	-0.14535	0.00115	-0.22599	-2.11093	-0.00239	-0.10017				
NB	7	2000	49	-1.50342	0.00121	-0.18426	-0.14535	0.00115	-0.22599	-2.11093	-0.00239	-0.10017	0.015	0.009	0.018	0.007
NS	7	101	161	-1.90215	-0.00144	0.02334	-0.04686	-0.00232	-0.17949	-0.63852	-0.00320	-0.15799	0.044	0.011	0.041	0.024
NS	7	102	306	-0.88006	-0.00045	-0.17047	-0.88147	0.00037	-0.13014	-0.73244	0.00011	-0.27709	0.04	0.014	0.035	0.018
NS	7	103	2	-3.03908	-0.01980	0.36360	-3.04378	-0.02786	0.43623	-4.91515	-0.09590	1.30368	0	0	0	0
NS	7	105	199	-1.94965	-0.00031	-0.00063	0.53047	-0.00010	-0.34044	-0.27843	-0.00041	-0.30446	0.055	0.015	0.051	0.025
NS	7	106		-1.94965	-0.00031	-0.00063	0.53047	-0.00010	-0.34044	-0.27843	-0.00041	-0.30446				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
NS	7	107	212	-1.74529	-0.00067	-0.01887	0.21602	-0.00008	-0.26572	-0.21541	-0.00088	-0.30770	0.037	0.009	0.035	0.023
NS	7	202	120	-1.80782	-0.00070	0.02712	-1.08566	-0.00225	0.08120	-1.14346	-0.00140	-0.12604	0.057	0.013	0.049	0.023
NS	7	203	5	-1.91884	-0.00091	-0.06814	-0.74834	-0.00146	-0.07827	-1.79641	-0.00347	-0.01706	0.018	0.005	0.015	0.011
NS	7	209	11	-1.96010	-0.00167	0.02057	1.68335	0.00377	-0.66588	0.18315	0.00142	-0.46803	0.062	0.01	0.061	0.017
NS	7	211		-1.96010	-0.00167	0.02057	1.68335	0.00377	-0.66588	0.18315	0.00142	-0.46803				
NS	7	302	648	-0.99017	0.00009	-0.14541	2.09155	0.00702	-0.84191	0.69118	0.00193	-0.59640	0.077	0.017	0.082	0.025
NS	7	401	41	-1.27045	0.00001	-0.10275	-0.75023	-0.00018	-0.08501	-1.16930	0.00001	-0.17982	0.03	0.007	0.026	0.013
NS	7	601		-2.13609	-0.00138	0.05392	-0.51938	-0.00284	-0.10035	-1.48863	-0.00151	-0.16164				
NS	7	602	31	-2.13609	-0.00138	0.05392	-0.51938	-0.00284	-0.10035	-1.48863	-0.00151	-0.16164	0.066	0.015	0.07	0.02
NS	7	701		-2.22785	-0.00133	0.13449	-1.13396	-0.00013	-0.03201	-0.34369	0.00125	-0.32419				
NS	7	1100		-1.47765	-0.00052	-0.05353	0.48766	0.00091	-0.37222	-0.21172	-0.00040	-0.32066				
NS	7	1150		-1.47765	-0.00052	-0.05353	0.48766	0.00091	-0.37222	-0.21172	-0.00040	-0.32066				
NS	7	1200	16	-1.14632	0.00029	-0.10333	-2.54860	-0.00460	0.39456	-2.85218	-0.00077	0.06708	0.037	0.018	0.036	0.022
NS	7	1201	33	-1.35601	-0.00068	-0.03801	-1.81903	-0.00124	0.13474	-1.47125	0.00357	-0.36791	0.019	0.01	0.024	0.015
NS	7	1206	20	-0.13127	0.00046	-0.28560	-1.52226	-0.00100	0.05178	-2.27111	-0.00178	-0.03881	0.022	0.017	0.019	0.009
NS	7	1301	106	-1.31165	-0.00026	-0.09070	0.23452	-0.00137	-0.16351	-1.03399	0.00105	-0.36870	0.063	0.007	0.063	0.014
NS	7	1303	71	-1.46472	-0.00036	-0.06749	0.36193	-0.00013	-0.30482	-1.65588	-0.00047	-0.17793	0.071	0.015	0.076	0.015
NS	7	1304	2	-1.41842	0.00021	-0.07008	-1.12593	0.00118	-0.07443	-1.83393	0.00417	-0.27937	0.017	0.008	0.011	0.014
NS	7	1401	105	-1.86806	-0.00133	0.02015	-0.23110	-0.00248	-0.08439	-1.65539	-0.00223	-0.18730	0.04	0.011	0.033	0.011
NS	7	1405	343	-1.30035	-0.00109	-0.08430	-1.16785	-0.00193	0.05824	-2.32867	-0.00212	-0.01231	0.038	0.013	0.03	0.018
NS	7	1500		-1.04160	-0.00079	-0.18059	-1.38761	-0.00193	0.13561	-1.90153	-0.00289	-0.10247				
NS	7	1550		-1.04160	-0.00079	-0.18059	-1.38761	-0.00193	0.13561	-1.90153	-0.00289	-0.10247				
NS	7	2000	29	-3.09038	-0.00205	0.23976	-0.40479	-0.00104	-0.07498	-2.29743	-0.00309	-0.04356	0.042	0.016	0.048	0.007
NS	7	2100	3	-0.78160	0.00098	-0.23421	1.48575	0.04166	-1.18929	-3.15520	-0.00386	0.28638	0.004	0.003	0.007	0.003
NS	7	2108	23	-0.95319	-0.00044	-0.13146	-1.60830	-0.00198	0.16399	-1.19626	0.00112	-0.31444	0.037	0.017	0.041	0.013
NS	7	2201		-2.43743	-0.00205	0.19258	0.30305	0.00176	-0.36036	-2.13560	0.00019	-0.09312				
NS	7	2801	2	-0.66649	0.00491	-0.37166	-1.19948	0.00260	-0.06979	-2.23537	0.00831	-0.17460	0.019	0.002	0.009	0.012
NS	7	3400		-1.96959	-0.00069	0.00347	-0.50606	-0.00089	-0.10773	-2.22766	-0.00259	-0.00069				
NS	7	3401	14	-1.96959	-0.00069	0.00347	-0.50606	-0.00089	-0.10773	-2.22766	-0.00259	-0.00069	0.035	0.008	0.027	0.009
NS	7	4000		-1.04160	-0.00079	-0.18059	-1.38761	-0.00193	0.13561	-1.90153	-0.00289	-0.10247				
NS	7	5000		-0.94774	0.00003	-0.12906	-1.84669	-0.00194	0.15928	-2.38614	-0.00045	-0.05701				
PE	7	101	102	-1.98197	0.00020	0.00107	-0.85455	-0.00040	-0.04825	-1.13649	-0.00162	-0.07057	0.042	0.01	0.016	0.032
PE	7	102	49	-1.07690	0.00005	-0.13002	-2.04173	0.00110	0.03411	-1.19838	0.00034	-0.17017	0.018	0.016	0.019	0.016
PE	7	105	242	-1.82705	0.00010	-0.03813	-1.09454	0.00039	-0.05947	-2.22995	-0.00051	0.08076	0.015	0.011	0.012	0.022
PE	7	202		-1.80782	-0.00070	0.02712	-1.08566	-0.00225	0.08120	-1.14346	-0.00140	-0.12604				
PE	7	209		-1.96010	-0.00167	0.02057	1.68335	0.00377	-0.66588	0.18315	0.00142	-0.46803				
PE	7	302	221	-1.48505	-0.00014	-0.03847	-1.60885	-0.00018	0.06597	-1.93753	-0.00179	0.01628	0.019	0.013	0.023	0.021
PE	7	401	7	-1.69479	0.00017	-0.03580	-2.45620	-0.00083	0.26654	0.64678	0.00319	-0.68686	0.007	0.007	0.025	0.013
PE	7	602	26	-2.24655	-0.00093	0.06867	-1.18809	-0.00002	-0.05249	-2.13117	-0.00085	-0.03195	0.026	0.01	0.018	0.018
PE	7	701	20	-2.22785	-0.00133	0.13449	-1.13396	-0.00013	-0.03201	-0.34369	0.00125	-0.32419	0.019	0.009	0.012	0.017
PE	7	1200		-1.22710	0.00056	-0.09128	-1.40145	-0.00001	0.01339	-1.91401	0.00223	-0.26713				
PE	7	1201	55	-1.22710	0.00056	-0.09128	-1.40145	-0.00001	0.01339	-1.91401	0.00223	-0.26713	0.018	0.014	0.027	0.01
PE	7	1206	13	-1.28400	0.00087	-0.07006	-0.91496	-0.00030	-0.07539	-3.78095	-0.00449	0.36820	0.014	0.023	0.028	0.008
PE	7	1301	26	-1.50205	-0.00049	-0.06272	1.58584	0.00367	-0.58413	-0.68319	-0.00043	-0.37909	0.035	0.008	0.03	0.01
PE	7	1303	45	-1.44333	0.00064	-0.09903	-2.08526	-0.00124	0.22297	-0.29159	0.00439	-0.61215	0.015	0.01	0.022	0.01
PE	7	1304		-1.44333	0.00064	-0.09903	-2.08526	-0.00124	0.22297	-0.29159	0.00439	-0.61215				
PE	7	1401	38	-0.77936	0.00234	-0.31303	0.45152	0.00233	-0.35318	-0.21295	0.00380	-0.63586	0.021	0.007	0.016	0.008
PE	7	1405	266	-1.59684	-0.00040	-0.03487	-1.12585	0.00010	-0.01778	-3.09929	-0.00160	0.10066	0.019	0.012	0.02	0.012
PE	7	1550		-0.10253	0.00403	-0.52862	-2.85261	-0.00296	0.44502	1.25314	0.00592	-0.99235				
PE	7	2000	18	-4.90234	-0.00488	0.67443	3.04431	0.00886	-1.06630	4.16995	0.01541	-1.87642	0.012	0.009	0.014	0.006
PE	7	2108		-0.95319	-0.00044	-0.13146	-1.60830	-0.00198	0.16399	-1.19626	0.00112	-0.31444				
PE	7	2200	5	-2.43743	-0.00205	0.19258	0.30305	0.00176	-0.36036	-2.13560	0.00019	-0.09312	0.01	0.009	0.013	0.003
PE	7	2201		-2.43743	-0.00205	0.19258	0.30305	0.00176	-0.36036	-2.13560	0.00019	-0.09312				
PE	7	2802	8	-1.75031	-0.00049	-0.02562	-1.21038	0.00226	-0.12076	0.72265	0.01466	-0.89725	0.007	0.006	0.01	0.009
PE	7	3401	4	-3.41003	-0.00273	0.33858	-6.50352	-0.01765	1.57956	-22.34643	-0.05930	5.60768	0.002	0.003	0.006	0.001
NF	1	101		-1.35402	0.00000	-0.08748	-0.48090	0.00080	-0.14329	0.61368	-0.00017	-0.35620				
NF	1	105		-1.51034	0.00024	-0.08006	-1.03154	-0.00543	0.09860	0.22051	-0.00952	-0.01303				
NF	1	302		-1.67899	-0.00066	0.01250	-0.97548	0.00089	-0.03235	0.35605	-0.00270	-0.23391				
NF	1	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NF	1	1303		-1.55785	-0.00043	-0.02659	-2.01637	-0.02715	0.65726	0.49422	-0.00325	-0.45090				
NF	5	101	44	-1.35402	0.00000	-0.08748	-0.48090	0.00080	-0.14329	0.61368	-0.00017	-0.35620	0.05	0.008	0.036	0.029
NF	5	105		-1.51034	0.00024	-0.08006	-1.03154	-0.00543	0.09860	0.22051	-0.00952	-0.01303				
NF	5	202		-1.76957	-0.00012	-0.01653	-1.64837	-0.00024	0.03517	-0.70974	0.00050	-0.33956				
NF	5	302	17	-1.67899	-0.00066	0.01250	-0.97548	0.00089	-0.03235	0.35605	-0.00270	-0.23391	0.038	0.006	0.023	0.032
NF	5	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NF	5	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
NF	5	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
NF	5	1301		-1.90021	-0.00019	0.00221	-0.93355	0.00068	-0.03877	-2.01874	-0.00060	-0.12468				
NF	5	1303		-1.55785	-0.00043	-0.02659	-2.01637	-0.02715	0.65726	0.49422	-0.00325	-0.45090				
NF	5	1405		-1.88114	-0.00041	0.00071	-1.47983	0.00001	0.03383	-2.18037	-0.00132	-0.06320				
NF	5	1500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
NF	6	101	300	-1.50326	-0.00014	-0.06497	-0.36910	0.00102	-0.18018	0.86531	0.00052	-0.39713	0.03	0.005	0.017	0.028
NF	6	105	8	-1.51034	0.00024	-0.08006	-1.03154	-0.00543	0.09860	0.22051	-0.00952	-0.01303	0.045	0.008	0.036	0.041
NF	6	202		-1.76957	-0.00012	-0.01653	-1.64837	-0.00024	0.03517	-0.70974	0.00050	-0.33956				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
NF	6	209		-2.11629	-0.00047	0.01330	-1.31833	-0.00036	-0.05929	-0.60505	0.00069	-0.33018				
NF	6	302	382	-1.73828	0.00033	-0.00015	-0.79583	0.00096	-0.11925	0.67547	-0.00059	-0.35568	0.05	0.007	0.034	0.041
NF	6	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NF	6	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
NF	6	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
NF	6	1301		-1.90021	-0.00019	0.00221	-0.93355	0.00068	-0.03877	-2.01874	-0.00060	-0.12468				
NF	6	1303	7	-1.55785	-0.00043	-0.02659	-2.01637	-0.02715	0.65726	0.49422	-0.00325	-0.45090	0.111	0.02	0.146	0.02
NF	6	1405		-1.88114	-0.00041	0.00071	-1.47983	0.00001	0.03383	-2.18037	-0.00132	-0.06320				
NF	6	1500		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
NF	6	3500		-1.26404	0.00073	-0.07814	-1.62832	-0.00118	0.01130	-2.39182	-0.00379	-0.01180				
YK	2	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
YK	2	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
YK	2	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	3	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
YK	3	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
YK	3	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	3	304		-1.55897	-0.00097	-0.02239	-1.62699	-0.00305	0.09476	-1.56379	-0.00305	0.00801				
YK	3	602		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	3	1201		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	3	1203		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	3	1308		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	4	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
YK	4	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
YK	4	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	4	304		-1.55897	-0.00097	-0.02239	-1.62699	-0.00305	0.09476	-1.56379	-0.00305	0.00801				
YK	4	602		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	4	1201		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	4	1203		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	4	1308		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	11	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
YK	11	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
YK	11	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	11	304		-1.55897	-0.00097	-0.02239	-1.62699	-0.00305	0.09476	-1.56379	-0.00305	0.00801				
YK	11	602		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	11	1201		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	11	1203		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	11	1308		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	12	101	20	-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835	0.04	0.006	0.024	0.015
YK	12	105	119	-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508	0.073	0.007	0.048	0.024
YK	12	204	82	-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220	0.044	0.007	0.039	0.011
YK	12	304		-1.55897	-0.00097	-0.02239	-1.62699	-0.00305	0.09476	-1.56379	-0.00305	0.00801				
YK	12	602		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
YK	12	1201	19	-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839	0.047	0.014	0.032	0.016
YK	12	1203		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
YK	12	1308		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	2	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
NT	2	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
NT	2	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
NT	3	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
NT	3	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
NT	3	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
NT	3	304		-1.55897	-0.00097	-0.02239	-1.62699	-0.00305	0.09476	-1.56379	-0.00305	0.00801				
NT	3	602		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
NT	3	1201		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	3	1203		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	3	1308		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	4	101		-1.45747	0.00492	-0.14092	-2.53740	-0.01683	0.14495	-0.30969	0.03900	-0.82785				
NT	4	105		-2.71136	-0.00117	0.19448	-5.11024	-0.00398	0.63364	1.44759	0.00190	-0.77621				
NT	4	203		1.92005	0.00534	-0.98315	-2.99013	-0.00373	0.24658	-0.17518	0.00255	-0.58622				
NT	4	204		1.92005	0.00534	-0.98315	-2.99013	-0.00373	0.24658	-0.17518	0.00255	-0.58622				
NT	4	216		1.92005	0.00534	-0.98315	-2.99013	-0.00373	0.24658	-0.17518	0.00255	-0.58622				
NT	4	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
NT	4	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
NT	4	601		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	4	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	4	1200		-1.42342	-0.00027	-0.03020	-4.92747	-0.00259	0.54481	-3.50320	-0.00062	0.09892				
NT	4	1201		-1.42342	-0.00027	-0.03020	-4.92747	-0.00259	0.54481	-3.50320	-0.00062	0.09892				
NT	4	1203		-1.20848	0.00017	-0.11248	-1.86683	-0.00050	0.10630	-9.50939	-0.00563	1.31981				
NT	4	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
NT	5	101		-1.35108	-0.00045	-0.09348	-1.12677	-0.00054	-0.11802	-0.74079	-0.00214	-0.14597				
NT	5	105		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
NT	5	203		-1.90568	-0.00289	0.00111	-1.99089	-0.00100	-0.04115	-1.61900	-0.00205	-0.18528				
NT	5	204		-1.72707	-0.00006	-0.09404	-1.84906	-0.00029	-0.08748	-1.88402	-0.00160	-0.07144				
NT	5	216		-1.70039	-0.00002	-0.10143	-1.85085	-0.00029	-0.08728	-1.88046	-0.00152	-0.07735				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
NT	5	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
NT	5	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
NT	5	601		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	5	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	5	1200		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
NT	5	1201		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
NT	5	1203		-2.31951	-0.00242	0.24672	-2.17145	-0.00103	0.14399	0.38201	0.00530	-0.92292				
NT	5	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
NT	9	101		-1.35108	-0.00045	-0.09348	-1.12677	-0.00054	-0.11802	-0.74079	-0.00214	-0.14597				
NT	9	104		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
NT	9	105		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
NT	9	109		-1.43576	0.00041	-0.11240	0.14117	-0.00010	-0.34330	0.76919	-0.00014	-0.55583				
NT	9	203		-1.90568	-0.00289	0.00111	-1.99089	-0.00100	-0.04115	-1.61900	-0.00205	-0.18528				
NT	9	204		-1.72707	-0.00006	-0.09404	-1.84906	-0.00029	-0.08748	-1.88402	-0.00160	-0.07144				
NT	9	216		-1.70039	-0.00002	-0.10143	-1.85085	-0.00029	-0.08728	-1.88046	-0.00152	-0.07735				
NT	9	302		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
NT	9	304		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
NT	9	305		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
NT	9	306		-1.07108	0.00053	-0.17980	-0.96661	-0.00165	-0.04474	-2.26785	-0.00290	0.15726				
NT	9	500		-6.12238	-0.00286	0.91544	-1.96587	-0.00080	0.16860	3.26326	0.00268	-1.05347				
NT	9	600		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	9	601		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	9	602		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	9	604		-1.10272	0.00361	-0.25839	-0.59671	-0.00105	-0.18246	-1.10529	-0.00119	-0.28111				
NT	9	1150		-1.45271	0.00018	-0.14111	-1.39913	-0.00019	-0.13136	-1.19791	-0.00109	-0.18426				
NT	9	1200		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
NT	9	1201		-1.13628	-0.00062	-0.03278	-2.93931	-0.00046	0.19199	-1.88762	0.00181	-0.37141				
NT	9	1203		-2.31951	-0.00242	0.24672	-2.17145	-0.00103	0.14399	0.38201	0.00530	-0.92292				
NT	9	1303		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
NT	9	1404		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
NT	9	1500		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
NT	9	1550		-1.69776	-0.00140	0.01591	-3.67166	-0.00884	0.65958	-2.35163	0.00599	-0.23641				
NT	11	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
NT	11	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
NT	11	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
NT	11	304		-1.55897	-0.00097	-0.02239	-1.62699	-0.00305	0.09476	-1.56379	-0.00305	0.00801				
NT	11	602		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
NT	11	1201		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	11	1203		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	11	1308		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	12	101		-1.38778	0.00090	-0.12055	-1.28412	-0.00172	-0.14289	-1.20455	-0.00107	-0.21835				
NT	12	105		-1.33074	-0.00074	-0.07438	-0.92331	-0.00238	-0.06169	-0.96463	-0.00249	-0.12508				
NT	12	204		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
NT	12	304		-1.55897	-0.00097	-0.02239	-1.62699	-0.00305	0.09476	-1.56379	-0.00305	0.00801				
NT	12	602		-2.14361	-0.00163	0.02431	-2.58801	-0.00388	0.21011	-2.24110	-0.00307	0.01220				
NT	12	1201		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	12	1203		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NT	12	1308		-1.73945	-0.00244	0.08521	-2.57807	-0.00549	0.34686	-2.01434	-0.00415	-0.09839				
NU	1	101		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	1	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
NU	1	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	1	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
NU	1	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NU	1	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
NU	1	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
NU	1	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
NU	2	101		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	2	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
NU	2	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	2	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
NU	2	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NU	2	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
NU	2	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
NU	2	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
NU	3	101		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	3	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
NU	3	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	3	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
NU	3	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NU	3	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
NU	3	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
NU	3	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
NU	5	101		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	5	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				

jur	eco	species	count	a1	a2	a3	b1	b2	b3	c1	c2	c3	r_sw	r_sb	r_br	r_fl
NU	5	107		-1.64440	-0.00031	-0.03938	-0.81167	-0.00104	-0.16196	-0.61343	-0.00174	-0.19268				
NU	5	202		-1.76957	-0.00012	-0.01653	-1.64837	-0.00024	0.03517	-0.70974	0.00050	-0.33956				
NU	5	203		-2.01102	0.00021	-0.05152	-1.50322	0.00058	-0.11218	-1.65606	-0.00069	-0.11654				
NU	5	209		-2.11629	-0.00047	0.01330	-1.31833	-0.00036	-0.05929	-0.60505	0.00069	-0.33018				
NU	5	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
NU	5	401		-1.39146	0.00040	-0.09639	-1.54477	-0.00032	0.05513	-1.20696	0.00029	-0.25361				
NU	5	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NU	5	701		-1.89869	-0.00024	0.00738	-1.45972	0.00002	0.01600	-1.14471	0.00043	-0.18526				
NU	5	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
NU	5	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
NU	5	1211		-1.41288	0.00018	-0.05249	-1.56218	-0.00010	-0.02285	-1.90284	-0.00146	-0.11592				
NU	5	1301		-1.90021	-0.00019	0.00221	-0.93355	0.00068	-0.03877	-2.01874	-0.00060	-0.12468				
NU	5	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
NU	5	1401		-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561				
NU	5	1405		-1.88114	-0.00041	0.00071	-1.47983	0.00001	0.03383	-2.18037	-0.00132	-0.06320				
NU	5	1550		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				
NU	15	101		-1.68706	-0.00011	-0.03278	-0.96271	0.00039	-0.17252	-0.71050	-0.00068	-0.20382				
NU	15	105		-1.80710	0.00015	-0.02773	-1.46025	0.00001	-0.01788	-0.54632	0.00108	-0.31676				
NU	15	107		-1.68706	-0.00011	-0.03278	-0.96271	0.00039	-0.17252	-0.71050	-0.00068	-0.20382				
NU	15	202		-1.76957	-0.00012	-0.01653	-1.64837	-0.00024	0.03517	-0.70974	0.00050	-0.33956				
NU	15	203		-1.47850	0.00105	-0.16387	-1.00622	-0.00017	-0.17393	-0.58895	0.00454	-0.42946				
NU	15	209		-2.11629	-0.00047	0.01330	-1.31833	-0.00036	-0.05929	-0.60505	0.00069	-0.33018				
NU	15	302		-1.68928	0.00019	-0.02244	-1.49341	0.00047	-0.02547	-1.00113	-0.00035	-0.16376				
NU	15	401		-1.39146	0.00040	-0.09639	-1.54477	-0.00032	0.05513	-1.20696	0.00029	-0.25361				
NU	15	602		-1.84133	0.00022	-0.06847	-1.26989	0.00090	-0.11945	-1.50828	-0.00089	-0.12548				
NU	15	701		-1.89869	-0.00024	0.00738	-1.45972	0.00002	0.01600	-1.14471	0.00043	-0.18526				
NU	15	1201		-1.40322	0.00024	-0.05674	-1.57300	-0.00021	-0.01951	-1.88913	-0.00136	-0.11779				
NU	15	1203		-1.16864	0.00006	-0.10293	-1.30339	0.00026	-0.05875	-2.78850	-0.00175	0.04005				
NU	15	1211		-1.41288	0.00018	-0.05249	-1.56218	-0.00010	-0.02285	-1.90284	-0.00146	-0.11592				
NU	15	1301		-1.90021	-0.00019	0.00221	-0.93355	0.00068	-0.03877	-2.01874	-0.00060	-0.12468				
NU	15	1303		-1.79930	0.00010	-0.00418	-1.62591	-0.00024	0.03459	-1.93942	-0.00110	-0.08026				
NU	15	1401		-1.89102	-0.00047	-0.01285	-1.23723	0.00015	0.01110	-2.09238	-0.00141	-0.16561				
NU	15	1405		-1.88114	-0.00041	0.00071	-1.47983	0.00001	0.03383	-2.18037	-0.00132	-0.06320				
NU	15	1550		-2.06667	-0.00108	0.03509	-2.52722	-0.00110	0.29457	-1.59572	-0.00109	-0.25374				

Table 7. Caps on proportion models

jur = jurisdiction
vol_min = minimum volume measured in plots (m^3/ha)
vol_max = maximum volume measured in plots (m^3/ha)
p_sw_low, p_sb_low, p_br_low, p_fl_low = cap corresponding to lowest volume (vol_min; set predicted p = p-low if volume<vol_min)
p_sw_high, p_sb_high, p_br_high, p_fl_high = cap corresponding to highest volume (vol_max; set predicted p = p-high if volume>vol_max)
model = model was developed or substituted from another province/ecozone/species/genus(G)/forest type(F)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
BC	4	100	7	619	0.668	0.124	0.098	0.111	0.809	0.091	0.032	0.068	S(4-105)
BC	4	101	1	475	0.671	0.125	0.088	0.115	0.79	0.103	0.054	0.052	Developed
BC	4	104	7	619	0.668	0.124	0.098	0.111	0.809	0.091	0.032	0.068	S(4-105)
BC	4	105	7	619	0.668	0.124	0.098	0.111	0.809	0.091	0.032	0.068	Developed
BC	4	204	5	481	0.728	0.087	0.105	0.08	0.838	0.076	0.051	0.035	Developed
BC	4	206	17	571	0.678	0.114	0.156	0.052	0.71	0.093	0.14	0.057	S(14-206)
BC	4	208	4	785	0.24	0.086	0.441	0.234	0.625	0.125	0.179	0.071	S(14-208)
BC	4	300	7	399	0.531	0.058	0.261	0.15	0.689	0.108	0.135	0.068	S(12-304)
BC	4	301	6	873	0.421	0.083	0.225	0.271	0.694	0.088	0.124	0.094	S(14-301)
BC	4	304	7	399	0.531	0.058	0.261	0.15	0.689	0.108	0.135	0.068	S(12-304)
BC	4	400	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(14-402)
BC	4	402	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(14-402)
BC	4	403	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(14-402)
BC	4	500	0	1396	0.523	0.061	0.214	0.202	0.658	0.117	0.173	0.052	S(14-500)
BC	4	600	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	4	602	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	4	603	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	4	604	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	4	702	1	1599	0.425	0.088	0.22	0.267	0.68	0.102	0.15	0.068	S(14-702)
BC	4	1201	5	754	0.699	0.162	0.077	0.062	0.773	0.14	0.054	0.033	Developed
BC	4	1203	4	622	0.688	0.171	0.087	0.054	0.796	0.093	0.092	0.019	Developed
BC	4	1303	1	290	0.69	0.134	0.106	0.071	0.765	0.127	0.08	0.029	Developed
BC	4	1305	1	290	0.69	0.134	0.106	0.071	0.765	0.127	0.08	0.029	S(4-1303)
BC	4	1308	1	290	0.69	0.134	0.106	0.071	0.765	0.127	0.08	0.029	S(4-1303)
BC	4	1403	12	1138	0.685	0.161	0.14	0.013	0.764	0.133	0.093	0.011	S(13-1403)
BC	4	1802	4	1002	0.473	0.069	0.343	0.115	0.724	0.104	0.107	0.066	S(13-1802)
BC	9	100	8	525	0.433	0.06	0.321	0.186	0.773	0.1	0.082	0.045	S(9-105)
BC	9	101	2	380	0.553	0.148	0.115	0.184	0.769	0.089	0.078	0.064	Developed
BC	9	104	8	525	0.433	0.06	0.321	0.186	0.773	0.1	0.082	0.045	S(9-105)
BC	9	105	8	525	0.433	0.06	0.321	0.186	0.773	0.1	0.082	0.045	Developed
BC	9	106	8	525	0.433	0.06	0.321	0.186	0.773	0.1	0.082	0.045	S(9-105)
BC	9	204	1	593	0.618	0.101	0.149	0.132	0.839	0.077	0.051	0.034	Developed
BC	9	206	17	571	0.678	0.114	0.156	0.052	0.71	0.093	0.14	0.057	S(14-206)
BC	9	208	4	785	0.24	0.086	0.441	0.234	0.625	0.125	0.179	0.071	S(14-208)
BC	9	300	7	399	0.531	0.058	0.261	0.15	0.689	0.108	0.135	0.068	S(12-304)
BC	9	301	6	873	0.421	0.083	0.225	0.271	0.694	0.088	0.124	0.094	S(14-301)
BC	9	304	7	399	0.531	0.058	0.261	0.15	0.689	0.108	0.135	0.068	S(12-304)
BC	9	400	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(14-402)
BC	9	402	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(14-402)
BC	9	403	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(14-402)
BC	9	500	0	1396	0.523	0.061	0.214	0.202	0.658	0.117	0.173	0.052	S(14-500)
BC	9	600	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	9	602	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	9	603	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	9	604	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	9	702	1	1599	0.425	0.088	0.22	0.267	0.68	0.102	0.15	0.068	S(14-702)
BC	9	1201	1	460	0.647	0.201	0.105	0.048	0.747	0.169	0.073	0.012	Developed
BC	9	1203	91	565	0.652	0.143	0.165	0.039	0.712	0.135	0.127	0.026	Developed
BC	9	1303	14	123	0.685	0.151	0.108	0.056	0.612	0.093	0.26	0.035	Developed
BC	9	1305	14	123	0.685	0.151	0.108	0.056	0.612	0.093	0.26	0.035	S(9-1303)
BC	9	1308	14	123	0.685	0.151	0.108	0.056	0.612	0.093	0.26	0.035	S(9-1303)
BC	9	1403	12	1138	0.685	0.161	0.14	0.013	0.764	0.133	0.093	0.011	S(13-1403)
BC	9	1802	4	1002	0.473	0.069	0.343	0.115	0.724	0.104	0.107	0.066	S(13-1802)
BC	12	100	17	410	0.639	0.108	0.123	0.13	0.788	0.099	0.068	0.045	S(12-105)
BC	12	101	2	342	0.609	0.127	0.129	0.135	0.774	0.114	0.062	0.05	Developed
BC	12	104	17	410	0.639	0.108	0.123	0.13	0.788	0.099	0.068	0.045	S(12-105)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
BC	12	105	17	410	0.639	0.108	0.123	0.13	0.788	0.099	0.068	0.045	Developed
BC	12	106	1	2369	0.286	0.072	0.378	0.264	0.687	0.08	0.127	0.107	S(13-106)
BC	12	201	8	576	0.374	0.067	0.292	0.268	0.691	0.09	0.144	0.075	S(14-201)
BC	12	204	1	403	0.663	0.095	0.134	0.108	0.799	0.073	0.085	0.044	Developed
BC	12	206	17	571	0.678	0.114	0.156	0.052	0.71	0.093	0.14	0.057	S(14-206)
BC	12	208	4	785	0.24	0.086	0.441	0.234	0.625	0.125	0.179	0.071	S(14-208)
BC	12	300	7	399	0.531	0.058	0.261	0.15	0.689	0.108	0.135	0.068	S(12-304)
BC	12	301	6	873	0.421	0.083	0.225	0.271	0.694	0.088	0.124	0.094	S(14-301)
BC	12	303	7	399	0.531	0.058	0.261	0.15	0.689	0.108	0.135	0.068	S(12-304)
BC	12	304	7	399	0.531	0.058	0.261	0.15	0.689	0.108	0.135	0.068	Developed
BC	12	400	1	3209	0.283	0.081	0.376	0.261	0.73	0.107	0.105	0.058	S(13-402)
BC	12	402	1	3209	0.283	0.081	0.376	0.261	0.73	0.107	0.105	0.058	S(13-402)
BC	12	403	32	846	0.639	0.112	0.178	0.071	0.711	0.117	0.112	0.06	S(13-403)
BC	12	500	1	2920	0.592	0.12	0.157	0.132	0.827	0.102	0.055	0.016	S(13-500)
BC	12	600	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	12	602	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	12	603	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	12	604	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	12	702	1	1809	0.478	0.097	0.166	0.259	0.729	0.101	0.099	0.071	S(13-702)
BC	12	1001	6	1205	0.654	0.059	0.141	0.146	0.788	0.073	0.082	0.057	S(13-1001)
BC	12	1201	5	754	0.699	0.162	0.077	0.062	0.773	0.14	0.054	0.033	S(4-1201)
BC	12	1203	4	622	0.688	0.171	0.087	0.054	0.796	0.093	0.092	0.019	S(4-1203)
BC	12	1303	1	290	0.69	0.134	0.106	0.071	0.765	0.127	0.08	0.029	S(4-1303)
BC	12	1305	1	290	0.69	0.134	0.106	0.071	0.765	0.127	0.08	0.029	S(4-1303)
BC	12	1308	1	290	0.69	0.134	0.106	0.071	0.765	0.127	0.08	0.029	S(4-1303)
BC	12	1403	12	1138	0.685	0.161	0.14	0.013	0.764	0.133	0.093	0.011	S(13-1403)
BC	12	1802	4	1002	0.473	0.069	0.343	0.115	0.724	0.104	0.107	0.066	S(13-1802)
BC	13	100	1	2369	0.286	0.072	0.378	0.264	0.687	0.08	0.127	0.107	S(13-106)
BC	13	101	2	342	0.609	0.127	0.129	0.135	0.774	0.114	0.062	0.05	S(12-101)
BC	13	104	1	2369	0.286	0.072	0.378	0.264	0.687	0.08	0.127	0.107	S(13-106)
BC	13	105	1	2369	0.286	0.072	0.378	0.264	0.687	0.08	0.127	0.107	S(13-106)
BC	13	106	1	2369	0.286	0.072	0.378	0.264	0.687	0.08	0.127	0.107	Developed
BC	13	201	12	366	0.558	0.082	0.22	0.14	0.762	0.092	0.102	0.043	Developed
BC	13	204	1	1281	0.709	0.081	0.101	0.108	0.738	0.084	0.108	0.07	Developed
BC	13	205	1	1281	0.709	0.081	0.101	0.108	0.738	0.084	0.108	0.07	S(13-204)
BC	13	206	17	571	0.678	0.114	0.156	0.052	0.71	0.093	0.14	0.057	S(14-206)
BC	13	208	4	785	0.24	0.086	0.441	0.234	0.625	0.125	0.179	0.071	S(14-208)
BC	13	300	2	1786	0.32	0.082	0.299	0.299	0.681	0.091	0.121	0.108	S(13-301)
BC	13	301	2	1786	0.32	0.082	0.299	0.299	0.681	0.091	0.121	0.108	Developed
BC	13	303	13	1560	0.376	0.062	0.311	0.251	0.731	0.112	0.085	0.073	Developed
BC	13	304	5	884	0.45	0.088	0.254	0.209	0.598	0.098	0.214	0.09	Developed
BC	13	400	1	3209	0.283	0.081	0.376	0.261	0.73	0.107	0.105	0.058	S(13-402)
BC	13	402	1	3209	0.283	0.081	0.376	0.261	0.73	0.107	0.105	0.058	Developed
BC	13	403	32	846	0.639	0.112	0.178	0.071	0.711	0.117	0.112	0.06	Developed
BC	13	500	1	2920	0.592	0.12	0.157	0.132	0.827	0.102	0.055	0.016	Developed
BC	13	600	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	13	602	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	13	603	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	13	604	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	13	702	1	1809	0.478	0.097	0.166	0.259	0.729	0.101	0.099	0.071	Developed
BC	13	1001	6	1205	0.654	0.059	0.141	0.146	0.788	0.073	0.082	0.057	Developed
BC	13	1201	5	527	0.68	0.147	0.131	0.042	0.705	0.131	0.129	0.035	Developed
BC	13	1203	1	838	0.696	0.102	0.178	0.025	0.694	0.098	0.168	0.04	Developed
BC	13	1303	21	464	0.587	0.104	0.201	0.108	0.703	0.115	0.146	0.036	Developed
BC	13	1305	21	464	0.587	0.104	0.201	0.108	0.703	0.115	0.146	0.036	S(13-1303)
BC	13	1308	21	464	0.587	0.104	0.201	0.108	0.703	0.115	0.146	0.036	S(13-1303)
BC	13	1403	12	1138	0.685	0.161	0.14	0.013	0.764	0.133	0.093	0.011	Developed
BC	13	1802	4	1002	0.473	0.069	0.343	0.115	0.724	0.104	0.107	0.066	Developed
BC	14	100	1	1267	0.361	0.08	0.305	0.254	0.71	0.088	0.142	0.06	S(14-105)
BC	14	101	3	473	0.551	0.076	0.14	0.233	0.666	0.092	0.139	0.104	Developed
BC	14	104	0	1145	0.41	0.153	0.207	0.23	0.761	0.085	0.097	0.057	Developed
BC	14	105	1	1267	0.361	0.08	0.305	0.254	0.71	0.088	0.142	0.06	Developed
BC	14	106	51	400	0.631	0.073	0.156	0.139	0.684	0.087	0.129	0.099	Developed
BC	14	201	8	576	0.374	0.067	0.292	0.268	0.691	0.09	0.144	0.075	Developed
BC	14	204	0	1046	0.686	0.079	0.101	0.133	0.743	0.078	0.101	0.078	Developed
BC	14	206	17	571	0.678	0.114	0.156	0.052	0.71	0.093	0.14	0.057	Developed
BC	14	208	4	785	0.24	0.086	0.441	0.234	0.625	0.125	0.179	0.071	Developed
BC	14	300	1	1163	0.387	0.082	0.239	0.291	0.619	0.092	0.2	0.089	S(14-304)
BC	14	301	6	873	0.421	0.083	0.225	0.271	0.694	0.088	0.124	0.094	Developed
BC	14	303	13	1560	0.376	0.062	0.311	0.251	0.731	0.112	0.085	0.073	S(13-303)
BC	14	304	1	1163	0.387	0.082	0.239	0.291	0.619	0.092	0.2	0.089	Developed
BC	14	400	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(14-402)
BC	14	402	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	Developed
BC	14	403	4	954	0.571	0.104	0.15	0.176	0.711	0.12	0.111	0.057	Developed

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
BC	14	500	0	1396	0.523	0.061	0.214	0.202	0.658	0.117	0.173	0.052	Developed
BC	14	600	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	14	602	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	14	603	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	Developed
BC	14	604	0	690	0.778	0.058	0.093	0.07	0.746	0.114	0.092	0.047	S(14-603)
BC	14	702	1	1599	0.425	0.088	0.22	0.267	0.68	0.102	0.15	0.068	Developed
BC	14	1001	6	1205	0.654	0.059	0.141	0.146	0.788	0.073	0.082	0.057	S(13-1001)
BC	14	1201	1	642	0.687	0.153	0.124	0.036	0.71	0.138	0.118	0.034	Developed
BC	14	1203	3	829	0.62	0.109	0.219	0.052	0.702	0.101	0.163	0.033	Developed
BC	14	1303	1	632	0.523	0.07	0.201	0.206	0.691	0.106	0.163	0.039	Developed
BC	14	1305	1	632	0.523	0.07	0.201	0.206	0.691	0.106	0.163	0.039	S(14-1303)
BC	14	1308	1	632	0.523	0.07	0.201	0.206	0.691	0.106	0.163	0.039	S(14-1303)
BC	14	1403	12	1138	0.685	0.161	0.14	0.013	0.764	0.133	0.093	0.011	S(13-1403)
BC	14	1802	4	1002	0.473	0.069	0.343	0.115	0.724	0.104	0.107	0.066	S(13-1802)
BC	14	3500	3	211	0.456	0.112	0.262	0.17	0.631	0.108	0.164	0.097	Developed
AB	4	101	0	27	0.679	0.125	0.068	0.128	0.732	0.119	0.06	0.088	Developed
AB	4	105	70	509	0.724	0.103	0.051	0.123	0.798	0.098	0.033	0.07	Developed
AB	4	203	83	323	0.759	0.099	0.084	0.057	0.796	0.103	0.05	0.051	S(4-204)
AB	4	204	83	323	0.759	0.099	0.084	0.057	0.796	0.103	0.05	0.051	Developed
AB	4	216	83	323	0.759	0.099	0.084	0.057	0.796	0.103	0.05	0.051	S(4-G2)
AB	4	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	4	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(14-500)
AB	4	601	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	4	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	4	1200	28	450	0.768	0.165	0.035	0.032	0.78	0.138	0.049	0.033	S(4-1201)
AB	4	1201	28	450	0.768	0.165	0.035	0.032	0.78	0.138	0.049	0.033	Developed
AB	4	1203	156	364	0.693	0.12	0.17	0.017	0.7	0.114	0.169	0.016	Developed
AB	4	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-1303)
AB	5	101	2	392	0.546	0.118	0.141	0.196	0.747	0.093	0.097	0.064	S(9-101)
AB	5	105	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(9-105)
AB	5	203	1	225	0.704	0.105	0.09	0.102	0.826	0.065	0.072	0.038	S(9-203)
AB	5	204	1	623	0.704	0.106	0.095	0.094	0.831	0.078	0.062	0.029	S(9-204)
AB	5	216	1	623	0.703	0.108	0.095	0.094	0.83	0.078	0.062	0.03	S(9-G2)
AB	5	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	5	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(14-500)
AB	5	601	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	5	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	5	1200	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(9-1201)
AB	5	1201	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(9-1201)
AB	5	1203	1	444	0.634	0.097	0.094	0.176	0.725	0.11	0.126	0.04	S(9-1203)
AB	5	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-1303)
AB	6	101	2	392	0.546	0.118	0.141	0.196	0.747	0.093	0.097	0.064	S(9-101)
AB	6	105	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(9-105)
AB	6	203	1	225	0.704	0.105	0.09	0.102	0.826	0.065	0.072	0.038	S(9-203)
AB	6	204	1	623	0.704	0.106	0.095	0.094	0.831	0.078	0.062	0.029	S(9-204)
AB	6	216	1	623	0.703	0.108	0.095	0.094	0.83	0.078	0.062	0.03	S(9-G2)
AB	6	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	6	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(14-500)
AB	6	601	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	6	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	6	1200	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(9-1201)
AB	6	1201	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(9-1201)
AB	6	1203	1	444	0.634	0.097	0.094	0.176	0.725	0.11	0.126	0.04	S(9-1203)
AB	6	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-1303)
AB	9	101	2	392	0.546	0.118	0.141	0.196	0.747	0.093	0.097	0.064	Developed
AB	9	104	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(9-105)
AB	9	105	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	Developed
AB	9	109	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(9-105)
AB	9	203	1	225	0.704	0.105	0.09	0.102	0.826	0.065	0.072	0.038	Developed
AB	9	204	1	623	0.704	0.106	0.095	0.094	0.831	0.078	0.062	0.029	Developed
AB	9	216	1	623	0.703	0.108	0.095	0.094	0.83	0.078	0.062	0.03	S(9-G2)
AB	9	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	Developed
AB	9	304	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	9	305	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	9	306	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	9	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(14-500)
AB	9	600	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	9	601	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	9	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	Developed
AB	9	604	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	9	1150	1	648	0.625	0.115	0.123	0.137	0.804	0.085	0.075	0.036	S(9-F1)
AB	9	1200	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(9-1201)
AB	9	1201	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	Developed
AB	9	1203	1	444	0.634	0.097	0.094	0.176	0.725	0.11	0.126	0.04	Developed

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
AB	9	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	Developed
AB	9	1404	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-G10)
AB	9	1500	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-G10)
AB	9	1550	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-G10)
AB	10	101	2	392	0.546	0.118	0.141	0.196	0.747	0.093	0.097	0.064	S(9-101)
AB	10	104	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(9-105)
AB	10	105	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(9-105)
AB	10	203	1	225	0.704	0.105	0.09	0.102	0.826	0.065	0.072	0.038	S(9-203)
AB	10	204	1	623	0.704	0.106	0.095	0.094	0.831	0.078	0.062	0.029	S(9-204)
AB	10	216	1	623	0.703	0.108	0.095	0.094	0.83	0.078	0.062	0.03	S(9-G2)
AB	10	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	10	304	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	10	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(14-500)
AB	10	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	10	604	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	10	1150	1	648	0.625	0.115	0.123	0.137	0.804	0.085	0.075	0.036	S(9-F1)
AB	10	1200	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(9-1201)
AB	10	1201	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(9-1201)
AB	10	1203	1	444	0.634	0.097	0.094	0.176	0.725	0.11	0.126	0.04	S(9-1203)
AB	10	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-1303)
AB	10	1550	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-G10)
AB	14	101	2	392	0.546	0.118	0.141	0.196	0.747	0.093	0.097	0.064	S(9-101)
AB	14	104	164	589	0.685	0.104	0.117	0.095	0.727	0.087	0.117	0.069	Developed
AB	14	105	164	589	0.685	0.104	0.117	0.095	0.727	0.087	0.117	0.069	S(14-104)
AB	14	109	164	589	0.685	0.104	0.117	0.095	0.727	0.087	0.117	0.069	S(14-104)
AB	14	201	8	576	0.374	0.067	0.292	0.268	0.691	0.09	0.144	0.075	S(BC-14-201)
AB	14	203	4	378	0.733	0.113	0.069	0.085	0.78	0.082	0.076	0.062	S(14-204)
AB	14	204	4	378	0.733	0.113	0.069	0.085	0.78	0.082	0.076	0.062	Developed
AB	14	216	4	378	0.733	0.113	0.069	0.085	0.78	0.082	0.076	0.062	S(14-G2)
AB	14	217	4	378	0.733	0.113	0.069	0.085	0.78	0.082	0.076	0.062	S(14-G2)
AB	14	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	14	304	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	14	306	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(9-302)
AB	14	402	2	1259	0.303	0.08	0.343	0.273	0.749	0.101	0.107	0.043	S(BC-14-402)
AB	14	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	Developed
AB	14	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	14	604	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(9-602)
AB	14	702	1	1599	0.425	0.088	0.22	0.267	0.68	0.102	0.15	0.068	S(BC-14-702)
AB	14	1150	4	589	0.797	0.113	0.03	0.06	0.686	0.095	0.144	0.075	S(14-F1)
AB	14	1200	20	343	0.716	0.152	0.089	0.042	0.71	0.15	0.118	0.022	S(14-1201)
AB	14	1201	20	343	0.716	0.152	0.089	0.042	0.71	0.15	0.118	0.022	Developed
AB	14	1203	1	444	0.634	0.097	0.094	0.176	0.725	0.11	0.126	0.04	S(9-1203)
AB	14	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-1303)
AB	14	1404	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-G10)
AB	14	1550	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(9-G10)
SK	5	101	111	250	0.693	0.107	0.086	0.113	0.742	0.106	0.077	0.075	S(6-101)
SK	5	105	58	598	0.499	0.078	0.259	0.163	0.756	0.109	0.089	0.045	S(9-105)
SK	5	203	36	220	0.748	0.087	0.079	0.087	0.792	0.083	0.071	0.054	S(6-203)
SK	5	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(MB-6-302)
SK	5	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(MB-6-602)
SK	5	1201	33	239	0.644	0.147	0.127	0.082	0.699	0.144	0.104	0.053	S(6-1201)
SK	5	1303	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(MB-9-1303)
SK	6	101	111	250	0.693	0.107	0.086	0.113	0.742	0.106	0.077	0.075	Developed
SK	6	105	58	598	0.499	0.078	0.259	0.163	0.756	0.109	0.089	0.045	S(9-105)
SK	6	203	36	220	0.748	0.087	0.079	0.087	0.792	0.083	0.071	0.054	Developed
SK	6	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(MB-6-302)
SK	6	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(MB-6-602)
SK	6	701	69	500	0.67	0.117	0.119	0.094	0.639	0.091	0.151	0.119	S(MB-6-701)
SK	6	1201	33	239	0.644	0.147	0.127	0.082	0.699	0.144	0.104	0.053	Developed
SK	6	1203	33	239	0.644	0.147	0.127	0.082	0.699	0.144	0.104	0.053	S(6-1201)
SK	6	1303	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(MB-9-1303)
SK	6	1404	0	426	0.659	0.105	0.153	0.083	0.63	0.091	0.25	0.029	S(QC-6-G10)
SK	6	1500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
SK	9	101	16	453	0.495	0.112	0.176	0.217	0.771	0.102	0.075	0.052	Developed
SK	9	105	58	598	0.499	0.078	0.259	0.163	0.756	0.109	0.089	0.045	Developed
SK	9	107	16	453	0.495	0.112	0.176	0.217	0.771	0.102	0.075	0.052	S(9-101)
SK	9	203	11	458	0.544	0.132	0.144	0.18	0.857	0.056	0.058	0.03	Developed
SK	9	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(MB-6-302)
SK	9	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(MB-6-602)
SK	9	701	69	500	0.67	0.117	0.119	0.094	0.639	0.091	0.151	0.119	S(MB-6-701)
SK	9	1201	15	582	0.636	0.232	0.08	0.053	0.75	0.154	0.073	0.023	Developed
SK	9	1203	99	464	0.678	0.165	0.12	0.037	0.694	0.12	0.142	0.044	Developed
SK	9	1303	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(MB-9-1303)
SK	9	1404	0	426	0.659	0.105	0.153	0.083	0.63	0.091	0.25	0.029	S(QC-6-G10)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
SK	9	1500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
SK	9	2201	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	S(QC-6-2201)
SK	9	3405	2	384	0.75	0.125	0.103	0.022	0.743	0.095	0.136	0.027	S(QC-6-3402)
SK	10	101	16	453	0.495	0.112	0.176	0.217	0.771	0.102	0.075	0.052	S(9-101)
SK	10	105	58	598	0.499	0.078	0.259	0.163	0.756	0.109	0.089	0.045	S(9-105)
SK	10	203	11	458	0.544	0.132	0.144	0.18	0.857	0.056	0.058	0.03	S(9-203)
SK	10	204	11	458	0.544	0.132	0.144	0.18	0.857	0.056	0.058	0.03	S(9-203)
SK	10	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(MB-6-302)
SK	10	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(MB-6-602)
SK	10	1201	15	582	0.636	0.232	0.08	0.053	0.75	0.154	0.073	0.023	S(9-1201)
SK	10	1203	99	464	0.678	0.165	0.12	0.037	0.694	0.12	0.142	0.044	S(9-1203)
SK	10	1303	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(MB-9-1303)
SK	10	1404	0	426	0.659	0.105	0.153	0.083	0.63	0.091	0.25	0.029	S(QC-6-G10)
SK	10	2201	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	S(QC-6-2201)
SK	10	3405	2	384	0.75	0.125	0.103	0.022	0.743	0.095	0.136	0.027	S(QC-6-3402)
MB	3	101	1	300	0.527	0.104	0.109	0.26	0.756	0.104	0.073	0.067	S(6-101)
MB	3	105	2	207	0.348	0.063	0.165	0.424	0.715	0.094	0.095	0.095	S(6-105)
MB	3	203	0	343	0.647	0.096	0.099	0.158	0.819	0.07	0.067	0.043	S(6-203)
MB	3	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(6-602)
MB	3	1201	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	3	1203	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	3	1308	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(9-1303)
MB	5	101	1	300	0.527	0.104	0.109	0.26	0.756	0.104	0.073	0.067	S(6-101)
MB	5	105	2	207	0.348	0.063	0.165	0.424	0.715	0.094	0.095	0.095	S(6-105)
MB	5	203	0	343	0.647	0.096	0.099	0.158	0.819	0.07	0.067	0.043	S(6-203)
MB	5	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(6-302)
MB	5	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(6-602)
MB	5	1201	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	5	1203	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	5	1308	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(9-1303)
MB	6	101	1	300	0.527	0.104	0.109	0.26	0.756	0.104	0.073	0.067	Developed
MB	6	105	2	207	0.348	0.063	0.165	0.424	0.715	0.094	0.095	0.095	Developed
MB	6	203	0	343	0.647	0.096	0.099	0.158	0.819	0.07	0.067	0.043	Developed
MB	6	209	1	326	0.372	0.079	0.176	0.372	0.744	0.074	0.092	0.09	Developed
MB	6	211	40	195	0.61	0.102	0.197	0.092	0.721	0.089	0.13	0.06	Developed
MB	6	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	Developed
MB	6	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	Developed
MB	6	701	69	500	0.67	0.117	0.119	0.094	0.639	0.091	0.151	0.119	Developed
MB	6	1201	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	Developed
MB	6	1203	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	6	1205	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	6	1308	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(9-1303)
MB	6	1404	0	509	0.662	0.102	0.166	0.07	0.682	0.073	0.232	0.013	S(QC-6-G11)
MB	6	1500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
MB	6	2104	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	S(QC-6-2108)
MB	6	2201	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	S(QC-6-2201)
MB	6	3400	2	384	0.75	0.125	0.103	0.022	0.743	0.095	0.136	0.027	S(QC-6-3402)
MB	9	101	3	287	0.412	0.116	0.15	0.322	0.715	0.105	0.092	0.088	Developed
MB	9	105	2	302	0.355	0.08	0.22	0.345	0.679	0.098	0.132	0.092	Developed
MB	9	203	0	258	0.529	0.166	0.109	0.195	0.821	0.072	0.067	0.04	Developed
MB	9	209	1	326	0.372	0.079	0.176	0.372	0.744	0.074	0.092	0.09	S(6-209)
MB	9	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(6-302)
MB	9	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(6-602)
MB	9	701	69	500	0.67	0.117	0.119	0.094	0.639	0.091	0.151	0.119	S(6-701)
MB	9	1201	3	322	0.533	0.187	0.122	0.158	0.749	0.193	0.046	0.011	Developed
MB	9	1203	3	322	0.533	0.187	0.122	0.158	0.749	0.193	0.046	0.011	S(9-1201)
MB	9	1205	3	322	0.533	0.187	0.122	0.158	0.749	0.193	0.046	0.011	S(9-1201)
MB	9	1303	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	Developed
MB	9	1308	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(9-1303)
MB	9	1404	0	509	0.662	0.102	0.166	0.07	0.682	0.073	0.232	0.013	S(QC-6-G11)
MB	9	1500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
MB	9	2104	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	S(QC-6-2108)
MB	9	2201	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	S(QC-6-2201)
MB	9	3000	6	463	0.659	0.139	0.156	0.046	0.692	0.112	0.175	0.021	S(QC-6-3000)
MB	9	3400	2	384	0.75	0.125	0.103	0.022	0.743	0.095	0.136	0.027	S(QC-6-3402)
MB	9	3500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
MB	10	101	1	300	0.527	0.104	0.109	0.26	0.756	0.104	0.073	0.067	S(6-101)
MB	10	105	2	302	0.355	0.08	0.22	0.345	0.679	0.098	0.132	0.092	S(9-105)
MB	10	203	0	258	0.529	0.166	0.109	0.195	0.821	0.072	0.067	0.04	S(9-203)
MB	10	209	1	326	0.372	0.079	0.176	0.372	0.744	0.074	0.092	0.09	S(6-209)
MB	10	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(6-302)
MB	10	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(6-602)
MB	10	701	69	500	0.67	0.117	0.119	0.094	0.639	0.091	0.151	0.119	S(6-701)
MB	10	1201	3	322	0.533	0.187	0.122	0.158	0.749	0.193	0.046	0.011	S(9-1201)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
MB	10	1203	3	322	0.533	0.187	0.122	0.158	0.749	0.193	0.046	0.011	S(9-1201)
MB	10	1205	3	322	0.533	0.187	0.122	0.158	0.749	0.193	0.046	0.011	S(9-1201)
MB	10	1308	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(9-1303)
MB	10	1404	0	509	0.662	0.102	0.166	0.07	0.682	0.073	0.232	0.013	S(QC-6-G11)
MB	10	1500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
MB	10	2104	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	S(QC-6-2108)
MB	10	2201	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	S(QC-6-2201)
MB	10	3000	6	463	0.659	0.139	0.156	0.046	0.692	0.112	0.175	0.021	S(QC-6-3000)
MB	10	3400	2	384	0.75	0.125	0.103	0.022	0.743	0.095	0.136	0.027	S(QC-6-3402)
MB	10	3500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
MB	15	101	1	300	0.527	0.104	0.109	0.26	0.756	0.104	0.073	0.067	S(6-101)
MB	15	103	2	207	0.348	0.063	0.165	0.424	0.715	0.094	0.095	0.095	S(6-105)
MB	15	105	2	207	0.348	0.063	0.165	0.424	0.715	0.094	0.095	0.095	S(6-105)
MB	15	203	0	343	0.647	0.096	0.099	0.158	0.819	0.07	0.067	0.043	S(6-203)
MB	15	302	11	319	0.545	0.092	0.101	0.263	0.688	0.11	0.122	0.08	S(6-302)
MB	15	602	45	322	0.643	0.095	0.151	0.11	0.767	0.089	0.082	0.063	S(6-602)
MB	15	1201	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	15	1203	1	264	0.536	0.133	0.124	0.208	0.708	0.14	0.11	0.041	S(6-1201)
MB	15	1308	15	156	0.632	0.12	0.153	0.095	0.733	0.11	0.112	0.044	S(9-1303)
ON	6	101	0	375	0.499	0.096	0.139	0.265	0.751	0.106	0.09	0.053	Developed
ON	6	105	1	708	0.442	0.088	0.106	0.364	0.726	0.093	0.108	0.073	Developed
ON	6	202	94	739	0.596	0.104	0.207	0.094	0.716	0.097	0.138	0.05	Developed
ON	6	203	0	384	0.601	0.102	0.129	0.168	0.799	0.078	0.079	0.044	Developed
ON	6	209	1	662	0.459	0.083	0.138	0.32	0.787	0.058	0.102	0.053	Developed
ON	6	302	0	494	0.42	0.074	0.14	0.365	0.667	0.114	0.113	0.106	Developed
ON	6	401	2	578	0.616	0.126	0.147	0.111	0.67	0.113	0.169	0.047	S(QC-6-401)
ON	6	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-6-602)
ON	6	701	2	556	0.479	0.08	0.131	0.31	0.698	0.094	0.136	0.073	Developed
ON	6	1200	0	729	0.522	0.115	0.13	0.233	0.725	0.145	0.103	0.026	S(6-1201)
ON	6	1201	0	729	0.522	0.115	0.13	0.233	0.725	0.145	0.103	0.026	Developed
ON	6	1203	140	905	0.708	0.117	0.139	0.036	0.718	0.111	0.132	0.039	Developed
ON	6	1303	0	454	0.582	0.107	0.106	0.204	0.706	0.108	0.129	0.057	Developed
ON	6	1400	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	S(QC-6-1401)
ON	6	1401	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	S(QC-6-1401)
ON	6	4500	0	509	0.662	0.102	0.166	0.07	0.682	0.073	0.232	0.013	S(QC-6-G11)
ON	6	5500	0	509	0.662	0.102	0.166	0.07	0.682	0.073	0.232	0.013	S(QC-6-G11)
ON	8	101	0	375	0.499	0.096	0.139	0.265	0.751	0.106	0.09	0.053	S(6-101)
ON	8	105	1	708	0.442	0.088	0.106	0.364	0.726	0.093	0.108	0.073	S(6-105)
ON	8	202	94	739	0.596	0.104	0.207	0.094	0.716	0.097	0.138	0.05	S(6-202)
ON	8	203	0	384	0.601	0.102	0.129	0.168	0.799	0.078	0.079	0.044	S(6-203)
ON	8	209	1	662	0.459	0.083	0.138	0.32	0.787	0.058	0.102	0.053	S(6-209)
ON	8	302	0	494	0.42	0.074	0.14	0.365	0.667	0.114	0.113	0.106	S(6-302)
ON	8	401	2	461	0.627	0.12	0.168	0.086	0.678	0.109	0.16	0.053	S(QC-8-401)
ON	8	602	2	264	0.734	0.092	0.088	0.087	0.76	0.077	0.097	0.066	S(QC-8-602)
ON	8	701	2	556	0.479	0.08	0.131	0.31	0.698	0.094	0.136	0.073	S(6-701)
ON	8	1200	1	387	0.692	0.145	0.114	0.05	0.69	0.131	0.139	0.04	S(QC-8-1201)
ON	8	1303	0	454	0.582	0.107	0.106	0.204	0.706	0.108	0.129	0.057	S(6-1303)
ON	8	1401	2	524	0.623	0.108	0.19	0.08	0.695	0.069	0.221	0.014	S(QC-8-1401)
ON	8	4500	0	594	0.642	0.103	0.208	0.047	0.654	0.061	0.274	0.01	S(QC-8-G11)
ON	8	5500	0	594	0.642	0.103	0.208	0.047	0.654	0.061	0.274	0.01	S(QC-8-G11)
ON	15	101	0	375	0.499	0.096	0.139	0.265	0.751	0.106	0.09	0.053	S(6-101)
ON	15	105	1	708	0.442	0.088	0.106	0.364	0.726	0.093	0.108	0.073	S(6-105)
ON	15	202	94	739	0.596	0.104	0.207	0.094	0.716	0.097	0.138	0.05	S(6-202)
ON	15	203	0	384	0.601	0.102	0.129	0.168	0.799	0.078	0.079	0.044	S(6-203)
ON	15	209	1	662	0.459	0.083	0.138	0.32	0.787	0.058	0.102	0.053	S(6-209)
ON	15	302	0	494	0.42	0.074	0.14	0.365	0.667	0.114	0.113	0.106	S(6-302)
ON	15	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-6-401)
ON	15	701	2	556	0.479	0.08	0.131	0.31	0.698	0.094	0.136	0.073	S(6-701)
ON	15	1200	0	729	0.522	0.115	0.13	0.233	0.725	0.145	0.103	0.026	S(6-1201)
ON	15	1303	0	454	0.582	0.107	0.106	0.204	0.706	0.108	0.129	0.057	S(6-1303)
ON	15	1400	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	S(QC-6-1401)
ON	15	4500	0	509	0.662	0.102	0.166	0.07	0.682	0.073	0.232	0.013	S(QC-6-G11)
ON	15	5500	0	509	0.662	0.102	0.166	0.07	0.682	0.073	0.232	0.013	S(QC-6-G11)
QC	1	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(6-101)
QC	1	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(6-105)
QC	1	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(6-101)
QC	1	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(6-302)
QC	1	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(6-602)
QC	1	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(6-1201)
QC	1	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(6-1203)
QC	1	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(6-1303)
QC	2	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(6-101)
QC	2	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(6-105)
QC	2	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(6-101)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
QC	2	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(6-302)
QC	2	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(6-602)
QC	2	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(6-1201)
QC	2	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(6-1203)
QC	2	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(6-1303)
QC	3	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(6-101)
QC	3	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(6-105)
QC	3	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(6-101)
QC	3	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(6-302)
QC	3	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(6-602)
QC	3	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(6-1201)
QC	3	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(6-1203)
QC	3	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(6-1303)
QC	5	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	Developed
QC	5	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(6-105)
QC	5	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(6-101)
QC	5	202	1	836	0.612	0.101	0.125	0.162	0.707	0.098	0.141	0.054	S(6-202)
QC	5	203	0	395	0.683	0.084	0.126	0.107	0.756	0.081	0.108	0.055	S(6-203)
QC	5	209	9	507	0.631	0.078	0.144	0.146	0.737	0.076	0.113	0.073	S(6-209)
QC	5	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(6-302)
QC	5	401	2	578	0.616	0.126	0.147	0.111	0.67	0.113	0.169	0.047	S(6-401)
QC	5	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(6-602)
QC	5	701	0	498	0.616	0.093	0.147	0.143	0.656	0.092	0.17	0.082	S(6-701)
QC	5	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(6-1201)
QC	5	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(6-1203)
QC	5	1211	0	620	0.646	0.144	0.13	0.079	0.718	0.14	0.122	0.021	S(5-G9)
QC	5	1301	1	426	0.615	0.092	0.226	0.066	0.624	0.087	0.259	0.03	S(6-1301)
QC	5	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(6-1303)
QC	5	1401	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	S(6-1401)
QC	5	1405	0	362	0.669	0.102	0.161	0.068	0.685	0.091	0.191	0.033	S(6-1405)
QC	5	1550	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(5-G12)
QC	6	101	0	445	0.593	0.095	0.132	0.181	0.717	0.099	0.11	0.074	Developed
QC	6	102	0	369	0.655	0.103	0.144	0.098	0.679	0.088	0.166	0.067	Developed
QC	6	103	0	369	0.655	0.103	0.144	0.098	0.679	0.088	0.166	0.067	S(6-102)
QC	6	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	Developed
QC	6	107	0	369	0.655	0.103	0.144	0.098	0.679	0.088	0.166	0.067	S(6-102)
QC	6	202	1	836	0.612	0.101	0.125	0.162	0.707	0.098	0.141	0.054	Developed
QC	6	203	0	395	0.683	0.084	0.126	0.107	0.756	0.081	0.108	0.055	Developed
QC	6	209	9	507	0.631	0.078	0.144	0.146	0.737	0.076	0.113	0.073	Developed
QC	6	211	9	507	0.631	0.078	0.144	0.146	0.737	0.076	0.113	0.073	S(6-209)
QC	6	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	Developed
QC	6	401	2	578	0.616	0.126	0.147	0.111	0.67	0.113	0.169	0.047	Developed
QC	6	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	Developed
QC	6	701	0	498	0.616	0.093	0.147	0.143	0.656	0.092	0.17	0.082	Developed
QC	6	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	Developed
QC	6	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	Developed
QC	6	1205	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(6-1203)
QC	6	1206	4	558	0.656	0.171	0.102	0.07	0.718	0.137	0.123	0.021	Developed
QC	6	1211	0	620	0.646	0.144	0.13	0.079	0.718	0.14	0.122	0.021	S(6-G9)
QC	6	1301	1	426	0.615	0.092	0.226	0.066	0.624	0.087	0.259	0.03	Developed
QC	6	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	Developed
QC	6	1304	5	84	0.731	0.117	0.108	0.043	0.732	0.116	0.114	0.039	Developed
QC	6	1401	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	Developed
QC	6	1405	0	362	0.669	0.102	0.161	0.068	0.685	0.091	0.191	0.033	Developed
QC	6	1406	51	113	0.665	0.102	0.178	0.055	0.598	0.072	0.303	0.026	Developed
QC	6	1410	16	139	0.605	0.095	0.277	0.024	0.431	0.044	0.513	0.012	Developed
QC	6	1550	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(6-G12)
QC	6	1601	32	206	0.676	0.104	0.183	0.037	0.655	0.09	0.217	0.038	S(8-1601)
QC	6	1701	64	268	0.59	0.089	0.264	0.058	0.53	0.073	0.37	0.027	Developed
QC	6	1800	2	25	0.776	0.062	0.121	0.041	0.765	0.05	0.119	0.066	Developed
QC	6	1900	0	187	0.675	0.111	0.152	0.062	0.639	0.089	0.229	0.043	Developed
QC	6	2000	2	496	0.69	0.074	0.189	0.047	0.702	0.059	0.222	0.018	Developed
QC	6	2101	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	S(6-2108)
QC	6	2102	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	S(6-2108)
QC	6	2104	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	S(6-2108)
QC	6	2108	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	Developed
QC	6	2201	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	Developed
QC	6	2202	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	S(6-2201)
QC	6	2203	9	168	0.664	0.082	0.184	0.07	0.714	0.097	0.158	0.031	S(6-2201)
QC	6	2801	2	241	0.723	0.105	0.136	0.036	0.669	0.093	0.217	0.021	Developed
QC	6	2802	0	118	0.745	0.031	0.127	0.097	0.69	0.067	0.173	0.07	Developed
QC	6	3000	6	463	0.659	0.139	0.156	0.046	0.692	0.112	0.175	0.021	Developed
QC	6	3401	11	296	0.681	0.113	0.171	0.036	0.676	0.09	0.212	0.021	Developed
QC	6	3402	2	384	0.75	0.125	0.103	0.022	0.743	0.095	0.136	0.027	Developed

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
QC	6	3403	2	384	0.75	0.125	0.103	0.022	0.743	0.095	0.136	0.027	S(6-3402)
QC	6	3500	0	121	0.65	0.161	0.13	0.058	0.692	0.146	0.124	0.038	Developed
QC	6	3960	0	139	0.761	0.033	0.129	0.076	0.688	0.074	0.168	0.069	Developed
QC	7	101	0	325	0.549	0.086	0.207	0.157	0.647	0.095	0.169	0.089	Developed
QC	7	102	0	502	0.641	0.143	0.109	0.106	0.677	0.094	0.164	0.065	Developed
QC	7	103	0	329	0.763	0.094	0.086	0.057	0.642	0.088	0.171	0.1	Developed
QC	7	105	0	391	0.594	0.086	0.191	0.129	0.655	0.095	0.171	0.078	Developed
QC	7	107	0	502	0.641	0.143	0.109	0.106	0.677	0.094	0.164	0.065	S(7-102)
QC	7	202	16	454	0.665	0.096	0.156	0.082	0.662	0.089	0.193	0.056	Developed
QC	7	203	1	220	0.742	0.094	0.121	0.042	0.719	0.065	0.145	0.072	Developed
QC	7	209	4	294	0.734	0.058	0.125	0.082	0.771	0.08	0.099	0.05	Developed
QC	7	211	24	82	0.577	0.079	0.227	0.118	0.667	0.073	0.173	0.088	Developed
QC	7	302	0	395	0.632	0.128	0.14	0.1	0.666	0.112	0.154	0.068	Developed
QC	7	401	4	422	0.616	0.105	0.178	0.101	0.656	0.1	0.183	0.062	Developed
QC	7	602	2	328	0.683	0.095	0.172	0.05	0.726	0.085	0.146	0.043	Developed
QC	7	701	0	543	0.642	0.115	0.141	0.102	0.686	0.104	0.129	0.081	Developed
QC	7	1201	1	553	0.671	0.154	0.134	0.041	0.644	0.125	0.206	0.025	Developed
QC	7	1203	0	476	0.666	0.167	0.113	0.053	0.684	0.124	0.159	0.032	Developed
QC	7	1205	0	476	0.666	0.167	0.113	0.053	0.684	0.124	0.159	0.032	S(7-1203)
QC	7	1206	1	510	0.66	0.172	0.077	0.091	0.679	0.142	0.146	0.034	Developed
QC	7	1211	0	553	0.674	0.156	0.126	0.044	0.657	0.126	0.19	0.026	S(7-G9)
QC	7	1301	1	417	0.586	0.092	0.267	0.055	0.657	0.094	0.223	0.026	Developed
QC	7	1303	0	331	0.653	0.106	0.188	0.053	0.656	0.101	0.206	0.037	Developed
QC	7	1304	1	134	0.709	0.115	0.147	0.029	0.701	0.112	0.155	0.032	Developed
QC	7	1401	0	554	0.612	0.083	0.245	0.06	0.747	0.099	0.142	0.011	Developed
QC	7	1405	0	637	0.661	0.12	0.167	0.052	0.707	0.082	0.187	0.024	Developed
QC	7	1406	0	554	0.612	0.083	0.245	0.06	0.747	0.099	0.142	0.011	S(7-1401)
QC	7	1410	1	46	0.48	0.063	0.454	0.003	0.585	0.08	0.315	0.02	Developed
QC	7	1550	0	386	0.7	0.095	0.121	0.083	0.723	0.071	0.191	0.015	S(7-G12)
QC	7	1701	105	278	0.635	0.09	0.226	0.049	0.533	0.062	0.376	0.029	S(8-1701)
QC	7	1900	8	246	0.652	0.11	0.161	0.077	0.701	0.095	0.171	0.034	Developed
QC	7	2000	1	284	0.671	0.056	0.233	0.04	0.698	0.065	0.217	0.02	Developed
QC	7	2108	10	377	0.665	0.142	0.133	0.06	0.661	0.088	0.224	0.027	S(6-2108)
QC	7	2201	0	106	0.637	0.106	0.232	0.024	0.714	0.089	0.164	0.032	Developed
QC	7	2202	0	106	0.637	0.106	0.232	0.024	0.714	0.089	0.164	0.032	S(7-2201)
QC	7	2801	4	198	0.705	0.12	0.135	0.039	0.688	0.089	0.189	0.035	Developed
QC	7	2802	1	119	0.73	0.05	0.136	0.084	0.718	0.078	0.139	0.065	Developed
QC	7	3000	6	463	0.659	0.139	0.156	0.046	0.692	0.112	0.175	0.021	S(6-3000)
QC	7	3401	1	386	0.62	0.09	0.231	0.058	0.729	0.082	0.172	0.017	Developed
QC	7	3402	0	189	0.655	0.152	0.153	0.04	0.701	0.112	0.156	0.031	Developed
QC	7	3403	0	189	0.655	0.152	0.153	0.04	0.701	0.112	0.156	0.031	S(7-3402)
QC	7	3500	1	57	0.641	0.145	0.151	0.063	0.657	0.11	0.173	0.06	Developed
QC	7	3960	0	68	0.665	0.163	0.11	0.062	0.684	0.06	0.204	0.051	Developed
QC	8	101	1	191	0.611	0.108	0.117	0.163	0.666	0.103	0.143	0.088	Developed
QC	8	102	10	342	0.702	0.115	0.092	0.091	0.693	0.098	0.142	0.067	Developed
QC	8	103	23	229	0.749	0.082	0.099	0.07	0.656	0.069	0.156	0.119	Developed
QC	8	105	0	283	0.572	0.106	0.127	0.195	0.635	0.096	0.17	0.099	Developed
QC	8	107	10	342	0.702	0.115	0.092	0.091	0.693	0.098	0.142	0.067	S(8-102)
QC	8	202	3	442	0.621	0.123	0.127	0.13	0.671	0.102	0.165	0.062	Developed
QC	8	203	9	201	0.612	0.13	0.195	0.062	0.794	0.08	0.069	0.057	Developed
QC	8	209	143	330	0.676	0.092	0.144	0.088	0.727	0.076	0.109	0.088	Developed
QC	8	211	143	330	0.676	0.092	0.144	0.088	0.727	0.076	0.109	0.088	S(8-209)
QC	8	302	0	301	0.625	0.11	0.128	0.138	0.673	0.103	0.154	0.07	Developed
QC	8	401	2	461	0.627	0.12	0.168	0.086	0.678	0.109	0.16	0.053	Developed
QC	8	602	2	264	0.734	0.092	0.088	0.087	0.76	0.077	0.097	0.066	Developed
QC	8	701	0	376	0.607	0.101	0.162	0.13	0.658	0.092	0.161	0.088	Developed
QC	8	1201	1	387	0.692	0.145	0.114	0.05	0.69	0.131	0.139	0.04	Developed
QC	8	1203	2	328	0.611	0.129	0.162	0.098	0.538	0.107	0.292	0.063	Developed
QC	8	1205	2	238	0.787	0.091	0.11	0.012	0.722	0.097	0.158	0.023	Developed
QC	8	1206	12	390	0.682	0.157	0.125	0.036	0.701	0.125	0.149	0.025	Developed
QC	8	1211	1	390	0.7	0.126	0.132	0.042	0.685	0.124	0.157	0.034	S(8-G9)
QC	8	1301	7	289	0.637	0.095	0.232	0.037	0.667	0.088	0.217	0.028	Developed
QC	8	1303	28	308	0.691	0.117	0.144	0.048	0.662	0.112	0.181	0.046	Developed
QC	8	1304	0	119	0.747	0.126	0.101	0.026	0.717	0.11	0.136	0.037	Developed
QC	8	1401	2	524	0.623	0.108	0.19	0.08	0.695	0.069	0.221	0.014	Developed
QC	8	1404	19	69	0.5	0.062	0.428	0.01	0.589	0.082	0.314	0.015	Developed
QC	8	1405	0	498	0.69	0.107	0.167	0.037	0.703	0.074	0.206	0.017	Developed
QC	8	1406	4	594	0.589	0.095	0.239	0.077	0.536	0.052	0.396	0.016	Developed
QC	8	1550	2	425	0.703	0.148	0.098	0.051	0.675	0.087	0.22	0.017	S(8-G12)
QC	8	1601	32	206	0.676	0.104	0.183	0.037	0.655	0.09	0.217	0.038	Developed
QC	8	1701	105	278	0.635	0.09	0.226	0.049	0.533	0.062	0.376	0.029	Developed
QC	8	1900	49	134	0.686	0.113	0.154	0.047	0.687	0.111	0.16	0.042	Developed
QC	8	2000	56	322	0.686	0.084	0.191	0.039	0.691	0.073	0.214	0.023	Developed
QC	8	2101	7	167	0.607	0.095	0.285	0.014	0.613	0.079	0.285	0.023	Developed

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
QC	8	2102	85	189	0.661	0.093	0.213	0.033	0.583	0.06	0.331	0.026	Developed
QC	8	2104	74	241	0.658	0.109	0.19	0.043	0.616	0.082	0.283	0.019	S(8-2108)
QC	8	2108	74	241	0.658	0.109	0.19	0.043	0.616	0.082	0.283	0.019	Developed
QC	8	2201	4	136	0.693	0.092	0.167	0.048	0.674	0.103	0.178	0.045	Developed
QC	8	2202	9	49	0.692	0.097	0.173	0.039	0.705	0.095	0.163	0.036	Developed
QC	8	2203	4	136	0.693	0.092	0.167	0.048	0.674	0.103	0.178	0.045	S(8-2201)
QC	8	2801	7	325	0.688	0.097	0.183	0.031	0.691	0.096	0.191	0.022	Developed
QC	8	2802	2	40	0.752	0.059	0.095	0.094	0.71	0.093	0.143	0.054	Developed
QC	8	3000	6	425	0.688	0.161	0.11	0.041	0.686	0.101	0.191	0.021	Developed
QC	8	3401	17	267	0.713	0.111	0.137	0.04	0.699	0.105	0.168	0.028	Developed
QC	8	3402	7	203	0.69	0.104	0.162	0.044	0.701	0.1	0.168	0.032	Developed
QC	8	3403	17	267	0.713	0.111	0.137	0.04	0.699	0.105	0.168	0.028	S(8-3401)
QC	8	3405	13	297	0.656	0.168	0.13	0.047	0.664	0.172	0.143	0.02	Developed
QC	8	3500	3	114	0.693	0.164	0.1	0.044	0.683	0.111	0.174	0.033	Developed
QC	15	101	0	275	0.552	0.097	0.158	0.193	0.695	0.104	0.112	0.09	Developed
QC	15	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(6-105)
QC	15	107	0	275	0.552	0.097	0.158	0.193	0.695	0.104	0.112	0.09	S(15-101)
QC	15	202	1	836	0.612	0.101	0.125	0.162	0.707	0.098	0.141	0.054	S(6-202)
QC	15	203	1	132	0.589	0.1	0.158	0.153	0.719	0.084	0.109	0.088	Developed
QC	15	209	9	507	0.631	0.078	0.144	0.146	0.737	0.076	0.113	0.073	S(6-209)
QC	15	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(6-302)
QC	15	401	2	578	0.616	0.126	0.147	0.111	0.67	0.113	0.169	0.047	S(6-401)
QC	15	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(6-602)
QC	15	701	0	498	0.616	0.093	0.147	0.143	0.656	0.092	0.17	0.082	S(6-701)
QC	15	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(6-1201)
QC	15	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(6-1203)
QC	15	1211	0	620	0.646	0.144	0.13	0.079	0.718	0.14	0.122	0.021	S(15-G9)
QC	15	1301	1	426	0.615	0.092	0.226	0.066	0.624	0.087	0.259	0.03	S(6-1301)
QC	15	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(6-1303)
QC	15	1401	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	S(6-1401)
QC	15	1405	0	362	0.669	0.102	0.161	0.068	0.685	0.091	0.191	0.033	S(6-1405)
QC	15	1550	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(15-G12)
NB	7	100	0	364	0.487	0.226	0.087	0.2	0.694	0.089	0.148	0.069	S(7-102)
NB	7	101	0	302	0.367	0.076	0.263	0.293	0.649	0.086	0.171	0.094	Developed
NB	7	102	0	364	0.487	0.226	0.087	0.2	0.694	0.089	0.148	0.069	Developed
NB	7	105	3	352	0.413	0.06	0.26	0.267	0.69	0.092	0.139	0.079	Developed
NB	7	107	0	364	0.487	0.226	0.087	0.2	0.694	0.089	0.148	0.069	S(7-102)
NB	7	108	3	352	0.413	0.06	0.26	0.267	0.69	0.092	0.139	0.079	S(7-105)
NB	7	202	16	454	0.665	0.096	0.156	0.082	0.662	0.089	0.193	0.056	S(QC-7-202)
NB	7	203	0	319	0.605	0.082	0.207	0.107	0.747	0.063	0.131	0.059	Developed
NB	7	209	0	319	0.605	0.082	0.207	0.107	0.747	0.063	0.131	0.059	S(7-203)
NB	7	302	0	348	0.468	0.155	0.164	0.213	0.691	0.113	0.129	0.067	Developed
NB	7	401	4	422	0.616	0.105	0.178	0.101	0.656	0.1	0.183	0.062	S(QC-7-401)
NB	7	601	59	249	0.631	0.115	0.178	0.076	0.736	0.087	0.134	0.044	S(7-602)
NB	7	602	59	249	0.631	0.115	0.178	0.076	0.736	0.087	0.134	0.044	Developed
NB	7	701	93	411	0.674	0.107	0.148	0.071	0.694	0.095	0.125	0.086	Developed
NB	7	1200	1	482	0.63	0.202	0.093	0.074	0.648	0.125	0.205	0.022	S(7-1201)
NB	7	1201	1	482	0.63	0.202	0.093	0.074	0.648	0.125	0.205	0.022	Developed
NB	7	1203	153	308	0.674	0.131	0.138	0.057	0.681	0.119	0.165	0.036	Developed
NB	7	1206	20	320	0.548	0.163	0.217	0.071	0.701	0.136	0.123	0.041	Developed
NB	7	1301	0	325	0.308	0.077	0.34	0.274	0.647	0.099	0.213	0.041	Developed
NB	7	1303	2	308	0.595	0.141	0.166	0.098	0.709	0.097	0.156	0.038	Developed
NB	7	1304	53	126	0.694	0.125	0.114	0.067	0.719	0.109	0.133	0.039	Developed
NB	7	1401	1	278	0.33	0.066	0.424	0.18	0.685	0.103	0.184	0.028	Developed
NB	7	1405	2	330	0.592	0.162	0.177	0.068	0.707	0.086	0.172	0.035	Developed
NB	7	1500	5	270	0.569	0.083	0.294	0.054	0.677	0.074	0.224	0.025	S(7-G12)
NB	7	1550	5	270	0.569	0.083	0.294	0.054	0.677	0.074	0.224	0.025	S(7-G12)
NB	7	2000	5	266	0.569	0.083	0.294	0.054	0.677	0.074	0.224	0.025	Developed
NS	7	101	0	207	0.441	0.068	0.311	0.179	0.681	0.085	0.154	0.08	Developed
NS	7	102	0	567	0.514	0.16	0.171	0.155	0.704	0.076	0.157	0.062	Developed
NS	7	103	3	15	0.778	0.074	0.084	0.064	0.764	0.081	0.089	0.066	Developed
NS	7	105	0	427	0.389	0.055	0.378	0.178	0.699	0.087	0.144	0.07	Developed
NS	7	106	0	427	0.389	0.055	0.378	0.178	0.699	0.087	0.144	0.07	S(7-105)
NS	7	107	0	396	0.407	0.069	0.326	0.198	0.688	0.082	0.168	0.062	Developed
NS	7	202	0	508	0.551	0.095	0.213	0.142	0.721	0.098	0.129	0.051	Developed
NS	7	203	4	199	0.596	0.075	0.235	0.094	0.717	0.061	0.167	0.054	Developed
NS	7	209	0	255	0.285	0.041	0.515	0.159	0.634	0.065	0.22	0.081	Developed
NS	7	211	0	255	0.285	0.041	0.515	0.159	0.634	0.065	0.22	0.081	S(7-209)
NS	7	302	0	371	0.244	0.071	0.5	0.184	0.494	0.08	0.367	0.059	Developed
NS	7	401	2	671	0.542	0.124	0.216	0.118	0.674	0.098	0.162	0.065	Developed
NS	7	601	1	237	0.555	0.072	0.278	0.095	0.738	0.085	0.129	0.048	S(7-602)
NS	7	602	1	237	0.555	0.072	0.278	0.095	0.738	0.085	0.129	0.048	Developed
NS	7	701	26	258	0.591	0.098	0.17	0.142	0.632	0.102	0.164	0.102	S(PE-7-701)
NS	7	1100	0	671	0.388	0.081	0.344	0.186	0.687	0.078	0.183	0.053	S(7-F1)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
NS	7	1150	0	671	0.388	0.081	0.344	0.186	0.687	0.078	0.183	0.053	S(7-F1)
NS	7	1200	0	246	0.674	0.18	0.102	0.044	0.673	0.13	0.15	0.047	Developed
NS	7	1201	0	252	0.637	0.154	0.129	0.08	0.667	0.117	0.167	0.049	Developed
NS	7	1206	1	307	0.534	0.287	0.127	0.052	0.685	0.134	0.148	0.033	Developed
NS	7	1301	0	293	0.42	0.097	0.403	0.08	0.649	0.097	0.216	0.038	Developed
NS	7	1303	0	230	0.45	0.093	0.393	0.064	0.678	0.1	0.179	0.044	Developed
NS	7	1304	1	83	0.627	0.134	0.178	0.061	0.666	0.12	0.171	0.043	Developed
NS	7	1401	1	273	0.504	0.081	0.346	0.07	0.711	0.085	0.178	0.026	Developed
NS	7	1405	0	300	0.597	0.142	0.204	0.057	0.708	0.086	0.172	0.034	Developed
NS	7	1500	0	314	0.588	0.154	0.184	0.074	0.7	0.068	0.209	0.023	S(7-G12)
NS	7	1550	0	314	0.588	0.154	0.184	0.074	0.7	0.068	0.209	0.023	S(7-G12)
NS	7	2000	0	314	0.571	0.039	0.337	0.053	0.696	0.066	0.217	0.021	Developed
NS	7	2100	3	75	0.563	0.158	0.236	0.043	0.545	0.096	0.297	0.061	Developed
NS	7	2108	1	186	0.573	0.175	0.153	0.099	0.634	0.113	0.208	0.045	Developed
NS	7	2201	14	284	0.58	0.087	0.281	0.052	0.663	0.096	0.192	0.049	S(PE-7-2201)
NS	7	2801	5	88	0.643	0.142	0.167	0.048	0.656	0.096	0.181	0.066	Developed
NS	7	3400	1	307	0.575	0.081	0.283	0.062	0.709	0.082	0.175	0.034	S(7-3401)
NS	7	3401	1	307	0.575	0.081	0.283	0.062	0.709	0.082	0.175	0.034	Developed
NS	7	4000	0	314	0.588	0.154	0.184	0.074	0.7	0.068	0.209	0.023	S(7-G12)
NS	7	5000	0	307	0.624	0.195	0.128	0.052	0.684	0.128	0.149	0.039	S(7-G9)
PE	7	101	4	243	0.558	0.077	0.213	0.152	0.63	0.092	0.186	0.092	Developed
PE	7	102	6	214	0.628	0.157	0.089	0.126	0.667	0.114	0.132	0.087	Developed
PE	7	105	10	326	0.639	0.093	0.183	0.085	0.646	0.086	0.174	0.094	Developed
PE	7	202	16	454	0.554	0.098	0.231	0.118	0.705	0.099	0.141	0.055	S(QC-7-202)
PE	7	209	0	255	0.285	0.041	0.515	0.159	0.634	0.065	0.22	0.081	S(NS-7-209)
PE	7	302	6	299	0.629	0.13	0.147	0.093	0.648	0.113	0.179	0.06	Developed
PE	7	401	112	316	0.649	0.102	0.181	0.067	0.639	0.101	0.197	0.064	Developed
PE	7	602	4	290	0.665	0.081	0.18	0.073	0.704	0.084	0.158	0.054	Developed
PE	7	701	26	258	0.591	0.098	0.17	0.142	0.632	0.102	0.164	0.102	Developed
PE	7	1200	10	319	0.642	0.148	0.164	0.047	0.651	0.135	0.173	0.042	S(7-1201)
PE	7	1201	10	319	0.642	0.148	0.164	0.047	0.651	0.135	0.173	0.042	Developed
PE	7	1206	48	343	0.629	0.137	0.184	0.05	0.657	0.163	0.153	0.028	Developed
PE	7	1301	10	155	0.412	0.077	0.435	0.075	0.601	0.09	0.267	0.041	Developed
PE	7	1303	14	227	0.648	0.115	0.153	0.084	0.646	0.103	0.204	0.047	Developed
PE	7	1304	14	227	0.648	0.115	0.153	0.084	0.646	0.103	0.204	0.047	S(7-1303)
PE	7	1401	41	214	0.595	0.09	0.265	0.049	0.631	0.088	0.243	0.037	Developed
PE	7	1405	6	254	0.644	0.12	0.2	0.037	0.664	0.1	0.201	0.035	Developed
PE	7	1550	14	284	0.619	0.126	0.126	0.129	0.658	0.093	0.204	0.045	S(7-G12)
PE	7	2000	78	192	0.654	0.065	0.246	0.035	0.634	0.065	0.261	0.039	Developed
PE	7	2108	1	186	0.573	0.175	0.153	0.099	0.634	0.113	0.208	0.045	S(NS-7-2108)
PE	7	2200	14	284	0.58	0.087	0.281	0.052	0.663	0.096	0.192	0.049	Developed
PE	7	2201	14	284	0.58	0.087	0.281	0.052	0.663	0.096	0.192	0.049	S(7-2200)
PE	7	2802	14	91	0.643	0.103	0.139	0.116	0.672	0.099	0.142	0.087	Developed
PE	7	3401	54	156	0.648	0.073	0.234	0.044	0.686	0.083	0.2	0.031	Developed
NF	1	101	1	217	0.374	0.083	0.179	0.364	0.568	0.091	0.193	0.148	S(5-101)
NF	1	105	1	146	0.354	0.068	0.15	0.428	0.585	0.09	0.155	0.17	S(6-105)
NF	1	302	1	265	0.4	0.076	0.143	0.381	0.57	0.096	0.227	0.107	S(5-302)
NF	1	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-6-602)
NF	1	1303	4	89	0.434	0.086	0.222	0.258	0.635	0.114	0.15	0.101	S(6-1303)
NF	5	101	1	217	0.374	0.083	0.179	0.364	0.568	0.091	0.193	0.148	Developed
NF	5	105	1	146	0.354	0.068	0.15	0.428	0.585	0.09	0.155	0.17	S(6-105)
NF	5	202	1	836	0.612	0.101	0.125	0.162	0.707	0.098	0.141	0.054	S(QC-5-202)
NF	5	302	1	265	0.4	0.076	0.143	0.381	0.57	0.096	0.227	0.107	Developed
NF	5	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-5-602)
NF	5	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(QC-5-1201)
NF	5	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(QC-5-1203)
NF	5	1301	1	426	0.615	0.092	0.226	0.066	0.624	0.087	0.259	0.03	S(QC-5-1301)
NF	5	1303	4	89	0.434	0.086	0.222	0.258	0.635	0.114	0.15	0.101	S(6-1303)
NF	5	1405	0	362	0.669	0.102	0.161	0.068	0.685	0.091	0.191	0.033	S(QC-5-1405)
NF	5	1500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
NF	6	101	0	263	0.341	0.068	0.174	0.416	0.563	0.084	0.186	0.167	Developed
NF	6	105	1	146	0.354	0.068	0.15	0.428	0.585	0.09	0.155	0.17	Developed
NF	6	202	1	836	0.612	0.101	0.125	0.162	0.707	0.098	0.141	0.054	S(QC-6-202)
NF	6	209	9	507	0.631	0.078	0.144	0.146	0.737	0.076	0.113	0.073	S(QC-6-209)
NF	6	302	0	376	0.38	0.067	0.141	0.412	0.586	0.117	0.186	0.111	Developed
NF	6	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-6-602)
NF	6	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(QC-6-1201)
NF	6	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(QC-6-1203)
NF	6	1301	1	426	0.615	0.092	0.226	0.066	0.624	0.087	0.259	0.03	S(QC-6-1301)
NF	6	1303	4	89	0.434	0.086	0.222	0.258	0.635	0.114	0.15	0.101	Developed
NF	6	1405	0	362	0.669	0.102	0.161	0.068	0.685	0.091	0.191	0.033	S(QC-6-1405)
NF	6	1500	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-6-G12)
NF	6	3500	0	121	0.65	0.161	0.13	0.058	0.692	0.146	0.124	0.038	S(QC-6-3500)
YK	2	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(12-101)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
YK	2	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(12-105)
YK	2	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-204)
YK	3	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(12-101)
YK	3	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(12-105)
YK	3	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-204)
YK	3	304	1	376	0.607	0.122	0.142	0.128	0.765	0.098	0.084	0.053	S(12-G1)
YK	3	602	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-G2)
YK	3	1201	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	3	1203	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	3	1308	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	4	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(12-101)
YK	4	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(12-105)
YK	4	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-204)
YK	4	304	1	376	0.607	0.122	0.142	0.128	0.765	0.098	0.084	0.053	S(12-G1)
YK	4	602	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-G2)
YK	4	1201	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	4	1203	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	4	1308	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	11	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(12-101)
YK	11	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(12-105)
YK	11	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-204)
YK	11	304	1	376	0.607	0.122	0.142	0.128	0.765	0.098	0.084	0.053	S(12-G1)
YK	11	602	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-G2)
YK	11	1201	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	11	1203	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	11	1308	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	12	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	Developed
YK	12	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	Developed
YK	12	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	Developed
YK	12	304	1	376	0.607	0.122	0.142	0.128	0.765	0.098	0.084	0.053	S(12-G1)
YK	12	602	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(12-G2)
YK	12	1201	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	Developed
YK	12	1203	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
YK	12	1308	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(12-1201)
NT	2	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(YK-2-101)
NT	2	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(YK-2-105)
NT	2	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(YK-2-204)
NT	3	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(YK-3-101)
NT	3	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(YK-3-105)
NT	3	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(YK-3-204)
NT	3	304	1	376	0.607	0.122	0.142	0.128	0.765	0.098	0.084	0.053	S(YK-3-304)
NT	3	602	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(YK-3-602)
NT	3	1201	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-3-1201)
NT	3	1203	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-3-1203)
NT	3	1308	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-3-1308)
NT	4	101	0	27	0.679	0.125	0.068	0.128	0.732	0.119	0.06	0.088	S(AB-4-101)
NT	4	105	70	509	0.724	0.103	0.051	0.123	0.798	0.098	0.033	0.07	S(AB-4-105)
NT	4	203	83	323	0.759	0.099	0.084	0.057	0.796	0.103	0.05	0.051	S(AB-4-203)
NT	4	204	83	323	0.759	0.099	0.084	0.057	0.796	0.103	0.05	0.051	S(AB-4-204)
NT	4	216	83	323	0.759	0.099	0.084	0.057	0.796	0.103	0.05	0.051	S(AB-4-216)
NT	4	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(AB-4-302)
NT	4	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(AB-4-500)
NT	4	601	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-4-601)
NT	4	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-4-602)
NT	4	1200	28	450	0.768	0.165	0.035	0.032	0.78	0.138	0.049	0.033	S(AB-4-1200)
NT	4	1201	28	450	0.768	0.165	0.035	0.032	0.78	0.138	0.049	0.033	S(AB-4-1201)
NT	4	1203	156	364	0.693	0.12	0.17	0.017	0.7	0.114	0.169	0.016	S(AB-4-1203)
NT	4	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(AB-4-1303)
NT	5	101	2	392	0.546	0.118	0.141	0.196	0.747	0.093	0.097	0.064	S(AB-5-101)
NT	5	105	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(AB-5-105)
NT	5	203	1	225	0.704	0.105	0.09	0.102	0.826	0.065	0.072	0.038	S(AB-5-203)
NT	5	204	1	623	0.704	0.106	0.095	0.094	0.831	0.078	0.062	0.029	S(AB-5-204)
NT	5	216	1	623	0.703	0.108	0.095	0.094	0.83	0.078	0.062	0.03	S(AB-5-216)
NT	5	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(AB-5-302)
NT	5	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(AB-5-500)
NT	5	601	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-5-601)
NT	5	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-5-602)
NT	5	1200	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(AB-5-1200)
NT	5	1201	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(AB-5-1201)
NT	5	1203	1	444	0.634	0.097	0.094	0.176	0.725	0.11	0.126	0.04	S(AB-5-1203)
NT	5	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(AB-5-1303)
NT	9	101	2	392	0.546	0.118	0.141	0.196	0.747	0.093	0.097	0.064	S(AB-9-101)
NT	9	104	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(AB-9-104)
NT	9	105	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(AB-9-105)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
NT	9	109	8	648	0.457	0.082	0.22	0.24	0.757	0.114	0.088	0.041	S(AB-9-109)
NT	9	203	1	225	0.704	0.105	0.09	0.102	0.826	0.065	0.072	0.038	S(AB-9-203)
NT	9	204	1	623	0.704	0.106	0.095	0.094	0.831	0.078	0.062	0.029	S(AB-9-204)
NT	9	216	1	623	0.703	0.108	0.095	0.094	0.83	0.078	0.062	0.03	S(AB-9-216)
NT	9	302	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(AB-9-302)
NT	9	304	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(AB-9-304)
NT	9	305	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(AB-9-305)
NT	9	306	8	424	0.587	0.128	0.197	0.089	0.731	0.106	0.106	0.057	S(AB-9-306)
NT	9	500	126	478	0.611	0.081	0.176	0.131	0.636	0.102	0.172	0.089	S(AB-9-500)
NT	9	600	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-9-600)
NT	9	601	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-9-601)
NT	9	602	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-9-602)
NT	9	604	2	168	0.56	0.114	0.218	0.108	0.712	0.115	0.128	0.045	S(AB-9-604)
NT	9	1150	1	648	0.625	0.115	0.123	0.137	0.804	0.085	0.075	0.036	S(AB-9-1150)
NT	9	1200	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(AB-9-1200)
NT	9	1201	1	803	0.687	0.208	0.051	0.055	0.745	0.116	0.098	0.04	S(AB-9-1201)
NT	9	1203	1	444	0.634	0.097	0.094	0.176	0.725	0.11	0.126	0.04	S(AB-9-1203)
NT	9	1303	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(AB-9-1303)
NT	9	1404	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(AB-9-1404)
NT	9	1500	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(AB-9-1500)
NT	9	1550	21	155	0.705	0.132	0.127	0.035	0.706	0.113	0.13	0.051	S(AB-9-1550)
NT	11	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(YK-11-101)
NT	11	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(YK-11-105)
NT	11	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(YK-11-204)
NT	11	304	1	376	0.607	0.122	0.142	0.128	0.765	0.098	0.084	0.053	S(YK-11-304)
NT	11	602	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(YK-11-602)
NT	11	1201	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-11-1201)
NT	11	1203	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-11-1203)
NT	11	1308	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-11-1308)
NT	12	101	2	152	0.623	0.124	0.131	0.123	0.744	0.116	0.077	0.063	S(YK-12-101)
NT	12	105	1	376	0.531	0.122	0.187	0.16	0.762	0.098	0.086	0.054	S(YK-12-105)
NT	12	204	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(YK-12-204)
NT	12	304	1	376	0.607	0.122	0.142	0.128	0.765	0.098	0.084	0.053	S(YK-12-304)
NT	12	602	3	253	0.743	0.091	0.085	0.08	0.812	0.072	0.073	0.042	S(YK-12-602)
NT	12	1201	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-12-1201)
NT	12	1203	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-12-1203)
NT	12	1308	2	204	0.684	0.141	0.1	0.075	0.735	0.124	0.116	0.025	S(YK-12-1308)
NU	1	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-1-101)
NU	1	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(QC-1-105)
NU	1	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-1-107)
NU	1	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(QC-1-302)
NU	1	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-1-602)
NU	1	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(QC-1-1201)
NU	1	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(QC-1-1203)
NU	1	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(QC-1-1303)
NU	2	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-2-101)
NU	2	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(QC-2-105)
NU	2	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-2-107)
NU	2	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(QC-2-302)
NU	2	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-2-602)
NU	2	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(QC-2-1201)
NU	2	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(QC-2-1203)
NU	2	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(QC-2-1303)
NU	3	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-3-101)
NU	3	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(QC-3-105)
NU	3	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-3-107)
NU	3	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(QC-3-302)
NU	3	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-3-602)
NU	3	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(QC-3-1201)
NU	3	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(QC-3-1203)
NU	3	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(QC-3-1303)
NU	5	101	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-5-101)
NU	5	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(QC-5-105)
NU	5	107	1	147	0.529	0.095	0.175	0.201	0.676	0.102	0.114	0.107	S(QC-5-107)
NU	5	202	1	836	0.612	0.101	0.125	0.162	0.707	0.098	0.141	0.054	S(QC-5-202)
NU	5	203	0	395	0.683	0.084	0.126	0.107	0.756	0.081	0.108	0.055	S(QC-5-203)
NU	5	209	9	507	0.631	0.078	0.144	0.146	0.737	0.076	0.113	0.073	S(QC-5-209)
NU	5	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(QC-5-302)
NU	5	401	2	578	0.616	0.126	0.147	0.111	0.67	0.113	0.169	0.047	S(QC-5-401)
NU	5	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-5-602)
NU	5	701	0	498	0.616	0.093	0.147	0.143	0.656	0.092	0.17	0.082	S(QC-5-701)
NU	5	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(QC-5-1201)
NU	5	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(QC-5-1203)
NU	5	1211	0	620	0.646	0.144	0.13	0.079	0.718	0.14	0.122	0.021	S(QC-5-1211)

jur	ecozone	species	vol_min	vol_max	p_sw_low	p_sb_low	p_br_low	p_fl_low	p_sw_high	p_sb_high	p_br_high	p_fl_high	model
NU	5	1301	1	426	0.615	0.092	0.226	0.066	0.624	0.087	0.259	0.03	S(QC-5-1301)
NU	5	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(QC-5-1303)
NU	5	1401	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	S(QC-5-1401)
NU	5	1405	0	362	0.669	0.102	0.161	0.068	0.685	0.091	0.191	0.033	S(QC-5-1405)
NU	5	1550	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-5-1550)
NU	15	101	0	275	0.552	0.097	0.158	0.193	0.695	0.104	0.112	0.09	S(QC-15-101)
NU	15	105	0	367	0.58	0.091	0.131	0.198	0.672	0.099	0.141	0.089	S(QC-15-105)
NU	15	107	0	275	0.552	0.097	0.158	0.193	0.695	0.104	0.112	0.09	S(QC-15-107)
NU	15	202	1	836	0.612	0.101	0.125	0.162	0.707	0.098	0.141	0.054	S(QC-15-202)
NU	15	203	1	132	0.589	0.1	0.158	0.153	0.719	0.084	0.109	0.088	S(QC-15-203)
NU	15	209	9	507	0.631	0.078	0.144	0.146	0.737	0.076	0.113	0.073	S(QC-15-209)
NU	15	302	0	412	0.598	0.106	0.129	0.167	0.655	0.114	0.153	0.078	S(QC-15-302)
NU	15	401	2	578	0.616	0.126	0.147	0.111	0.67	0.113	0.169	0.047	S(QC-15-401)
NU	15	602	0	263	0.645	0.091	0.148	0.116	0.723	0.083	0.132	0.063	S(QC-15-602)
NU	15	701	0	498	0.616	0.093	0.147	0.143	0.656	0.092	0.17	0.082	S(QC-15-701)
NU	15	1201	0	577	0.646	0.144	0.13	0.08	0.718	0.142	0.117	0.023	S(QC-15-1201)
NU	15	1203	1	620	0.638	0.165	0.156	0.042	0.708	0.118	0.155	0.019	S(QC-15-1203)
NU	15	1211	0	620	0.646	0.144	0.13	0.079	0.718	0.14	0.122	0.021	S(QC-15-1211)
NU	15	1301	1	426	0.615	0.092	0.226	0.066	0.624	0.087	0.259	0.03	S(QC-15-1301)
NU	15	1303	0	423	0.667	0.11	0.139	0.084	0.693	0.117	0.152	0.038	S(QC-15-1303)
NU	15	1401	1	509	0.651	0.096	0.193	0.06	0.682	0.075	0.229	0.015	S(QC-15-1401)
NU	15	1405	0	362	0.669	0.102	0.161	0.068	0.685	0.091	0.191	0.033	S(QC-15-1405)
NU	15	1550	0	496	0.716	0.096	0.093	0.095	0.712	0.065	0.206	0.017	S(QC-15-1550)

APPENDIX 3 – Biomass values for scenario 3 (treed, nonmerchantable stands)

Table 8. Look-up table for overstorey biomass in the forest land class

				Overstorey biomass (kg/ha)					
						Logarithmic scale		Natural scale	
Ecozone	**Predominant Genus**	**Component**	**Plots[1]**	**Min[2]**	**Max[3]**	**Mean[4]**	**StdErr[5]**	**Mean[4]**	**StdErr[5]**
Taiga plain	Spruce	wood	2	33143	61269	10.71	0.73	45005	32748
		bark		7008	12857	9.16	0.72	9478	6777
		branches		6064	10575	8.99	0.75	7995	5988
		foliage		11712	22462	9.69	0.74	16207	12066
	Pine	wood	1	17703		9.78	1.03	17703	18170
		bark		3175		8.06	1.01	3175	3210
		branches		2997		8.01	1.06	2997	3166
		foliage		7472		8.92	1.06	7472	7917
	Poplar	wood	9	1280	13948	8.39	0.67	4412	2947
		bark		216	1980	6.46	0.66	636	421
		branches		291	3331	6.97	0.68	1060	716
		foliage		40	338	4.79	0.66	121	80
	Birch	wood	1	6030		8.70	1.07	6030	6429
		bark		1100		7.00	1.05	1100	1158
		branches		1390		7.24	1.11	1389	1539
		foliage		1173		7.07	1.05	1172	1232
Taiga shield	Spruce	wood	4	3379	25994	8.92	0.51	7473	3836
		bark		615	2670	7.13	0.51	1247	632
		branches		738	1996	7.02	0.53	1118	592
		foliage		2113	7328	8.27	0.53	3920	2093
	Fir	wood	6	2491	9144	8.29	0.42	3965	1654
		bark		1047	2730	7.17	0.42	1295	538
		branches		681	2505	7.18	0.42	1316	554
		foliage		4385	14128	8.72	0.43	6116	2602
	Poplar	wood	1	69		4.23	1.03	69	71
		bark		16		2.74	1.01	16	16
		branches		13		2.53	1.06	13	13
		foliage		28		3.33	1.06	28	29
	Birch	wood	1	3983		8.29	1.06	3983	4225
		bark		803		6.69	1.04	803	834
		branches		1448		7.28	1.11	1448	1610
		foliage		1592		7.37	1.06	1592	1690
	Other broad-leaved	wood	1	415		6.03	1.06	415	441
		bark		77		4.34	1.05	77	81
		branches		251		5.53	1.11	251	280
		foliage		247		5.51	1.05	247	261
Boreal shield	Spruce	wood	90	12	75860	7.57	0.12	1944	238
		bark		1	12414	6.03	0.12	414	50
		branches		1	27329	7.04	0.12	1141	140
		foliage		2	83053	8.23	0.12	3734	459

Table 8 continued

				Overstorey biomass (kg/ha)					
						Logarithmic scale		Natural scale	
Ecozone	**Predominant Genus**	**Component**	**Plots[1]**	**Min[2]**	**Max[3]**	**Mean[4]**	**StdErr[5]**	**Mean[4]**	**StdErr[5]**
Boreal shield	Pine	wood	96	13	23478	7.21	0.16	1357	218
		bark		1	6052	4.99	0.16	147	23
		branches		1	8241	5.11	0.17	166	27
		foliage		1	4372	4.87	0.16	130	20
	Fir	wood	104	51	56913	8.83	0.10	6830	686
		bark		5	15125	7.90	0.10	2705	272
		branches		13	14815	7.80	0.10	2438	247
		foliage		75	73017	9.54	0.10	13858	1418
	Larch	wood	1	263		5.57	1.03	263	270
		bark		60		4.09	1.02	60	61
		branches		35		3.56	1.06	35	37
		foliage		135		4.91	1.06	135	144
	Poplar	wood	21	16	17223	7.37	0.31	1592	494
		bark		4	3774	5.78	0.31	325	100
		branches		3	2947	5.66	0.31	287	90
		foliage		1	727	4.41	0.31	83	25
	Birch	wood	14	58	41818	7.38	0.29	1606	461
		bark		10	11444	5.70	0.28	298	84
		branches		9	11459	5.58	0.30	265	79
		foliage		3	36484	6.15	0.29	468	137
	Maple	wood	1	1610		7.38	1.06	1610	1713
		bark		380		5.94	1.06	380	403
		branches		155		5.04	1.09	155	169
		foliage		95		4.55	1.04	95	99
Atlantic maritime	Spruce	wood	368	1	36614	5.72	0.07	306	20
		bark		1	6584	4.11	0.06	61	4
		branches		1	19112	5.31	0.07	202	14
		foliage		1	15286	5.33	0.07	206	13
	Pine	wood	59	2	11467	5.23	0.15	186	28
		bark		1	2182	4.00	0.15	55	8
		branches		1	14624	5.65	0.16	283	45
		foliage		1	7148	5.40	0.15	222	33
	Fir	wood	130	30	46782	8.06	0.11	3153	349
		bark		8	7898	6.04	0.11	418	46
		branches		13	30964	7.76	0.12	2343	272
		foliage		17	22580	7.56	0.11	1922	211
	Larch	wood	2	55	6615	6.44	0.75	624	468
		bark		18	1402	5.06	0.75	158	118
		branches		20	2905	5.54	0.78	255	198
		foliage		5	2248	4.63	0.75	102	77

Table 8 continued

				Overstorey biomass (kg/ha)					
						Logarithmic scale		Natural scale	
Ecozone	**Predominant Genus**	**Component**	**Plots[1]**	**Min[2]**	**Max[3]**	**Mean[4]**	**StdErr[5]**	**Mean[4]**	**StdErr[5]**
Atlantic maritime	Poplar	wood	67	113	50590	9.07	0.15	8722	1347
		bark		31	9071	7.83	0.15	2512	389
		branches		88	18830	8.61	0.16	5462	886
		foliage		131	10750	7.78	0.16	2388	375
	Birch	wood	31	67	47190	9.35	0.23	11500	2612
		bark		10	7272	7.52	0.22	1847	415
		branches		29	26904	8.68	0.24	5892	1393
		foliage		44	14116	7.85	0.23	2578	591
	Maple	wood	10	872	59883	9.83	0.37	18569	6779
		bark		174	11030	8.10	0.36	3280	1187
		branches		448	13085	8.88	0.38	7181	2703
		foliage		127	7523	8.00	0.37	2969	1085
	Other broad-leaved	wood	7	7436	61355	10.15	0.42	25564	10667
		bark		1416	9158	8.38	0.41	4373	1808
		branches		3486	24030	9.26	0.43	10538	4538
		foliage		1718	8086	8.31	0.42	4054	1697
Boreal plain	Spruce	wood	11	1991	94244	8.69	0.43	5968	2582
		bark		417	9819	6.70	0.43	814	348
		branches		469	7556	6.82	0.45	912	407
		foliage		1310	16922	7.58	0.45	1960	872
	Pine	wood	42	52	71650	7.91	0.18	2736	495
		bark		22	9724	6.34	0.18	565	100
		branches		19	9955	6.52	0.19	675	127
		foliage		78	19630	7.13	0.19	1248	232
	Larch	wood	6	2921	29426	9.11	0.57	9023	5135
		bark		405	3616	7.19	0.56	1320	740
		branches		686	8687	7.82	0.60	2483	1483
		foliage		1003	8467	8.12	0.58	3361	1947
	Poplar	wood	10	301	64673	9.53	0.36	13769	4999
		bark		97	13415	7.96	0.36	2876	1039
		branches		129	11636	7.92	0.37	2763	1016
		foliage		180	4357	6.50	0.36	667	240
Boreal cordillera	Spruce	wood	1	11510		9.35	1.45	11510	16723
		bark		2392		7.78	1.43	2392	3425
		branches		1627		7.39	1.49	1627	2420
		foliage		4532		8.42	1.49	4532	6765
	Pine	wood	13	4197	41015	9.73	0.42	16851	7044
		bark		704	8658	7.86	0.41	2588	1068
		branches		687	8244	7.83	0.43	2503	1077
		foliage		1633	23941	8.55	0.43	5145	2202

Table 8 continued

				Overstorey biomass (kg/ha)					
						Logarithmic scale		Natural scale	
Ecozone	**Predominant Genus**	**Component**	**Plots[1]**	**Min[2]**	**Max[3]**	**Mean[4]**	**StdErr[5]**	**Mean[4]**	**StdErr[5]**
Pacific maritime	Spruce	wood	39	671	30762	8.56	0.24	5239	1254
		bark		120	18549	7.80	0.24	2444	586
		branches		307	56090	9.36	0.25	11637	2887
		foliage		227	42002	9.06	0.23	8636	2023
	Pine	wood	55	3644	123451	9.86	0.23	19124	4472
		bark		455	18590	7.90	0.23	2686	620
		branches		481	74550	8.22	0.24	3721	911
		foliage		704	45403	8.36	0.23	4273	996
	Fir	wood	128	1313	149603	9.81	0.14	18134	2550
		bark		516	39102	8.66	0.14	5773	803
		branches		2008	153826	9.92	0.15	20360	2970
		foliage		2218	198440	9.94	0.14	20697	2841
	Hemlock	wood	172	3925	203029	10.06	0.12	23298	2811
		bark		1451	75271	9.00	0.12	8135	983
		branches		3015	300534	10.33	0.13	30547	3823
		foliage		2718	183638	9.91	0.12	20091	2388
	Douglas-fir	wood	126	1085	319572	9.95	0.16	20900	3389
		bark		220	135751	8.33	0.16	4134	663
		branches		229	553080	8.57	0.17	5257	885
		foliage		227	329986	8.34	0.16	4175	668
	Cedar and other conifer	wood	59	540	194379	9.80	0.16	18086	2844
		bark		95	36116	8.16	0.15	3498	540
		branches		67	42597	8.29	0.16	3999	651
		foliage		197	81184	8.88	0.16	7177	1157
	Poplar	wood	14	2368	53079	9.63	0.32	15283	4947
		bark		338	14239	7.89	0.32	2673	859
		branches		563	9524	8.15	0.33	3465	1134
		foliage		57	3431	6.22	0.32	505	162
	Birch	wood	1	1673		7.42	1.85	1673	3097
		bark		298		5.70	1.83	298	544
		branches		932		6.84	1.94	932	1809
		foliage		781		6.66	1.84	781	1440
	Other broad-leaved	wood	5	6175	55746	9.31	0.64	11060	7105
		bark		2674	10350	7.70	0.63	2202	1392
		branches		2360	31747	7.87	0.66	2612	1715
		foliage		6144	23455	9.19	0.66	9841	6520
Montane cordillera	Spruce	wood	49	1790	114609	9.48	0.18	13100	2387
		bark		665	36284	8.65	0.18	5723	1041
		branches		1032	127511	9.57	0.19	14314	2735
		foliage		1264	105011	9.47	0.18	12929	2327

Table 8 continued

				Overstorey biomass (kg/ha)					
						Logarithmic scale		Natural scale	
Ecozone	**Predominant Genus**	**Component**	**Plots[1]**	**Min[2]**	**Max[3]**	**Mean[4]**	**StdErr[5]**	**Mean[4]**	**StdErr[5]**
Montane cordillera	Pine	wood	586	114	859292	8.95	0.08	7706	603
		bark		42	122507	7.17	0.08	1299	100
		branches		36	210606	7.27	0.08	1442	117
		foliage		141	305429	8.00	0.08	2992	241
	Fir	wood	27	1498	54384	9.37	0.30	11704	3516
		bark		314	18340	7.94	0.29	2797	821
		branches		1023	42121	9.05	0.31	8487	2631
		foliage		1296	57901	9.27	0.30	10648	3148
	Douglas-fir	wood	110	2303	1725976	10.77	0.19	47783	8842
		bark		303	182992	8.63	0.18	5598	1025
		branches		788	627924	9.75	0.19	17165	3345
		foliage		596	548565	9.61	0.19	14850	2754
	Larch	wood	3	38600	154208	10.98	1.80	58821	105979
		bark		2734	10664	8.25	1.79	3825	6849
		branches		2273	11788	8.18	1.87	3571	6679
		foliage		1497	14492	8.05	1.77	3127	5519
	Poplar	wood	9	4315	47365	9.06	0.56	8579	4813
		bark		896	11538	7.92	0.56	2761	1544
		branches		741	10405	7.60	0.59	1999	1178
		foliage		660	29622	7.52	0.56	1847	1032
	Birch	wood	2	51293	56970	10.83	0.97	50325	48946
		bark		8388	16081	9.57	0.96	14318	13794
		branches		21525	44957	10.58	1.02	39418	40021
		foliage		18251	37992	10.42	0.96	33420	32093
	Other broad-leaved	wood	2	147	554	5.66	0.75	287	214
		bark		39	151	4.34	0.75	77	57
		branches		39	119	4.24	0.76	69	53
		foliage		9	45	3.01	0.74	20	15

[1] Total number of plots subtending the mean value
[2] Minimum value
[3] Maximum value
[4] Mean mass, in kg/ha
[5] Standard error of the mean

Table 9. *Overstorey* biomass by ecozone

			Overstorey biomass (kg/ha)					
					Logarithmic scale		Natural scale	
Ecozone	**Component**	**Plots[1]**	**Min[2]**	**Max[3]**	**Mean[4]**	**StdErr[5]**	**Mean[4]**	**StdErr[5]**
Taiga plain	wood	18	152	61269	8.53	0.46	5070	2308
	bark		69	12857	7.04	0.46	1143	528
	branches		24	10575	7.08	0.48	1185	572
	foliage		3	22462	5.82	0.48	338	162
Taiga shield	wood	13	69	25994	8.09	0.38	3267	1257
	bark		16	2730	6.73	0.38	836	318
	branches		13	2505	6.82	0.39	913	357
	foliage		28	14128	8.03	0.40	3077	1227
Boreal shield	wood	1451	12	75860	7.57	0.04	1948	79
	bark		1	15125	5.70	0.04	299	12
	branches		1	27329	5.38	0.04	218	9
	foliage		1	83053	6.06	0.04	430	19
Atlantic maritime	wood	1059	1	61355	7.28	0.05	1453	70
	bark		1	11030	5.59	0.05	269	13
	branches		1	30964	6.84	0.05	935	48
	foliage		1	22580	6.56	0.05	710	35
Mixed wood plain	wood	58	25	43633	7.55	0.20	1910	386
	bark		5	5455	5.75	0.21	313	65
	branches		5	10468	6.18	0.22	485	105
	foliage		3	2298	4.67	0.21	106	23
Boreal plain	wood	70	52	94244	8.47	0.19	4782	929
	bark		22	13415	6.78	0.20	881	174
	branches		19	11636	6.95	0.21	1044	223
	foliage		78	19630	7.30	0.23	1475	335
Boreal cordillera	wood	20	811	41015	9.52	0.47	13575	6432
	bark		250	8658	7.77	0.48	2380	1151
	branches		224	8244	7.71	0.52	2220	1157
	foliage		804	23941	8.53	0.55	5069	2771
Pacific maritime	wood	620	540	319572	9.92	0.08	20330	1707
	bark		95	135751	8.63	0.08	5620	466
	branches		67	553080	9.65	0.09	15467	1340
	foliage		41	329986	9.56	0.08	14189	1181
Montane cordillera	wood	849	114	1725976	9.41	0.08	12170	990
	bark		37	182992	7.73	0.08	2283	189
	branches		33	627924	8.06	0.09	3174	284
	foliage		9	548565	8.42	0.10	4543	433
Hudson plain	wood	6	130	3395	7.11	0.62	1224	759
	bark		10	743	4.90	0.63	135	85
	branches		10	758	4.88	0.67	132	89
	foliage		20	2040	5.58	0.69	266	184

[1] Total number of plots subtending the mean value
[2] Minimum value
[3] Maximum value
[4] Mean mass, in kg/ha
[5] Standard error of the mean

Table 10. *Overstorey* dead material biomass

Ecozone	Predominant Genus	Overstorey dead biomass (kg/ha)				
		Plots[1]	Mean[2]	StdErr[3]	Min[4]	Max[5]
Taiga plain		18	9	17	0	623
	Spruce	2	0	0		
	Pine	1	0			
	Poplar	9	33	48	0	623
	Birch	1	0			
Boreal shield		169	2814	953	0	115495
	Spruce	40	5285	2570	0	86641
	Pine	96	651	256	0	20871
	Fir	4	584	197	0	849
	Poplar	21	1411	846	0	17502
	Birch	7	4891	1389	0	12037
Atlantic maritime		53	2134	743	0	25598
Boreal plain		103	27497	4625	0	185826
	Spruce	22	57084	10746	0	145760
	Pine	54	13673	4812	0	172033
	Fir	2	158146	13840	151226	185826
	Larch	8	46668	26248	0	182393
	Poplar	15	12048	4697	0	54105
Boreal cordillera		20	80	73	0	1361
	Spruce	1	1361			
	Pine	13	0	0		
Pacific maritime		620	1741	1013	0	918600
	Spruce	39	619	619	0	24138
	Pine	55	36	27	0	1238
	Fir	128	61	26	0	4225
	Hemlock	172	574	318	0	41013
	Douglas-fir	126	2764	3956	0	918600
	Cedar and other conifer	59	7122	6019	0	304253
	Poplar	14	274	298	0	5053
	Birch	1	0			
	Other broad-leaved	5	0	0		
Montane cordillera		849	75	27	0	14172
	Spruce	49	2	5	0	498
	Pine	586	105	37	0	13488
	Fir	27	72	198	0	14172
	Douglas-fir	110	76	92	0	12430
	Larch	3	0	0		
	Poplar	9	0	0		
	Birch	2	0	0		
	Other broad-leaved	2	0	0		

[1] Total number of plots subtending the mean value
[2] Mean mass, in kg/ha
[3] Standard error of the mean
[4] Minimum value
[5] Maximum value

List of references used to develop Scenario 3, Table 11 biomass values – Forest *land class*

(119) Baskerville, G.L. 1966. Dry-matter production in immature balsam fir stands: roots, lesser vegetation, and total stand. Forest Science 12(1):49-53.

(107) Bray, J.R.; Dudkiewicz, L.A. 1963. The composition, biomass and productivity of two *Populus* forests. Bulletin of the Torrey Botanical Club 90(5):298-308.

(103) Camill, P.; Lynch, J.A.; Clark, J.S.; Adams, J.B.; Jordan, B. 2001. Changes in biomass, aboveground net primary production, and peat accumulation following permafrost thaw in the boreal peatlands of Manitoba, Canada. Ecosystems 4:461-478.

(44) Chang, S.X.; Weetman, G.F.; Preston, C.M. 1996. Understorey competition effect on growth and biomass allocation on a costal old-growth forest cutover site in British Columbia. Forest Ecology and Management 83:1-11.

(109) Houle, D.; Carignan, R. 1992. Sulfur speciation and distribution in soils and aboveground biomass of a boreal coniferous forest. Biogeochemistry 176:63-82.

(105) MacLean, D.A.; Wein, R.W. 1978. Litter production and forest floor nutrient dynamics in pine and hardwood stands of New Brunswick, Canada. Holarctic Ecology 1:1-15.

(48) Messier, C.; Kimmins, J.P. 1991. Above- and below-ground vegetation recovery in recently clearcut and burned sites dominated by *Gaultheria shallon* in coastal British Columbia. Forest Ecology and Management 46:275-294.

(8) Telfer, E.S. 1972. Understorey biomass in five forest types in southwestern Nova Scotia. Canadian Journal of Botany 50:1263-1267.

(4) Tremblay, N.O.; Larocque, G.R. 2001. Seasonal dynamics of understorey vegetation in four eastern Canadian forest types. International Journal of Plant Sciences 162(2):271-286.

(20) Webber, B.D. 1973. Plant biomass and nutrient distribution in a young *Pseudotsuga menziesii* forest ecosystem. Pacific Forest Research Centre, Canadian Forestry Service, Victoria, British Columbia. 163 p.

(125) Webber, B.D. 1977. Biomass and nutrient distribution patterns in a young *Pseudotsuga menziesii* ecosystem. Canadian Journal of Forest Research 7: 326-334.

List of references of data that have been collected for scenario 3, table 11 – Wetland *land class*

(15) Campbell, C.; Vitt, D.H.; Halsey, L.A.; Campbell, I.D.; Thormann, M.N.; Bayley, S.E. 2000. Net primary production and standing biomass in northern continental wetlands. Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. Information report NOR-X-369. 57 p.

(124) Dyck, B.S.; Shay, J.M. 1999. Biomass and carbon pool of two bogs in the experimental Lakes area, northwestern Ontario. Canadian Journal of Botany 77: 291-304.

(34) Grigal, D.F.; Buttleman, C.G.; Kernik, L.K. 1985. Biomass and productivity of the woody strata of forested bogs in northern Minnesota. Canadian Journal of Botany 63:2416-2424.

(32) Reade, R.J.; Stewart, J.M. 1972. The relationship between net primary production and accumulation for a peatland in southeastern Manitoba. Ecology 53(6):1024-1037.

(102) Sims, R.A.; Stewart, J.M. 1981. Aerial biomass distribution in an undisturbed and disturbed subarctic bog. Canadian Journal of Botany 59:782-786.

List of references of data that have been collected for scenario 3, table 11 – Scattered land class

(103) Camill, P.; Lynch, J.A.; Clark, J.S.; Adams, J.B.; Jordan, B. 2001. Changes in biomass, aboveground net primary production, and peat accumulation following permafrost thaw in the boreal peatlands of Manitoba, Canada. Ecosystems 4:461-478.

(122) Rencz, A. 1976. The level and distribution of biomass and nutrients in a subarctic lichen woodland. Thesis, McGill University, Montreal, Canada.

(1) Rencz, A.N.; Auclair, A.N.D. 1978. Biomass distribution in a subarctic *Picea mariana - Cladonia alpestris* woodland. Canadian Journal of Forest Research 8:168-176.

Table 11. Biomass for *overstorey*, *understorey* and *understorey dead material* for treed, nonmerchantable land classes

			Biomass (kg/ha)										Biomass of dead plant materiel (kg/ha)						
					Overstorey				Understorey				Understorey						
Ecozone	Land class (Canfi code)	Forest type	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	References[7]
Atlantic maritime			205	19	73622	3259	1900	199785	3444	154	98	8838	98	14	1236	71	90	2520	
	Forest (22340)		205	19	73622	3259	1900	199785	3444	154	98	8838	98	14	1236	71	90	2520	
		Hardwood	50	5	32452	3633	7080	76300	2481	141	1260	3455	40	4	1645	118	887	2520	8,105
		Mixedwood	51	2	87182	2326	61700	97800	5562	299	4197	8838							8
		Softwood	104	12	86765	5167	1900	199785	2869	193	98	7198	58	10	954	68	90	1542	8,105, 119
Boreal plains			14	8	9067	3686	157	34140	2522	428	1322	5499							
	Forest (22340)		3	1	34140				1322										
		Softwood	3	1	34140				1322										103
	Scattered (22320)		6	2	159	1	157	160	1441	4	1432	1449							
		Softwood	6	2	159	1	157	160	1441	4	1432	1449							103
	Wetland (22310)		5	5	4712	899	1752	6460	4541	287	3818	5499							
		Softwood	5	5	4712	899	1752	6460	4541	287	3818	5499							15
Boreal shield			311	24	43913	3794	6	309000	9235	303	662	15987	215	7	4155	121	1750	7660	
	Forest (22340)		62	8	128606	13869	17930	309000	1921	111	662	3930							
		Hardwood	25	2	208544	25114	57860	309000	1329	57	1102	1670							4,107
		Softwood	37	6	74594	7813	17930	155000	2321	151	662	3930							4,103, 109
	Scattered (22320)		18	6	486	162	6	1429	1674	128	809	2378							
		Softwood	18	6	486	162	6	1429	1674	128	809	2378							103
	Wetland (22310)		231	10	24565	1340	898	66500	11787	236	4685	15987	215	7	4155	121	1750	7660	
		Softwood	231	10	24565	1340	898	66500	11787	236	4685	15987	215	7	4155	121	1750	7660	32,102, 124

Table 11 continued

Ecozone	Land class (Canfi code)	Forest type	Biomass (kg/ha)										Biomass of dead plant materiel (kg/ha)						References[7]
					Overstorey				Understorey				Understorey						
			Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	
Mixedwood plains			10	1	193000				655										
	Forest (22340)		10	1	193000				655										
		Hardwood	10	1	193000				655										4
Pacific maritime			50	8	5382	2021	43	76731	4145	303	1329	9457	2	2	16654	15428	1226	32082	
	Forest (22340)		50	8	5382	2021	43	76731	4145	303	1329	9457	2	2	16654	15428	1226	32082	
		Softwood	50	8	5382	2021	43	76731	4145	303	1329	9457	2	2	16654	15428	1226	32082	20,44, 48,125
Taiga shield			35	6	21250	2148	18637	93500	13948	474	0	14850							
	Forest (22340)		1	1	19970				9855										
		Softwood	1	1	19970				9855										1
	Scattered (22320)		33	4	19099	330	18637	29250	14495	209	9760	14850							
		Softwood	33	4	19099	330	18637	29250	14495	209	9760	14850							1,122
	Wetland (22310)		1	1	93500				0										
		Softwood	1	1	93500				0										34

[1] Total number of plots subtending the mean value
[2] Number of records
[3] Mean mass, in kg/ha
[4] Standard error of the mean
[5] Minimum value
[6] Maximum value
[7] Literature used to develop model (list on page 91)
Note: values for *overstorey* biomass from tables 8-10 should supersede those shown above for the forest land class (22340)

APPENDIX 4 – Biomass values for scenario 4 (vegetated, non-treed areas)

List of references used to develop Scenario 4, table 12

(89) Arseneault, D.;Villeneuve, N.; Boismenu, C.; Leblanc, Y.; Deshaye, J. 1997. Estimating lichen biomass and caribou grazing on the wintering grounds of northern Québec: an application of fire history and Landsat data. Journal of Applied Ecology 34:65-78.

(29) Auclair, A.N.D.; Bouchard, A.; Pajaczkowski, J. 1976. Plant standing crop and productivity relations in a *Scirpus-Equisetum* wetland. Ecology 57:941-952.

(24) Auclair, A.N.D.; Bouchard, A.; Pajaczkowski, J. 1976. Productivity relations in a *Carex*-dominated ecosystem. Oecologica 26:9-31.

(82) Bliss, L.C.; Kerik, J. 1973. Primary production of plant communities of Truelove lowland, Devon Island, Canada – Rock outcrops. Pages 27-36 *In*: Bliss, L.C.; Wielgolaski, F.E. eds. Primary production and production processes, Tundra biome. International Biological Programme, Dublin, Ireland, April.

(61) Bliss, L.C. 1975. Devon Island, Canada. *In*: Rosswall, T.; Heal, O.W. eds. Structure and function of tundra ecosystems. Ecological Bulletins 20:17-60.

(99) Bliss, L.C.; Kerik, J.; Peterson, W. 1977. Primary production of Dwarf Shrub Heath communities, Truelove Lowland. *In*: Bliss, L.C. ed. Truelove lowland, Devon Island, Canada: A high Arctic ecosystem. The University of Alberta Press, Edmonton, Alberta. 711 p.

(103) Camill, P.; Lynch, J.A.; Clark, J.S.; Adams, J.B.; Jordan, B. 2001. Changes in biomass, aboveground net primary production, and peat accumulation following permafrost thaw in the boreal peatlands of Manitoba, Canada. Ecosystems 4:461-478.

(15) Campbell, C.; Vitt, D.H.; Halsey, L.A.; Campbell, I.D.; Thormann, M.N.; Bayley, S.E. 2000. Net primary production and standing biomass in northern continental wetlands. Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. Information report NOR-X-369. 57 p.

(124) Dyck, B.S.; Shay, J.M. 1999. Biomass and carbon pool of two bogs in the experimental Lakes area, northwestern Ontario. Canadian Journal Of Botany. 77:291-304.

(104) Ferguson, M.A.D.; Gauthier, L.; Messier, F. 2001. Range shift and winter foraging ecology of a population of Arctic tundra caribou. Canadian Journal of Zoology 79:746-758.

(40) Gorham, E.; Somers, M.G. 1973. Seasonal changes in standing crop of two montane sedges. Canadian Journal Of Botany 51:1097-1108.

(78) Manseau, M.; Huot, J.; Crête, M. 1996. Effects of summer grazing by caribou on composition and productivity of vegetation: community and landscape level. Journal of Ecology 84:503-513.

(25) Moore, T.R. 1989. Plants production, decomposition, and carbon efflux in a Subarctic patterned fen. Arctic and Alpine Research 21(2):156-162.

(130) Moore, T.R. 2002. Plant biomass and production and CO2 exchange in an ombrotrophic bog. Journal of Ecology. 90:25-36.

(80) Muc, M. 1973. Primary production of plant communities of Truelove lowland, Devon Island, Canada – Sedge meadows. Pages 3-14 *In*: Bliss, L.C.; Wielgolaski, F.E. eds. Primary production and production processes, Tundra biome. International Biological Programme, Dublin, Ireland, April.

(97) Muc, M. 1977. Ecology and primary production of Sedge-moss meadow communities, Truelove Lowland. In: Bliss, L.C. ed. Truelove lowland, Devon Island, Canada: A high Arctic ecosystem. The University of Alberta Press, Edmonton, Alberta. 711 p.

(30) Neill, C. 1993. Seasonal flooding, soil salinity and primary production in northern prairies marshes. Oecologia 95: 499-505.

(32) Reader, R.J.; Stewart, J.M. 1972. The relationship between net primary production and accumulation for peatland in Southeasthern Manitoba. 53(6):1024-1037.

(83) Richardson, D.H.S.; Finegan, E.J. 1973. Primary production of plant communities of Truelove lowland, Devon Island, Canada – Lichen communities Pages 47-55 *In*: Bliss, L.C.; Wielgolaski, F.E. eds. Primary production and production processes, Tundra biome. International Biological Programme, Dublin, Ireland, April.

(102) Sims, R.A.; Stewart, J.M. 1981. Aerial biomass distribution in an undisturbed and disturbed subarctic bog. Canadian Journal of Botany 59:782-786.

(89) Svoboda, J. 1973. Primary production of plant communities of Truelove lowland, Devon Island, Canada – Beach ridge Pages 15-26 *In*: Bliss, L.C.; Wielgolaski, F.E. eds. Primary production and production processes, Tundra biome. International Biological Programme, Dublin, Ireland, April.

(98) Svoboda, J. 1977. Ecology and primary production of raised beach communities, Truelove Lowland. Pages 185-216 *In*: Bliss, L.C. ed. Truelove lowland, Devon Island, Canada: A high Arctic ecosystem. The University of Alberta Press, Edmonton, Alberta.

(95) Wielgolaski, F.E. 1972. Vegetation types and plant biomass in tundra. Arctic and Alpine Research 4(4):291-305.

Table 12. Biomass by ecozone and CanFI2001 land class

Ecozone	Land class		Canfi code	Biomass (kg/ha)						Mass of dead plant material (kg/ha)						References[7]
				Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	
Boreal plains	Wetland		22110	17	15	3573.8	566.2	590	9326							
		Muskeg/ Bog/Fen	22111	3	1	590.0										103
		Marsh	22112	6	6	5039.7	953.5	2967	9326							15
		Shrub	22114	8	8	3593.3	602.4	1364	5557							15
Boreal shield	Wetland		22110	48	7	4805.3	597.3	256	25063	23	1	1180.0				
		Muskeg/ Bog/Fen	22111	48	7	4805.3	597.3	256	25063	23	1	1180.0				32, 102, 103,124
Mixed wood plains	Wetland		22110	109	4	7606.7	140.6	3070	8450	45	1	7790.0				
		Muskeg/ Bog/Fen	22111	19	2	4512.1	163.4	3170	4870							130
		Marsh	22112	45	1	8450.0										29
		Meadow	22113	45	1	8070.0				45	1	7790.0				24
Montane cordillera	Other		22130	2	2	6243.5	4832.5	1411	11076	2	2	6477.5	1250.5	5227	7728	
		Tundra heath	22135	2	2	6243.5	4832.5	1411	11076	2	2	6477.5	1250.5	5227	7728	98
	Wetland		22110	10	2	5100.0	433.3	3800	6400	10	2	6100.0	1333.3	2100	10100	
		Muskeg/ Bog/Fen	22111	10	2	5100.0	433.3	3800	6400	10	2	6100.0	1333.3	2100	10100	40

Table 12 continued

Ecozone	Land class		Canfi code	Biomass (kg/ha)						Mass of dead plant material (kg/ha)						References[7]
				Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	
Northern arctic	Other		22130	358	55	3845.1	213.6	129	19081	214	37	2025.1	72.4	190	8539	
		Grassland / meadow	22131	34	2	772.9	16.2	572	816	34	2	1652.7	42.6	1124	1766	97
		Tundra heath	22135	324	53	4167.5	228.8	129	19081	180	35	2095.4	84.7	190	8539	61, 80, 81, 82, 83, 95, 98, 99, 104
	Upland		22120	1	1	1840.0				1	1	650.0				
		Brush/ Avalanche /Scrub	22122	1	1	1840.0				1	1	650.0				61
	Wetland		22110	6	1	797.0				6	1	1230.0				
		Meadow	22113	6	1	797.0				6	1	1230.0				97
Prairies	Wetland		22110	26	6	6601.8	598.0	1877	9690							
		Muskeg/ Bog/Fen	22111	2	2	2483.5	606.5	1877	3090							15
		Marsh	22112	24	4	6945.0	594.3	2700	9690							30
	Other		22130	12	2	7680.0	545.7	5870	9490							
		Grassland /meadow	22131	12	2	7680.0	545.7	5870	9490							30
Taiga shield	Other		22130	92	12	2722.3	241.5	258	8010	28	4	9.0	1.4	2	21	
		Tundra heath	22135	92	12	2722.3	241.5	258	8010	28	4	9.0	1.4	2	21	78, 89
	Wetland		22110	8	1	1900.0										
		Shrub	22114	8	1	1900.0										25

[1] Total number of plots subtending the mean value
[2] Number of records
[3] Mean mass, in kg/ha
[4] Standard error of the mean
[5] Minimum value
[6] Maximum value
[7] Literature used to develop model (list on page 95)

Table 13. Biomass by CanFI2001 land class

Land class			CanFI code	Biomass (kg/ha)						Mass of dead plant material (kg/ha)						References[7]
				Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	Plots[1]	n[2]	Mean[3]	StdErr[4]	Min[5]	Max[6]	
Naturally vegetated non-treed			22100	689	108	4494.4	142.9	129	25063	329	49	2715.2	138.9	2	10100	
	Wetland		22110	224	36	6085.6	206.8	256	25063	84	5	5310.4	366.2	1180	10100	
		Muskeg/ Bog/Fen	22111	82	14	4562.4	366.8	256	25063	33	3	2670.9	557.9	1180	10100	15, 32, 40, 102, 103,124,130
		Marsh	22112	75	11	7695.6	233.9	2700	9690							15, 29, 30
		Meadow	22113	51	2	7214.4	331.4	797	8070	51	2	7018.2	298.9	1230	7790	24, 97
		Shrub	22114	16	9	2746.6	364.0	1364	5557							15, 25
	Upland		22120	1	1	1840.0				1	1	650.0				
		Brush/ Avalanche /Scrub	22122	1	1	1840.0				1	1	650.0				61
	Other		22130	464	71	3732.0	176.7	129	19081	244	43	1830.2	80.7	2	8539	
		Grassland / meadow	22131	46	4	2574.8	472.8	572	9490	34	2	1652.7	42.6	1124	1766	30, 97
		Tundra heath	22135	418	67	3859.3	188.2	129	19081	210	41	1859.0	93.4	2	8539	61, 78, 80, 81, 82, 83, 89, 95, 98, 99, 104

[1] Total number of plots subtending the mean value
[2] Number of records
[3] Mean mass, in kg/ha
[4] Standard error of the mean
[5] Minimum value
[6] Maximum value
[7] Literature used to develop model (list on page 95)

APPENDIX 5 – Examples of model application

Example of scenarios 1 and 2 application

BC, Pacific maritime (ecozone 13), Douglas-fir, stand net merchantable volume = 350m^3/ha.
$b\_m = .55345 \times 350^{1.00210}$ (Table 3)
Merchantable-sized tree stem wood biomass = 196.105 tonnes/ha
nonmerchfactor $= .91272 + 37.32514 \times 196.105^{-.94491}$ (Table 4)
=1.1673
Nonmerchantable-sized tree stem wood biomass = (1.1673-1) × 196.105
=32.808 tonnes/ha
saplingfactor $= .99731 + 32.95091 \times (196.105 + 32.808)^{-1.48218}$ (Table 5)
= 1.0078
Sapling-sized tree stem wood biomass = (1.0078-1) × 228.913
=1.786 tonnes/ha

$$P_{stemwood} = \frac{1}{1+e^{-1.48710+(-.00004\times350)+(-.06301\times5.87212)}+e^{-.99796+(-.00007\times350)+(-.18779\times5.87212)}+e^{-1.00063+(-.00024\times350)+(-.28415\times5.87212)}}$$
$=0.74779$

$$P_{bark} = \frac{e^{-1.48710+(-.00004\times350)+(-.06301\times5.87212)}}{1+e^{-1.48710+(-.00004\times350)+(-.06301\times5.87212)}+e^{-.99796+(-.00007\times350)+(-.18779\times5.87212)}+e^{-1.00063+(-.00024\times350)+(-.28415\times5.87212)}}$$
$=0.11529$

$$P_{branches} = \frac{e^{-.99796+(-.00007\times350)+(-.18779\times5.87212)}}{1+e^{-1.48710+(-.00004\times350)+(-.06301\times5.87212)}+e^{-.99796+(-.00007\times350)+(-.18779\times5.87212)}+e^{-1.00063+(-.00024\times350)+(-.28415\times5.87212)}}$$
$=0.08928$

$$P_{foliage} = \frac{e^{-1.00063+(-.00024\times350)+(-.28415\times5.87212)}}{1+e^{-1.48710+(-.00004\times350)+(-.06301\times5.87212)}+e^{-.99796+(-.00007\times350)+(-.18779\times5.87212)}+e^{-1.00063+(-.00024\times350)+(-.28415\times5.87212)}}$$
$=0.04764$
(Table 6)

Total tree biomass = $\left(\frac{196.105+32.808+1.786}{0.74779}\right)$
= 308.508 tonnes/ha

Total bark biomass = 0.11529×308.508
= 35.568 tonnes/ha

Total branch biomass = 0.08928×308.508
= 27.544 tonnes/ha

Total foliage biomass = 0.04764×308.508
= 14.697 tonnes/ha

$P_{dead} = 0.138 \times 196.105$ (Table 3a)
Dead tree biomass = **27.062 tonnes/ha**

Example of scenario 3 application

1. CanFI2001 land class code = 22340 (land, vegetated, treed, forest); ecozone = Atlantic maritime; predominant genus = spruce; gross merchantable volume = 0.0 m^3/ha (i.e., a forested stand found somewhere in New Brunswick, P.E.I. or Nova Scotia containing predominantly spruce trees smaller than the minimum dbh merchantable limit for these provinces).

Overstorey **biomass (Appendix 3, Table 8)**

Wood: 306 kg/ha
Bark: 61 kg/ha.
Branches: 202 kg/ha
Foliage: 206 kg/ha

Overstorey dead material **mass (Appendix 3, Table 10)**

2134 kg/ha

Understorey **biomass (Appendix 3, Table 11)**

2869 kg/ha

Understorey dead material **mass (Appendix 3, Table 11)**

954 kg/ha

2. CanFI2001 land class code = 22311 (land, vegetated, treed, wetland, treed muskeg); ecozone = Boreal shield; predominant genus = spruce; gross merchantable volume = 0.0 m^3/ha (i.e., a treed muskeg found somewhere in the boreal shield containing black spruce trees)

Overstorey **biomass (Appendix 3, Table 11)**

24565 kg/ha.

Overstorey dead material **mass (Appendix 3, Table 11)**

Missing (0.0 kg/ha)

Understorey **biomass (Appendix 3, Table 11)**

11787 kg/ha

Understorey dead material **mass (Appendix 3, Table 11)**

4155 kg/ha.

Example of scenario 4 application

1. CanFI2001 land class code = 22114 (land, vegetated, non-treed, wetland, shrub); ecozone = Taiga shield (i.e., a shrubby wetland somewhere in northern Canada)

Biomass (Appendix 4, Table 12)

1900 kg/ha

Dead plant material **mass (Appendix 4, Table 12)**

0 kg/ha

APPENDIX 6 – Total volume to gross (net in B.C.) merchantable volume conversion

Table 14. Model parameters by jurisdiction, ecozone and genus

merchantable_volume = *proportion* × total_volume

where

$proportion = k + a \times (1 - \exp(b \times total\_volume))^c$

jur = jurisdiction

volmin = approximate total volume where merchantable volume approaches zero (m^3/ha)

model = model was developed or substituted from another province/ecozone/genus

jur	ecozone	genus	a	b	c	k	volmin	model
AB	4	1	0.97651	-0.00944	1.84473	-0.001	8.5	Developed
AB	4	2	0.94796	-0.01583	5.33351	-0.001	31.5	Developed
AB	4	3	0.89517	-0.02356	3.56005	-0.001	12.5	S(9-3)
AB	4	6	0.56891	-0.01484	1.16977	-0.001	2.5	S(9-6)
AB	4	9	1.02	-0.02695	39.39297	-0.116	110	Developed
AB	4	10	1.0121	-0.01326	2.95736	-0.001	15.5	S(9-10)
AB	5	1	0.98276	-0.01012	3.3599	-0.001	25.5	S(9)
AB	5	2	1.0189	-0.00673	1.70272	-0.001	9.5	S(9)
AB	5	3	0.89517	-0.02356	3.56005	-0.001	12.5	S(9)
AB	5	6	0.56891	-0.01484	1.16977	-0.001	2.5	S(9)
AB	5	9	1.02	-0.00767	1.57225	-0.001	6.5	S(9)
AB	5	10	1.0121	-0.01326	2.95736	-0.001	15.5	S(9)
AB	6	1	0.98276	-0.01012	3.3599	-0.001	25.5	S(9)
AB	6	2	1.0189	-0.00673	1.70272	-0.001	9.5	S(9)
AB	6	3	0.89517	-0.02356	3.56005	-0.001	12.5	S(9)
AB	6	6	0.56891	-0.01484	1.16977	-0.001	2.5	S(9)
AB	6	9	1.02	-0.00767	1.57225	-0.001	6.5	S(9)
AB	6	10	1.0121	-0.01326	2.95736	-0.001	15.5	S(9)
AB	9	1	0.98276	-0.01012	3.3599	-0.001	25.5	Developed
AB	9	2	1.0189	-0.00673	1.70272	-0.001	9.5	Developed
AB	9	3	0.89517	-0.02356	3.56005	-0.001	12.5	Developed
AB	9	6	0.56891	-0.01484	1.16977	-0.001	2.5	Developed
AB	9	9	1.02	-0.00767	1.57225	-0.001	6.5	Developed
AB	9	10	1.0121	-0.01326	2.95736	-0.001	15.5	Developed
AB	14	1	0.96664	-0.00849	1.36438	-0.001	4	Developed
AB	14	2	0.93272	-0.00893	2.92505	-0.001	23.5	Developed
AB	14	3	0.89517	-0.02356	3.56005	-0.001	12.5	S(9-3)
AB	14	5	0.94078	-0.01652	9.14657	-0.001	52	Developed
AB	14	6	0.56891	-0.01484	1.16977	-0.001	2.5	S(9-6)
AB	14	9	0.9963	-0.0117	2.86428	-0.001	17	Developed
AB	14	10	1.0121	-0.01326	2.95736	-0.001	15.5	S(9-10)
BC	4	1	0.99765	-0.00379	0.64309	-0.252	35.5	S(12-1)
BC	4	2	0.78951	-0.00652	2.32909	-0.015	38.5	S(12-2)
BC	4	3	2.14372	-0.0006	0.2	-0.804	13	S(12-3)
BC	4	6	1.42331	-0.01029	0.72754	-0.707	48	S(14-6)
BC	4	9	0.75052	-0.01137	11.76224	0	61	S(12-9)
BC	4	10	0.62561	-0.03052	128.66497	0	83.5	S(12-10)
BC	4	12	0.61924	-0.02012	7.27444	0	26.5	S(14-12)
BC	9	1	0.99765	-0.00379	0.64309	-0.252	35.5	S(12-1)
BC	9	2	0.78951	-0.00652	2.32909	-0.015	38.5	S(12-2)
BC	9	3	2.14372	-0.0006	0.2	-0.804	13	S(12-3)
BC	9	6	1.42331	-0.01029	0.72754	-0.707	48	S(14-6)
BC	9	9	0.75052	-0.01137	11.76224	0	61	S(12-9)
BC	9	10	0.62561	-0.03052	128.66497	0	83.5	S(12-10)
BC	9	12	0.61924	-0.02012	7.27444	0	26.5	S(14-12)
BC	12	1	0.99765	-0.00379	0.64309	-0.252	35.5	Developed
BC	12	2	0.78951	-0.00652	2.32909	-0.015	38.5	Developed
BC	12	3	2.14372	-0.0006	0.2	-0.804	13	Developed
BC	12	6	1.42331	-0.01029	0.72754	-0.707	48	S(14-6)
BC	12	9	0.75052	-0.01137	11.76224	0	61	Developed
BC	12	10	0.62561	-0.03052	128.66497	0	83.5	Developed
BC	12	12	0.61924	-0.02012	7.27444	0	26.5	S(14-12)
BC	13	1	0.90954	-0.00316	1.27015	-0.006	12.5	Developed
BC	13	2	0.84482	-0.00444	3.54908	-0.006	82	Developed
BC	13	3	0.87869	-0.00409	1.77514	-0.022	40.5	Developed
BC	13	4	0.9031	-0.00331	1.56961	-0.007	24	Developed

jur	ecozone	genus	a	b	c	k	volmin	model
BC	13	5	0.90518	-0.00532	2.14073	0	17.5	Developed
BC	13	7	0.80103	-0.00385	1.04853	-0.069	30	Developed
BC	13	9	0.82449	-0.0115	13.48314	0	63.5	Developed
BC	13	10	0.69108	-0.01089	7.67708	0	50.5	Developed
BC	13	11	5.52671	-0.00637	0.2	-4.705	94.5	Developed
BC	13	12	0.86914	-0.00696	2.58214	-0.005	31	Developed
BC	14	1	0.93045	-0.00462	0.98832	-0.028	9	Developed
BC	14	2	0.88126	-0.00928	4.76079	0	33.5	Developed
BC	14	3	0.85489	-0.00784	1.20866	-0.048	14.5	Developed
BC	14	4	0.81243	-0.00404	1.36221	0	8.5	Developed
BC	14	5	1.14658	-0.00931	0.69804	-0.299	17.5	Developed
BC	14	6	1.42331	-0.01029	0.72754	-0.707	48	Developed
BC	14	7	0.8727	-0.00468	0.5946	-0.114	8.5	Developed
BC	14	9	0.73473	-0.00949	4.61885	0	33.5	Developed
BC	14	10	0.6866	-0.0177	5.43505	0	22	Developed
BC	14	12	0.61924	-0.02012	7.27444	0	26.5	Developed
MB	5	1	0.86842	-0.02104	3.59886	-0.01	20	S(6)
MB	5	2	0.93833	-0.02717	8.67665	0	26.5	S(6)
MB	5	3	0.8677	-0.02564	4.9783	-0.023	28	S(6)
MB	5	6	0.73078	-0.02904	9.63981	0	29	S(6)
MB	5	9	1.1	-0.0089	1.95143	0	8	S(6)
MB	5	12	0.85723	-0.0171	1.71783	-0.023	9.5	S(6)
MB	6	1	0.86842	-0.02104	3.59886	-0.01	20	Developed
MB	6	2	0.93833	-0.02717	8.67665	0	26.5	Developed
MB	6	3	0.8677	-0.02564	4.9783	-0.023	28	Developed
MB	6	6	0.73078	-0.02904	9.63981	0	29	Developed
MB	6	7	1.1	-0.05409	75	-0.403	80	Developed
MB	6	9	1.1	-0.0089	1.95143	0	8	Developed
MB	6	10	0.70955	-0.10201	75	0	26	S(9-10)
MB	6	12	0.85723	-0.0171	1.71783	-0.023	9.5	Developed
MB	9	1	0.79702	-0.0225	2.80681	0	7.5	Developed
MB	9	2	0.86305	-0.02933	3.74207	-0.066	25	Developed
MB	9	3	0.8677	-0.02564	4.9783	-0.023	28	S(6-3)
MB	9	6	1.05564	-0.01335	1.13858	-0.267	27.5	Developed
MB	9	7	1.1	-0.05409	75	-0.403	80	S(6-7)
MB	9	9	0.87963	-0.01627	0.94182	-0.042	3	Developed
MB	9	10	0.70955	-0.10201	75	0	26	Developed
MB	9	12	0.85723	-0.0171	1.71783	-0.023	9.5	S(6-12)
NB	7	1	0.95947	-0.01951	5.22699	-0.001	24.85	Developed
NB	7	2	0.93534	-0.0233	2.79145	-0.023	15.2	Developed
NB	7	3	0.96149	-0.02271	11.85032	-0.001	46.45	Developed
NB	7	4	1.0338	-0.01265	0.7862	-0.123	6.05	S(QC)
NB	7	6	2.28595	-0.03105	5.7951	-1.388	80.8	Developed
NB	7	7	0.90456	-0.02642	6.29147	-0.001	22.95	Developed
NB	7	9	0.89733	-0.03097	12.37669	-0.001	36.3	Developed
NB	7	10	0.91986	-0.0411	89.52185	-0.001	70.55	Developed
NB	7	11	0.88966	-0.05439	80.5065	-0.001	51.55	Developed
NB	7	12	0.85427	-0.05806	32.92793	-0.002	34.35	Developed
NF	5	1	1.2	-0.02262	0.58089	-0.316	4.95	Developed
NF	5	3	0.85487	-0.07374	5.03119	-0.001	6.5	Developed
NF	6	1	0.93704	-0.01931	1.57976	-0.001	2.8	Developed
NF	6	2	0.91273	-0.01786	1.68487	-0.001	3.65	S(QC)
NF	6	3	1.05613	-0.00796	0.76716	-0.06	3.75	Developed
NF	6	4	1.5422	-0.01261	0.51045	-0.618	14.95	S(QC)
NF	6	6	0.88189	-0.0149	1.45052	-0.001	3	S(QC)
NF	6	7	0.92531	-0.01376	0.81796	-0.017	1	S(QC)
NF	6	9	0.93677	-0.01449	1.51145	-0.001	3.3	S(QC)
NF	6	10	1.08646	-0.01188	0.76834	-0.137	6.55	S(QC)
NF	6	11	0.91487	-0.01432	0.81965	-0.001	0.4	S(QC)
NF	6	12	0.9148	-0.0189	2.73067	-0.001	9.9	S(QC)
NS	7	1	0.84634	-0.02863	2.12135	-0.001	4.1	S(PE)
NS	7	2	0.84178	-0.02409	2.42529	-0.001	6.45	S(QC)
NS	7	3	0.83932	-0.00939	0.41412	-0.001		S(PE)
NS	7	4	40.71318	-0.0266	0.20049	-39.839	86	S(PE)
NS	7	6	1.88864	-0.00776	0.2	-0.973	5	S(PE)
NS	7	7	0.90855	-0.01291	1.24595	-0.001	2.1	S(PE)
NS	7	9	7.33245	-0.02386	0.2	-6.5	33.65	S(PE)
NS	7	10	0.85749	-0.01091	0.60494	-0.001	0.1	S(PE)
NS	7	11	0.80493	-0.04233	6.54857	-0.001	15.35	S(PE)
NS	7	12	0.84485	-0.01997	1.84837	-0.001	4.3	S(PE)
NT	4	1	0.97651	-0.00944	1.84473	-0.001	8.35	S(AB)
NT	4	2	0.94796	-0.01583	5.33351	-0.001	31.45	S(AB)
NT	4	3	0.89517	-0.02356	3.56005	-0.001	12.5	S(AB)
NT	4	6	0.56891	-0.01484	1.16977	-0.001	2.2	S(AB)

jur	ecozone	genus	a	b	c	k	volmin	model
NT	4	9	1.02	-0.02695	39.39297	-0.116	110	S(AB)
NT	4	10	1.0121	-0.01326	2.95736	-0.001	15.7	S(AB)
NT	5	1	0.98276	-0.01012	3.3599	-0.001	25.75	S(AB)
NT	5	2	1.0189	-0.00673	1.70272	-0.001	9.3	S(AB)
NT	5	3	0.89517	-0.02356	3.56005	-0.001	12.5	S(AB)
NT	5	6	0.56891	-0.01484	1.16977	-0.001	2.2	S(AB)
NT	5	9	1.02	-0.00767	1.57225	-0.001	6.6	S(AB)
NT	5	10	1.0121	-0.01326	2.95736	-0.001	15.7	S(AB)
NT	12	1	1.49924	-0.0028	0.59426	-0.232	16.95	S(YK)
NT	12	2	0.8281	-0.01048	1.7343	-0.02	15.15	S(YK)
NT	12	3	2.14372	-0.0006	0.2	-0.804	13.15	S(YK)
NT	12	6	1.42331	-0.01029	0.72754	-0.707	48.05	S(YK)
NT	12	9	1.10209	-0.00947	1.08178	-0.21	26.95	S(YK)
NT	12	10	0.62561	-0.03052	128.66497	0	92.9	S(YK)
NT	12	12	0.61924	-0.02012	7.27444	0	26.5	S(YK)
ON	6	1	0.96707	-0.01339	0.93643	-0.068	5.2	Developed
ON	6	2	0.94676	-0.01697	2.32289	-0.006	10.7	Developed
ON	6	3	0.86322	-0.01213	0.82035	-0.001	0.45	Developed
ON	6	4	1.5422	-0.01261	0.51045	-0.618	14.95	S(QC)
ON	6	6	0.88189	-0.0149	1.45052	-0.001	3	S(QC)
ON	6	7	2.36421	-0.00851	0.4	-1.406	38.25	Developed
ON	6	9	0.92266	-0.02026	4.27419	-0.004	22.1	Developed
ON	6	10	1.27174	-0.0122	0.4	-0.418	5.6	Developed
ON	6	11	0.91487	-0.01432	0.81965	-0.001	0.4	S(QC)
ON	6	12	0.9148	-0.0189	2.73067	-0.001	9.9	S(QC)
ON	8	1	0.84936	-0.01856	2.07666	-0.004	7.6	S(QC)
ON	8	2	0.87042	-0.01552	1.45192	-0.001	2.9	S(QC)
ON	8	3	1.1954	-0.0058	0.52525	-0.225	8	S(QC)
ON	8	4	1.28327	-0.00716	0.4912	-0.325	9.4	S(QC)
ON	8	6	0.85079	-0.01467	1.25624	-0.001	2	S(QC)
ON	8	7	0.96809	-0.00824	1.0612	-0.001	1.75	S(QC)
ON	8	9	0.9012	-0.01674	2.27014	-0.001	7.85	S(QC)
ON	8	10	0.90288	-0.01778	2.68299	-0.001	10.25	S(QC)
ON	8	11	0.92902	-0.01229	1.08273	-0.001	1.3	S(QC)
ON	8	12	1.01168	-0.00794	0.90927	-0.001	0.9	S(QC)
ON	15	1	0.95391	-0.01122	1.17635	-0.001	1.9	S(QC)
ON	15	2	0.66394	-0.06176	6.6828	-0.001	11.15	S(QC)
PE	7	1	0.84634	-0.02863	2.12135	-0.001	4.1	Developed
PE	7	2	0.84178	-0.02409	2.42529	-0.001	6.45	S(QC)
PE	7	3	0.83932	-0.00939	0.41412	-0.001		Developed
PE	7	4	40.71318	-0.0266	0.20049	-39.839	86	Developed
PE	7	6	1.88864	-0.00776	0.2	-0.973	5	Developed
PE	7	7	0.90855	-0.01291	1.24595	-0.001	2.1	Developed
PE	7	9	7.33245	-0.02386	0.2	-6.5	33.65	Developed
PE	7	10	0.85749	-0.01091	0.60494	-0.001	0.1	Developed
PE	7	11	0.80493	-0.04233	6.54857	-0.001	15.35	Developed
PE	7	12	0.84485	-0.01997	1.84837	-0.001	4.3	Developed
QC	5	1	0.86874	-0.02424	1.06167	-0.073	5	Developed
QC	5	2	0.91273	-0.01786	1.68487	-0.001	3.5	S(6)
QC	5	3	0.93596	-0.01476	1.49183	-0.05	12	S(6)
QC	5	4	1.5422	-0.01261	0.51045	-0.618	15	S(6)
QC	5	6	0.88189	-0.0149	1.45052	-0.001	3	S(6)
QC	5	7	0.92531	-0.01376	0.81796	-0.017	1	S(6)
QC	5	9	0.93677	-0.01449	1.51145	-0.001	3	S(6)
QC	5	10	1.08646	-0.01188	0.76834	-0.137	6.5	S(6)
QC	5	11	0.91487	-0.01432	0.81965	-0.001		S(6)
QC	5	12	0.9148	-0.0189	2.73067	-0.001	10	S(6)
QC	6	1	0.89376	-0.01888	1.87488	-0.001	4.5	Developed
QC	6	2	0.91273	-0.01786	1.68487	-0.001	3.5	Developed
QC	6	3	0.93596	-0.01476	1.49183	-0.05	12	Developed
QC	6	4	1.5422	-0.01261	0.51045	-0.618	15	Developed
QC	6	6	0.88189	-0.0149	1.45052	-0.001	3	Developed
QC	6	7	0.92531	-0.01376	0.81796	-0.017	1	Developed
QC	6	9	0.93677	-0.01449	1.51145	-0.001	3	Developed
QC	6	10	1.08646	-0.01188	0.76834	-0.137	6.5	Developed
QC	6	11	0.91487	-0.01432	0.81965	-0.001		Developed
QC	6	12	0.9148	-0.0189	2.73067	-0.001	10	Developed
QC	7	1	0.8878	-0.01823	2.01967	-0.001	5.5	Developed
QC	7	2	0.84178	-0.02409	2.42529	-0.001	6.5	Developed
QC	7	3	0.94894	-0.01197	1.2257	-0.047	9	Developed
QC	7	4	1.0338	-0.01265	0.7862	-0.123	6	Developed
QC	7	6	1.9	-0.00723	0.26651	-0.951	11	Developed
QC	7	7	0.95204	-0.0103	0.81994	-0.053	3.5	Developed
QC	7	9	0.90682	-0.01371	1.53686	-0.001	3.5	Developed

jur	ecozone	genus	a	b	c	k	volmin	model
QC	7	10	1.07333	-0.00797	0.77512	-0.079	5	Developed
QC	7	11	0.95587	-0.01254	1.18896	-0.001	2	Developed
QC	7	12	0.93513	-0.01544	2.51953	-0.001	10.5	Developed
QC	8	1	0.84936	-0.01856	2.07666	-0.004	7.5	Developed
QC	8	2	0.87042	-0.01552	1.45192	-0.001	3	Developed
QC	8	3	1.1954	-0.0058	0.52525	-0.225	8	Developed
QC	8	4	1.28327	-0.00716	0.4912	-0.325	9	Developed
QC	8	6	0.85079	-0.01467	1.25624	-0.001	2	Developed
QC	8	7	0.96809	-0.00824	1.0612	-0.001	2	Developed
QC	8	9	0.9012	-0.01674	2.27014	-0.001	8	Developed
QC	8	10	0.90288	-0.01778	2.68299	-0.001	10	Developed
QC	8	11	0.92902	-0.01229	1.08273	-0.001	1.5	Developed
QC	8	12	1.01168	-0.00794	0.90927	-0.001	1	Developed
QC	15	1	0.95391	-0.01122	1.17635	-0.001	2	Developed
QC	15	2	0.66394	-0.06176	6.6828	-0.001	11	Developed
SK	5	1	0.86842	-0.02104	3.59886	-0.01	20	S(MB)
SK	5	2	0.93833	-0.02717	8.67665	0	26.5	S(MB)
SK	5	3	0.8677	-0.02564	4.9783	-0.023	28	S(MB)
SK	5	6	0.73078	-0.02904	9.63981	0	29	S(MB)
SK	5	9	1.1	-0.0089	1.95143	0	8	S(MB)
SK	5	12	0.85723	-0.0171	1.71783	-0.023	9.5	S(MB)
SK	6	1	0.86842	-0.02104	3.59886	-0.01	20	S(MB)
SK	6	2	0.93833	-0.02717	8.67665	0	26.5	S(MB)
SK	6	3	0.8677	-0.02564	4.9783	-0.023	28	S(MB)
SK	6	6	0.73078	-0.02904	9.63981	0	29	S(MB)
SK	6	7	1.1	-0.05409	75	-0.403	80	S(MB)
SK	6	9	1.1	-0.0089	1.95143	0	8	S(MB)
SK	6	10	0.70955	-0.10201	75	0	26	S(MB)
SK	6	12	0.85723	-0.0171	1.71783	-0.023	9.5	S(MB)
SK	9	1	0.79702	-0.0225	2.80681	0	7.5	S(MB)
SK	9	2	0.86305	-0.02933	3.74207	-0.066	25	S(MB)
SK	9	3	0.8677	-0.02564	4.9783	-0.023	28	S(MB)
SK	9	6	1.05564	-0.01335	1.13858	-0.267	27.5	S(MB)
SK	9	7	1.1	-0.05409	75	-0.403	80	S(MB)
SK	9	9	0.87963	-0.01627	0.94182	-0.042	3	S(MB)
SK	9	10	0.70955	-0.10201	75	0	26	S(MB)
SK	9	12	0.85723	-0.0171	1.71783	-0.023	9.5	S(MB)
YK	4	1	0.99765	-0.00379	0.64309	-0.252	35.4	S(BC)
YK	4	2	0.78951	-0.00652	2.32909	-0.015	38.5	S(BC)
YK	4	3	2.14372	-0.0006	0.2	-0.804	13.15	S(BC)
YK	4	6	1.42331	-0.01029	0.72754	-0.707	48.05	S(BC)
YK	4	9	0.75052	-0.01137	11.76224	0	68.9	S(BC)
YK	4	10	0.62561	-0.03052	128.66497	0	92.9	S(BC)
YK	4	12	0.61924	-0.02012	7.27444	0	26.5	S(BC)
YK	5	1	1.49924	-0.0028	0.59426	-0.232	16.95	S(12)
YK	5	2	0.8281	-0.01048	1.7343	-0.02	15.15	S(12)
YK	5	3	2.14372	-0.0006	0.2	-0.804	13.15	S(12)
YK	5	6	1.42331	-0.01029	0.72754	-0.707	48.05	S(12)
YK	5	9	1.10209	-0.00947	1.08178	-0.21	26.95	S(12)
YK	5	10	0.62561	-0.03052	128.66497	0	92.9	S(12)
YK	5	12	0.61924	-0.02012	7.27444	0	26.5	S(12)
YK	12	1	1.49924	-0.0028	0.59426	-0.232	16.95	Developed
YK	12	2	0.8281	-0.01048	1.7343	-0.02	15.15	Developed
YK	12	3	2.14372	-0.0006	0.2	-0.804	13.15	S(BC)
YK	12	6	1.42331	-0.01029	0.72754	-0.707	48.05	S(BC)
YK	12	9	1.10209	-0.00947	1.08178	-0.21	26.95	Developed
YK	12	10	0.62561	-0.03052	128.66497	0	92.9	S(BC)
YK	12	12	0.61924	-0.02012	7.27444	0	26.5	S(bC)

APPENDIX 7 - Selected codes, classes and descriptions adopted from CanFI2001

Jurisdiction

Code	Province or territory
0	Newfoundland and Labrador – Newfoundland (NF)
1	Newfoundland and Labrador – Labrador (NF)
2	Nova Scotia (NS)
3	Prince Edward Island (PE)
4	New Brunswick (NB)
5	Quebec (QC)
6	Ontario (ON)
7	Manitoba (MB)
8	Saskatchewan (SK)
9	Alberta (AB)
10	British Columbia (BC)
11	Yukon (YK)
12	Northwest Territories (NT)
13	Nunavut (NU)

Ecozones

Code	Ecozone
1	Arctic Cordillera
2	Northern Arctic
3	Southern Arctic
4	Taiga Plains
5	Taiga Shield
6	Boreal Shield
7	Atlantic Maritime
8	Mixedwood Plains
9	Boreal Plains
10	Prairies
11	Taiga Cordillera
12	Boreal Cordillera
13	Pacific Maritime
14	Montane Cordillera
15	Hudson Plains

Forest Type

Code	Class	Definition
1	Softwood	Stocked forest land where 76% to 100% of the canopy is coniferous
2	Mixedwood	Stocked forest land where 26% to 75% of the canopy is coniferous
3	Hardwood	Stocked forest land where 0% to 25% of the canopy is coniferous
-8	Missing value	No information available
-9	Not applicable	For records that are not stocked forest land

Predominant Genus

Code	Class	Definition
1	Spruce	Most abundant tree genus is *Picea*
2	Pine	Most abundant tree genus is *Pinus*
3	Fir	Most abundant tree genus is *Abies*
4	Hemlock	Most abundant tree genus is *Tsuga*
5	Douglas-fir	Most abundant tree genus is *Pseudotsuga*
6	Larch	Most abundant genus is *Larix*
7	Cedar and other conifers	Most abundant genus is one of *Thuja*, *Juniperus*, *Taxus*, or *Chamaecyparis*
8	Unspecified conifers	Most abundant genus identified as conifer only
9	Poplar	Most abundant tree genus is *Populus*
10	Birch	Most abundant tree genus is *Betula*
11	Maple	Most abundant tree genus is *Acer*
12	Other broadleaved species	Most abundant genus is one of *Carya, Juglans, Alnus, Ostrya, Carpinus, Fagus, Quercus, Ulmus, Morus, Liriodendron, Magnolia, Sassafras, Platanus, Prunus, Gleditsia, Robinia, Tilia, Nyssa, Cornus, Arbutus, Fraxinus, Salix, Gymnocladus, Celtis, Amelanchier, Corylus, Crataegus, Ilex, Malus, Nemopanthus, Rhus,* or *Sorbus*
13	Unspecified broadleaved species	Most abundant genus identified as broadleaved only
-8	Missing value	No information available
-9	Not applicable	For records that are not stocked forest land

First (lead) Species

Code	Common name	Scientific name
100	Spruce	***Picea***
101	Black spruce	*Picea mariana* (Mill.) BSP
102	Red spruce	*Picea rubens* Sarg.
103	Norway spruce	*Picea abies* (L.) Karst.
104	Engelmann spruce	*Picea engelmannii* Parry ex Engelm.
105	White spruce	*Picea glauca* (Moench) Voss
106	Sitka spruce	*Picea sitchensis* (Bong.) Carrière
107	Black and red spruce	*Picea mariana* (Mill.) BSP and *Picea rubens* Sarg.
108	Red and white spruce	*Picea rubens* Sarg. and *Picea glauca* (Moench) Voss
109	Other spruce	*Picea* spp. excluding *P. mariana* and *P. rubens*
110	Spruce and balsam fir	*Picea* spp. and *Abies balsamea* (L.) Mill.
200	Pine	***Pinus***
201	Western white pine	*Pinus monticola* Dougl. ex D. Don
202	Eastern white pine	*Pinus strobus* L.
203	Jack pine	*Pinus banksiana* Lamb.
204	Lodgepole pine	*Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm.
205	Shore pine	*Pinus contorta* var. *contorta*
206	Whitebark pine	*Pinus albicaulis* Engelm.
207	Austrian pine	*Pinus nigra* Arnold
208	Ponderosa pine	*Pinus ponderosa* P. Laws. ex C. Laws.
209	Red pine	*Pinus resinosa* Ait.
210	Pitch pine	*Pinus rigida* Mill.
211	Scots pine	*Pinus sylvestris* L.
212	Mugho pine	*Pinus mugo* Turra
213	Limber pine	*Pinus flexilis* James

Code	Common name	Scientific name
214	Jack, lodgepole, and shore pine	*Pinus banksiana* Lamb., *Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm., and *Pinus contorta* var. *contorta*
215	Other pine	*Pinus* spp. excluding the two white pines, and the jack pine group
216	Hybrid jack and lodgepole pine	
217	Whitebark and limber pine	*Pinus albicaulis* Engelm. and *Pinus flexilis* James
300	Fir	***Abies***
301	Amabilis fir	*Abies amabilis* (Dougl. ex Loud.) Dougl. ex. J. Forbes
302	Balsam fir	*Abies balsamea* (L.) Mill.
303	Grand fir	*Abies grandis* (Dougl. ex D. Don) Lindl.
304	Subalpine fir (or alpine fir)	*Abies lasiocarpa* (Hook.) Nutt.
305	Balsam and alpine fir	*Abies balsamea* (L.) Mill. and *Abies lasiocarpa* (Hook.) Nutt.
306	Alpine, amabilis, and grand fir	*Abies lasiocarpa* (Hook.) Nutt., *Abies amabilis* (Dougl. ex Loud.) Dougl. ex. J. Forbes, and *Abies grandis* (Dougl. ex D. Don) Lindl.
307	Japanese fir	*Abies firma*
320	Spruce and balsam fir	*Picea* and *Abies balsamea* (L.) Mill.
321	Balsam fir and spruce	*Abies balsamea* (L.) Mill. and *Picea*
400	Hemlock	***Tsuga***
401	Eastern hemlock	*Tsuga canadensis* (L.) Carrière
402	Western hemlock	*Tsuga heterophylla* (Raf.) Sarg.
403	Mountain hemlock	*Tsuga mertensiana* (Bong.) Carrière
404	Western and mountain hemlock	*Tsuga heterophylla* (Raf.) Sarg. and *Tsuga mertensiana* (Bong.) Carrière
500	Douglas-fir and Rocky Mountain Douglas-fir	*Pseudotsuga menziesii* var. *menziesii*(Mirb.) Franco, and *Pseudotsuga menziesii* var. *glauca* (Beissn.) Franco
600	Tamarack/larch	***Larix***
601	European larch	*Larix decidua* Mill.
602	Tamarack	*Larix laricina* (Du Roi) K. Koch
603	Western larch	*Larix occidentalis* Nutt.
604	Subalpine larch	*Larix lyallii* Parl.
605	Japanese larch	*Larix kaempferi* (Lamb.) Carrière
700	Cedar	***Thuja***
701	Eastern white-cedar	*Thuja occidentalis* L.
702	Western redcedar	*Thuja plicata* Donn ex D. Don
703	Cedar and other conifers	*Thuja*, *Juniperus*, *Taxus*, and *Chamaecyparis*
800	Juniper	***Juniperus***
801	Eastern redcedar	*Juniperus virginiana* L.
802	Rocky Mountain juniper	*Juniperus scopulorum* Sarg.
900	Yew	***Taxus***
901	Western yew	*Taxus brevifolia* Nutt.
1000	Cypress	***Chamaecyparis***
1001	Yellow cypress	*Chamaecyparis nootkatensis* (D. Don) Spach
1100	Other softwoods/ other conifers	
1110	Tamarack and cedar	*Larix* and *Thuja*

Code	Common name	Scientific name
1150	Unspecified softwood species	
1200	Poplar/aspen	***Populus***
1201	Trembling aspen	*Populus tremuloides* Michx.
1202	European white poplar	*Populus alba* L.
1203	Balsam poplar	*Populus balsamifera* L.
1204	Black cottonwood	*Populus trichocarpa* Torr. & A. Gray
1205	Eastern cottonwood	*Populus deltoides* Bartr. ex Marsh. ssp. *deltoides*
1206	Largetooth aspen	*Populus grandidentata* Michx.
1207	Carolina poplar	*Populus* × *canadensis* Moench cv. Eugenei
1208	Lombardy poplar	*Populus nigra* L. cv. Italica
1209	Hybrid poplar	*Populus* spp. × *Populus* spp.
1210	Other poplar	*Populus* spp. excluding P. *tremuloides*
1211	Balsam poplar, largetooth aspen and eastern cottonwood	
1212	Balsam poplar and black cottonwood	
1300	Birch	***Betula***
1301	Yellow birch	*Betula alleghaniensis* Britt.
1302	Cherry birch	*Betula lenta* L.
1303	White birch	*Betula papyrifera* Marsh.
1304	Gray birch	*Betula populifolia* Marsh.
1305	Alaska paper birch	*Betula neoalaskana* Sarg.
1306	Mountain paper birch	*Betula cordifolia* Regel
1307	Other birch	*Betula* spp. excluding B. *alleghaniensis*
1308	Alaska paper and white birch	*Betula neoalaskana* Sarg. and *Betula papyrifera* Marsh.
1309	European birch	*Betula pendula* Roth. syn. B. *verrucosa* Ehrh.
1310	White and gray birch	
1400	Maple	*Acer*
1401	Sugar maple	*Acer saccharum* Marsh.
1402	Black maple	*Acer nigrum* Michx.
1403	Bigleaf maple	*Acer macrophyllum* Pursh
1404	Manitoba maple	*Acer negundo* L.
1405	Red maple	*Acer rubrum* L.
1406	Silver maple	*Acer saccharinum* L.
1407	Norway maple	*Acer platanoides* L.
1408	Sugar and black maple	*Acer saccharum* Marsh. and *Acer nigrum* Michx.
1409	Other maple	*Acer* spp. excluding A. *saccharum* and A. *nigrum*
1410	Striped maple	*Acer pensylvanicum* L.
1411	Mountain maple	*Acer spicatum* Lamb.
1412	Silver and red maple	*Acer platanoides* L. and *Acer rubrum* L.
1500	Other hardwoods/ other broad-leaved species	Broad-leaved spp. excluding *Populus*, *Betula* and *Acer* spp.
1550	Unspecified hardwood species	

Code	Common name	Scientific name
1600	Hickory	***Carya***
1601	Bitternut hickory	*Carya cordiformis* (Wangenh.) K. Koch
1602	Red hickory (Pignut hickory)	*Carya glabra* (Mill.) Sweet var. *odorata* (Marsh.) Little
1603	Shagbark hickory	*Carya ovata* (Mill.) K. Koch
1604	Shellbark hickory	*Carya laciniosa* Michx. f.
1700	Walnut	***Juglans***
1701	Butternut	*Juglans cinerea* L.
1702	Black walnut	*Juglans nigra* L.
1800	Alder	***Alnus***
1801	Sitka alder	*Alnus viridis* ssp. *sinuata* (Regel) Á. Löve & D. Löve
1802	Red alder	*Alnus rubra* Bong.
1803	Green Alder	*Alnus incana* ssp. *tenuifolia* (Nutt.) Breit.
1804	Mountain alder	*Alnus viridis* ssp. *crispa* (Ait.) Turrill
1805	Speckled alder	*Alnus incana* ssp. *rugosa* (Du Roi) J. Clausen
1900	Ironwood (hop-hornbeam)	*Ostrya virginiana* (Mill.) K. Koch
1950	Blue-beech (American hornbeam)	*Carpinus caroliniana* Walt.
2000	Beech	*Fagus grandifolia* Ehrh.
2100	Oak	***Quercus***
2101	White oak	*Quercus alba* L.
2102	Swamp white oak	*Quercus bicolor* Willd.
2103	Garry oak	*Quercus garryana* Dougl.
2104	Bur oak	*Quercus macrocarpa* Michx.
2105	Pin oak	*Quercus palustris* Muenchh.
2106	Chinquapin oak	*Quercus muehlenbergii* Engelm.
2107	Chestnut oak	*Quercus montana* Willd.
2108	Red oak	*Quercus rubra* L.
2109	Black oak	*Quercus velutina* Lam.
2110	Northern pin oak	*Quercus ellipsoidelis* E.J. Hill
2111	Shumard oak	*Quercus shumardii* Buckl.
2200	Elm	***Ulmus***
2201	White elm	*Ulmus americana* L.
2202	Slippery elm	*Ulmus rubra* Muhl.
2203	Rock elm	*Ulmus thomasii* Sarg.
2300	Red mulberry	*Morus rubra* L.
2400	Tulip-tree	*Liriodendron tulipifera* L.
2500	Cucumber-tree	*Magnolia acuminata* L.
2600	Sassafras	*Sassafras albidum* (Nutt.) Nees
2700	Sycamore	*Platanus occidentalis* L.
2800	Cherry	***Prunus***
2801	Black cherry	*Prunus serotina* Ehrh.
2802	Pin cherry	*Prunus pennsylvanica* L. f.
2803	Bitter cherry	*Prunus emarginata* Dougl.
2804	Choke cherry	*Prunus virginiana* L. var. *virginiana*
2900	Honey-locust	*Gleditsia triacanthos* L.
2901	Black locust	*Robinia pseudoacacia* L.
3000	Basswood	*Tilia americana* L.
3100	Black-gum	*Nyssa sylvatica* Marsh.
3200	Flowering dogwood	***Cornus***

Code	Common name	Scientific name
3201	Eastern flowering dogwood	*Cornus florida* L.
3202	Western flowering dogwood	*Cornus nuttallii* Audubon
3203	Alternate-leaf dogwood	*Cornus alternifolia* L. f.
3300	*Arbutus*	*Arbutus menziesii* Pursh
3400	Ash	***Fraxinus***
3401	White ash	*Fraxinus americana* L.
3402	Black ash	*Fraxinus nigra* Marsh.
3403	Red ash	*Fraxinus pennsylvanica* Marsh.
3404	Northern red ash	*Fraxinus pennsylvanica* var. *austini* Fern.
3405	Green ash	*Fraxinus pennsylvanica* var. *subintegerrima* (Vahl) Fern.
3406	Blue ash	*Fraxinus* quadrangulata Michx.
3407	Oregon ash	*Fraxinus latifolia* Benth.
3408	Pumpkin ash	*Fraxinus profunda* (Bush) Bush
3500	Willow	***Salix***
3501	Black willow	*Salix nigra* Marsh.
3502	Peachleaf willow	*Salix amygdaloides* Andersson
3503	Pacific willow	*Salix lucida* ssp. *lasiandra* (Benth.) E. Murr.
3504	Crack willow	*Salix fragilis* L.
3505	Shining willow	*Salix lucida* Muhl. ssp. *lucida*
3600	Kentucky coffee tree	*Gymnocladus dioicus* (L.) K. Koch
3700	Hackberry	*Celtis occidentalis* L.
3800	Serviceberry	*Amelanchier genus*
3900	Beaked hazel	*Corylus cornuta* Marsh.
3910	Hawthorn	*Crataegus genus*
3920	Common winterberry (black-alder)	*Ilex verticillata* (L.) A. Gray
3930	Apple	*Malus genus*
3940	Mountain-holly	*Nemopanthus mucronatus* (L.) Trel.
3950	Staghorn sumac	*Rhus typhina* L.
3960	Mountain-ash	*Sorbus genus*
4000	Tolerant hardwoods	Shade tolerant species like beech, sugar maple, and yellow birch
5000	Intolerant hardwoods	Shade intolerant species such as trembling aspen and white birch

Canadian Forest Service Contacts

For more information about the Canadian Forest Service, visit our website at
cfs.nrcan.gc.ca
or contact any of the following Canadian Forest Service establishments

1 Atlantic Forestry Centre
P.O. Box 4000
Fredericton, NB E3B 5P7
Tel.: (506) 452-3500 Fax: (506) 452-3525
cfs.nrcan.gc.ca/regions/afc

Atlantic Forestry Centre – District Office
Sir Wilfred Grenfell College Forestry Centre
University Drive
Corner Brook, Newfoundland A2H 6P9
Tel.: (709) 637-4900 Fax: (709) 637-4910

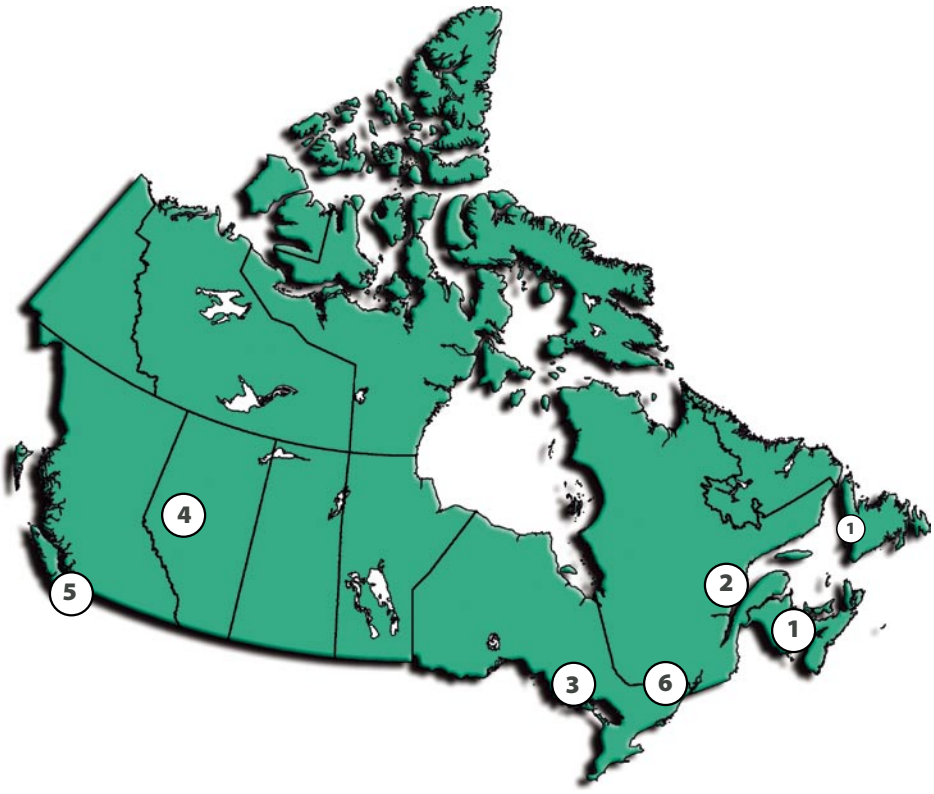
2 Laurentian Forestry Centre
1055 du P.E.P.S., P.O. Box 10380
Sainte-Foy, PQ G1V 4C7
Tel.: (418) 648-5788 Fax: (418) 648-5849
cfs.nrcan.gc.ca/regions/lfc

3 Great Lakes Forestry Centre
P.O. Box 490 1219 Queen St. East
Sault Ste. Marie, ON P6A 5M7
Tel.: (705) 949-9461 Fax: (705) 759-5700
cfs.nrcan.gc.ca/regions/glfc

4 Northern Forestry Centre
5320-122nd Street
Edmonton, AB T6H 3S5
Tel.: (403) 435-7210 Fax: (403) 435-7359
cfs.nrcan.gc.ca/regions/nofc

5 Pacific Forestry Centre
506 West Burnside Road
Victoria, BC V8Z 1M5
Tel.: (250) 363-0600 Fax: (250) 363-0775
cfs.nrcan.gc.ca/regions/pfc

6 Headquarters
580 Booth St., 8th Fl.
Ottawa, ON K1A 0E4
Tel.: (613) 947-7341 Fax: (613) 947-7396
cfs.nrcan.gc.ca/regions/ncr



To order publications on-line, visit the Canadian Forest Service Bookstore at:
bookstore.cfs.nrcan.gc.ca