QuickStart Guide

Atlantis Availability Calculator

A Calculator to find Atlantis Food Availability Coefficients

v0.9.0 (beta)

NOAA – National Marine Fisheries Service

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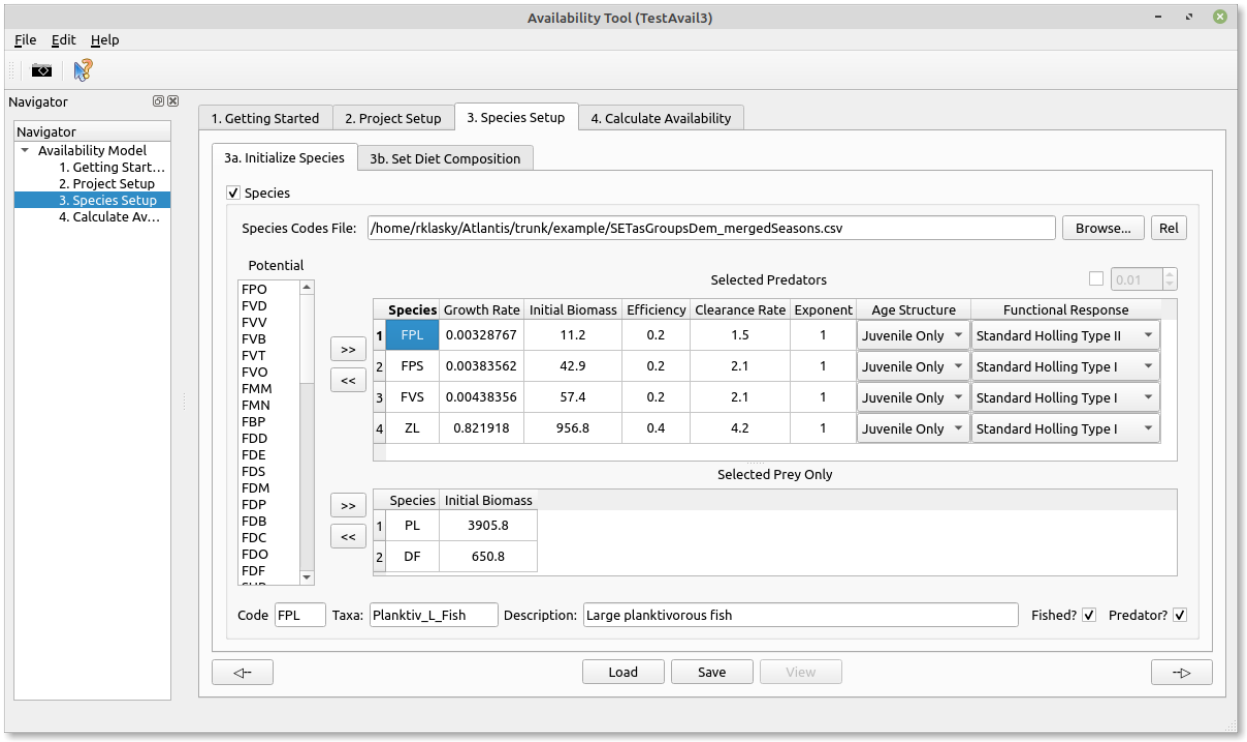
1. Introduction

The Atlantis Availability Calculator is used to create Atlantis Food Availability Coefficients from the following Species input data: Growth Rate, Initial Biomass, Efficiency, Clearance Rate, Exponent, Age Structure, and Functional Response. A brief description of each of these is given via hover help when the cursor is held over a Predator or Prey column heading.



Age Structure values are:

- Juvenile Only
- Adult Only
- All Ages

Functional Response values are:

- Standard Holling Type I
- Standard Holling Type II
- Standard Holling Type II½
- Standard Holling Type III
- Modified Holling Type II
- Modified Holling Type II½
- Modified Holling Type III

The formulae used for each of the above Functional Responses can be viewed by clicking the WhatsThis  help icon on the column title, Functional Response.

2. Setup

The Availability Calculator uses only flat CSV data files, no database setup is needed. Simply run the executable.

3. Program Execution

Windows:

1. Create a directory for the release and copy the zip file into it.
2. Unzip the zip file containing the executable and required auxiliary files.
3. Double click the executable file and the application should start up.

Linux:

1. Create a directory for the release and copy the tar file into it.
2. Untar the tar file containing the executable and required auxiliary files with:
   tar xvf *nameOfFile.tar*
3. Double click the **Availability** file and the application should start up.

Clicking **Help -> About** should raise a window with application information and is a good way to test that the application is functioning properly.

4. Online Help

Online help is available in two formats:

1) Hover Help

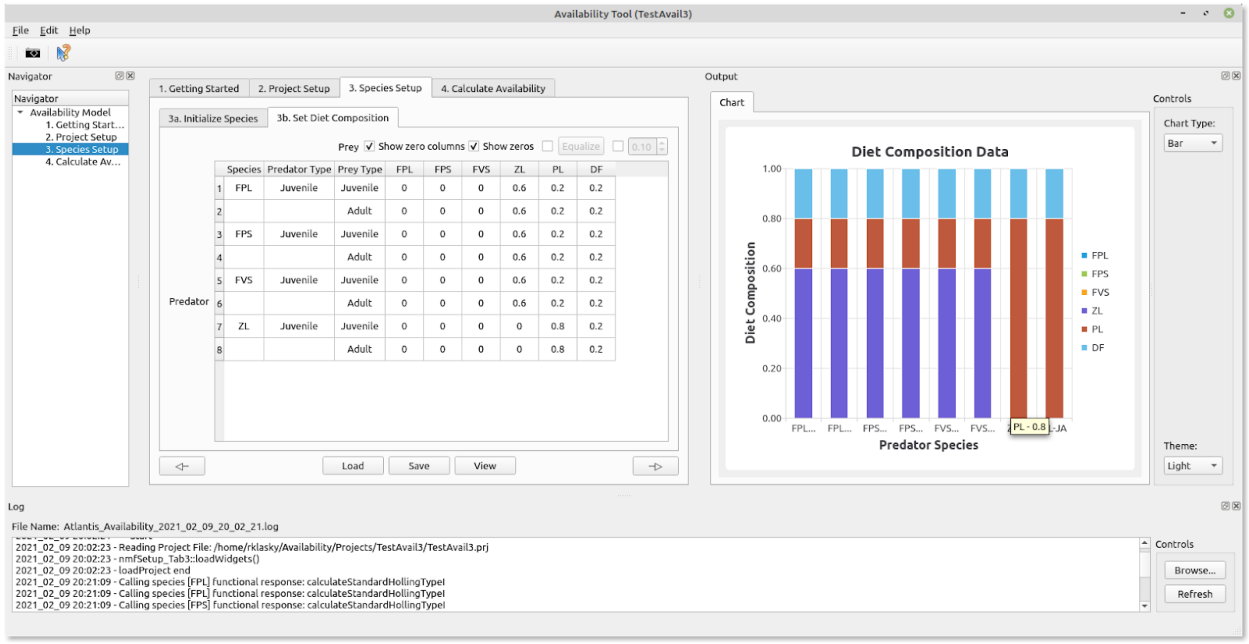
Hover Help is available by holding the cursor over a GUI element. If Hover Help has been implemented for the element, a short textual tooltip will briefly appear.

2) WhatsThis? Help

WhatsThis? Help is typically more detailed information than what's available in Hover Help. It's available by first clicking on the arrow/question mark icon in the application toolbar and then hovering over a GUI element. If WhatsThis? help has been implemented for a GUI element, the cursor will change from a circle with a diagonal line to a question mark with an arrow at the bottom. Clicking on the element with the changed cursor will cause more detailed information to pop up on the screen, where it will remain until the user clicks the cursor.

5. GUI Layout

The Availability Calculator's user interface is set up as a collection of movable and resizable windows. From left to right they are: **Navigator**, **Data Input,** and **Output** windows. An optional window is the **Log** window which shows the running log (by clicking Refresh) of the current application run. The Log window can be raised by right clicking on the top window border and checking the box next to Log.



6. Toolbar icons

There are 2 toolbar icons: Screenshot and WhatsThis? Help,

1. Chart Capturing: 

   The  icon will cause the currently visible chart to be saved into the outputImages project directory.

2. WhatsThis? Help: 

   This has been described in the Online Help section above. (You may do WhatsThis? Help on the WhatsThis? Icon itself!)

7. Project Setup Tab

Prior to running an availability calculation, the user must create a Project. In the Setup group in the Navigator, the user sets up various Project parameters (i.e., name, directory, description). The user must be sure to click Save prior to moving to another tabbed window.

The recommended workflow is for the user to create a separate project directory for each project file. Creating a new project directory for each project will help prevent data files from being mixed with different projects.

1) Sample Project

The tool is shipped with a sample project. It's located in the sample_data/Projects/TestAvail1 directory. Open the project name, TestAvail1.prj, from Tab 2 (Project Setup). You'll then need to select the project directory that the project was in (it's different for everyone since it depends on where you installed the tool).

The sample project has 4 predator and 2 prey species. You'll need to know the location of your *_biol_*.prm file if you want to update that file with the calculated availability coefficients.

8. Species Setup Tab

After setting up the Project, the user then moves to the Species Setup tab. There are two sub-tabs here: Initialize Species and Set Diet Composition. The former is used to assign species to the predator table and to the prey table and to fill in those tables with initial values. The latter is used to set the diet composition data between predator and prey. The sum of each row in this table must be 1.

After these data are entered and the user clicks Save, the user then moves to the Calculate Availability tab.

9. Calculate Availability Tab

The Calculate Availability tab allows the user to run the calculator and produce the Availability coefficients. The species name shown in this table is in the Atlantis species name form. After running the user may save the coefficients to a CSV file or export the coefficients to an Atlantis parameter file.

10. Workflow

1. Create Project
    a. Projects are setup in Tab 2 (Project Setup)
    b. Make sure to save your Project

2. Define Predator and Prey Species
    a. In tab "3a. Initialize Species":
        i. Select, from the list of Potential Species, the Predator and Prey Species
        ii. Enter and select the appropriate values for the Predator and Prey tables
        iii. Click Save when done
    b. In tab "3b. Set Diet Composition":

i. Enter Diet Composition data for the Species, Predator Type, and Prey Type combinations
ii. Click Save when done
iii. Click View to visually inspect the Diet Composition data you just entered

3. Calculate
    a. Click the large Calculate button to generate the Availability coefficients
    b. Once calculated, using the available controls, you can hide the zero columns or hide the zero values
    c. Click Save to save the coefficients to a CSV file
    d. Click Export to select an Atlantis *_biol_*.prm file and automatically replace the existing Availability coefficients with the new coefficients

11. Troubleshooting

1) **An application feature not working correctly**

The application has a log system where status messages are periodically saved to an output file. The contents of these log files may be viewed by the user from within the application by enabling the Log window.

To enable the Log window, right click anywhere on the toolbar and check the Log item. The Log window will appear in the application. You may click and drag it by its title to relocate it if desired. To view the most recent Log file, click the **Refresh** button in the Log window. The user may view a previous Log file by clicking the **Browse** button and selecting the desired Log file. After 50 Log files have been created, the user will be prompted to delete the current Log files.

Log files are time-stamped and color-coded. Colors are defined as follows:

- Black - Informational text
- Blue - New section of messages
- Red - Warning
- **Red Bold** - Error