

Update to the LandWeb species layers

A metadata report prepared for the LandWeb project

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Species classification ties

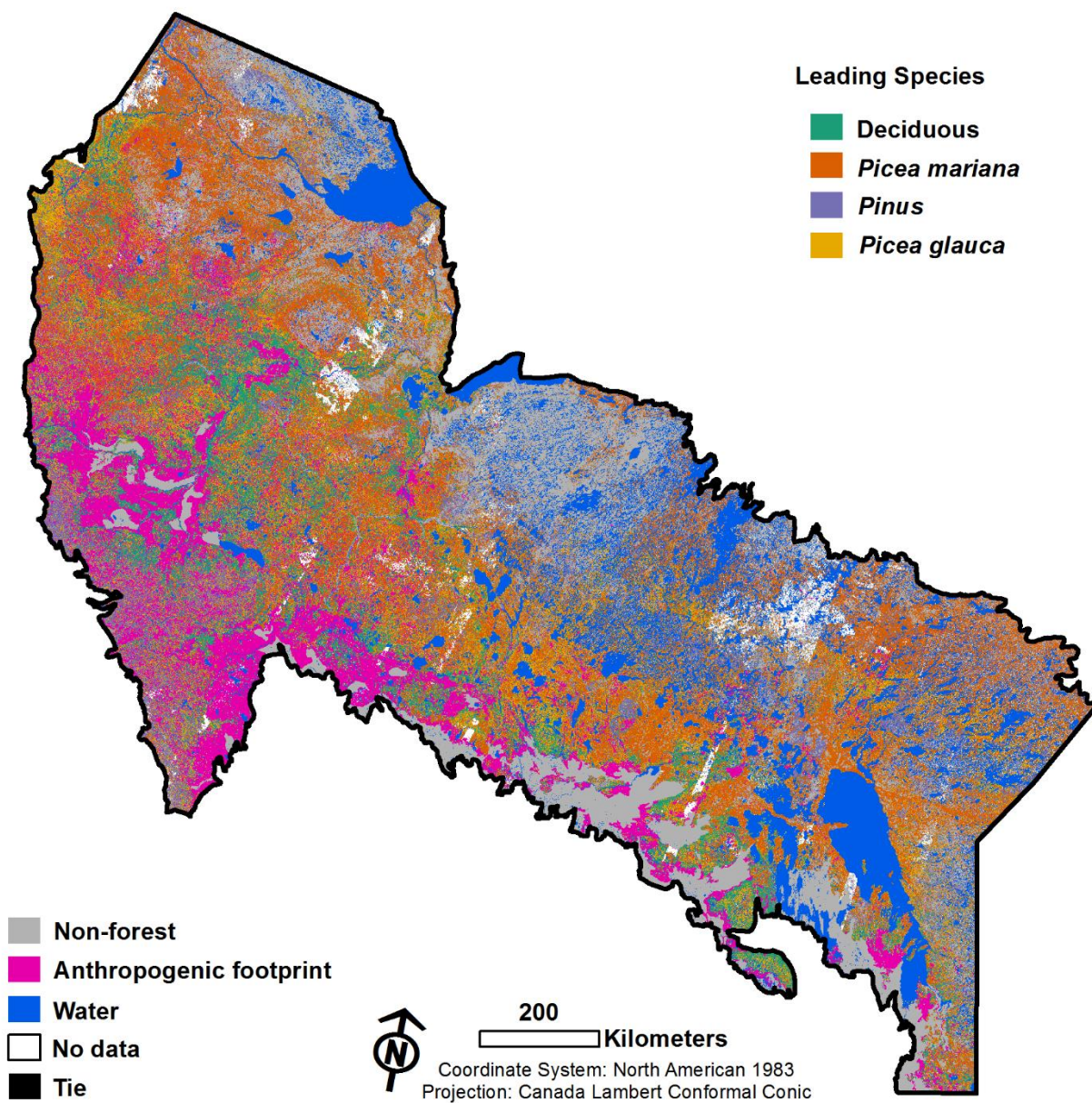
The k -nearest neighbors (KNN) imputation procedure described in the main LandWeb report resulted in species association layers for the years 1990, 2000, 2010, and a dateless image based on climate and elevation data. The KNN was parameterized with $k=15$ nearest neighbors so as to avoid ties in the voting procedure for the species association classification. However, there were still significant ties in the predictions, which could not be resolved based on a majority vote from the 15 neighbors. Ties per prediction are given in Table 1.

Table 1. Percentage of total pixels predicted, missing, and tied by predicted layer.				
	1990	2000	2010	Dateless
Species associations	39.8%	38.2	35.2	38.1
Non-forested	47.6%	47.6	47.6	47.6
Missing data	2.2%	4.3	8.0	0
Tie	10.4%	9.9	9.2	14.3

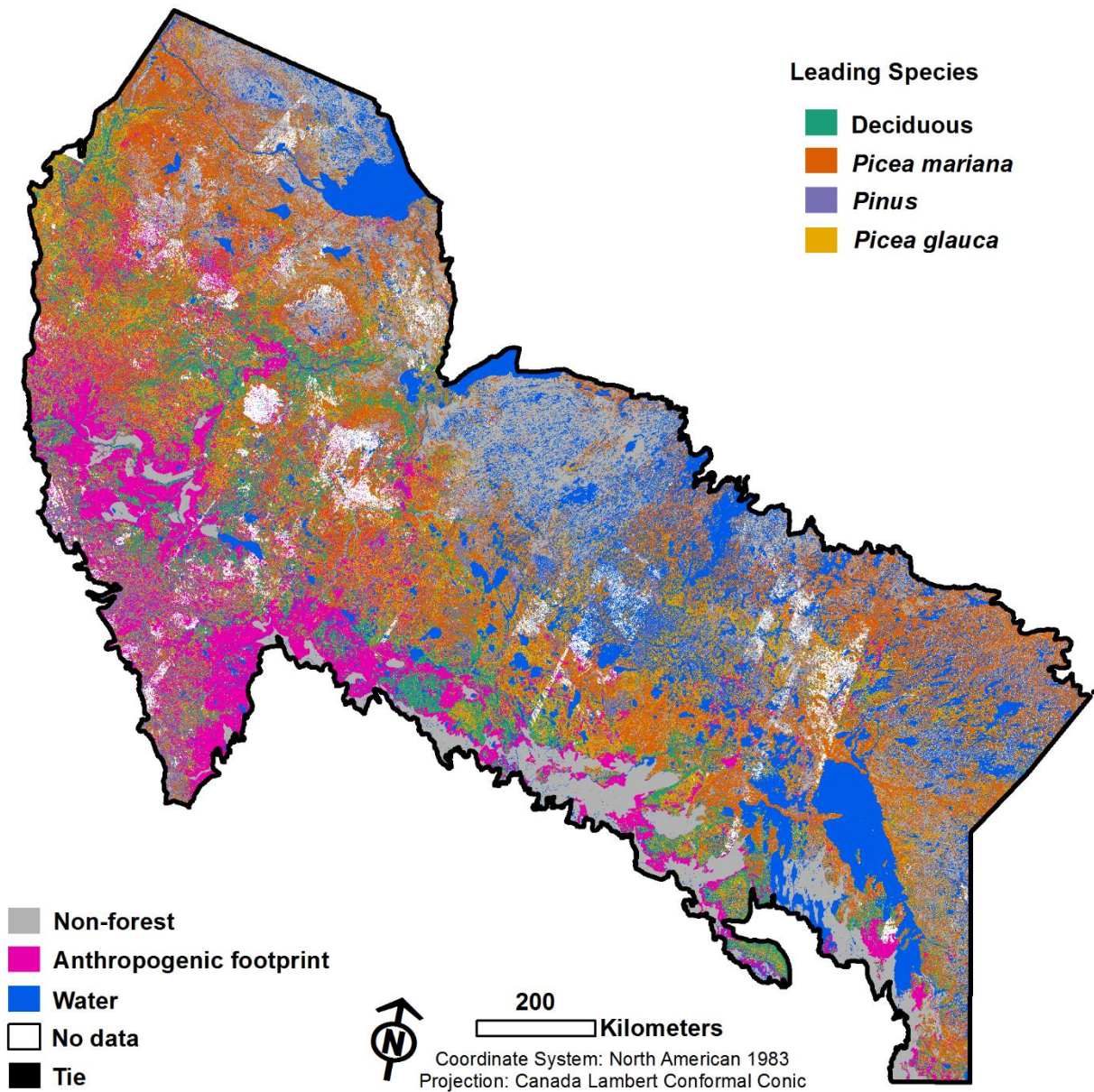
Solution

The ties were filled by minimizing the Euclidean distance to the nearest neighbors. For example, if a pixel received 6 votes for *P. mariana* and 6 votes for *P. glauca*, then the average Euclidean distance of the 6 *P. mariana* samples was compared with the average Euclidean distance of the 6 *P. glauca* samples and whichever species had the lower average distance was used to break the tie. In addition, the anthropogenic footprint was filled in the 1990 layer using the procedure described in the main LandWeb report. The updated species association layers are shown in the attached maps.

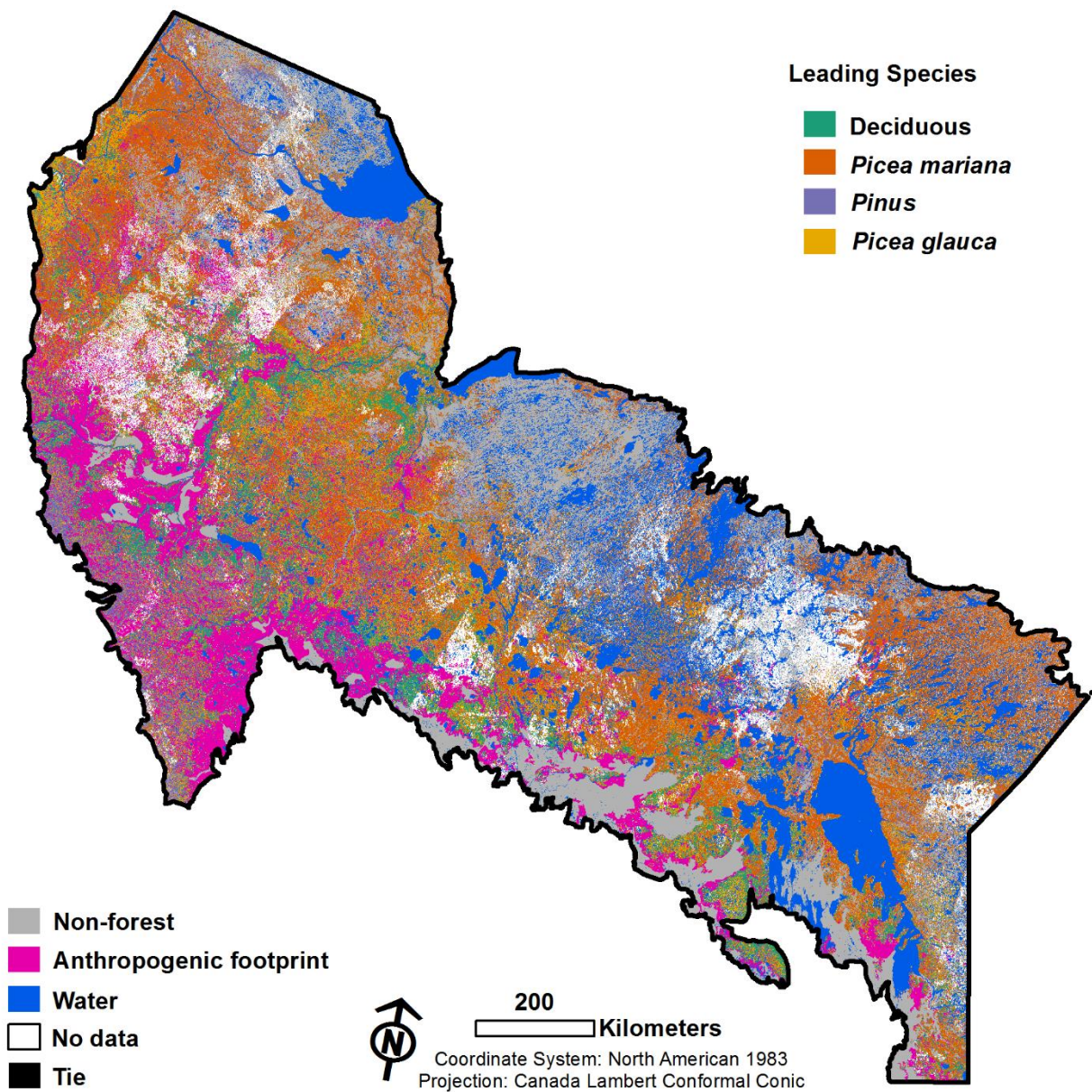
1990 Species Association (no ties)



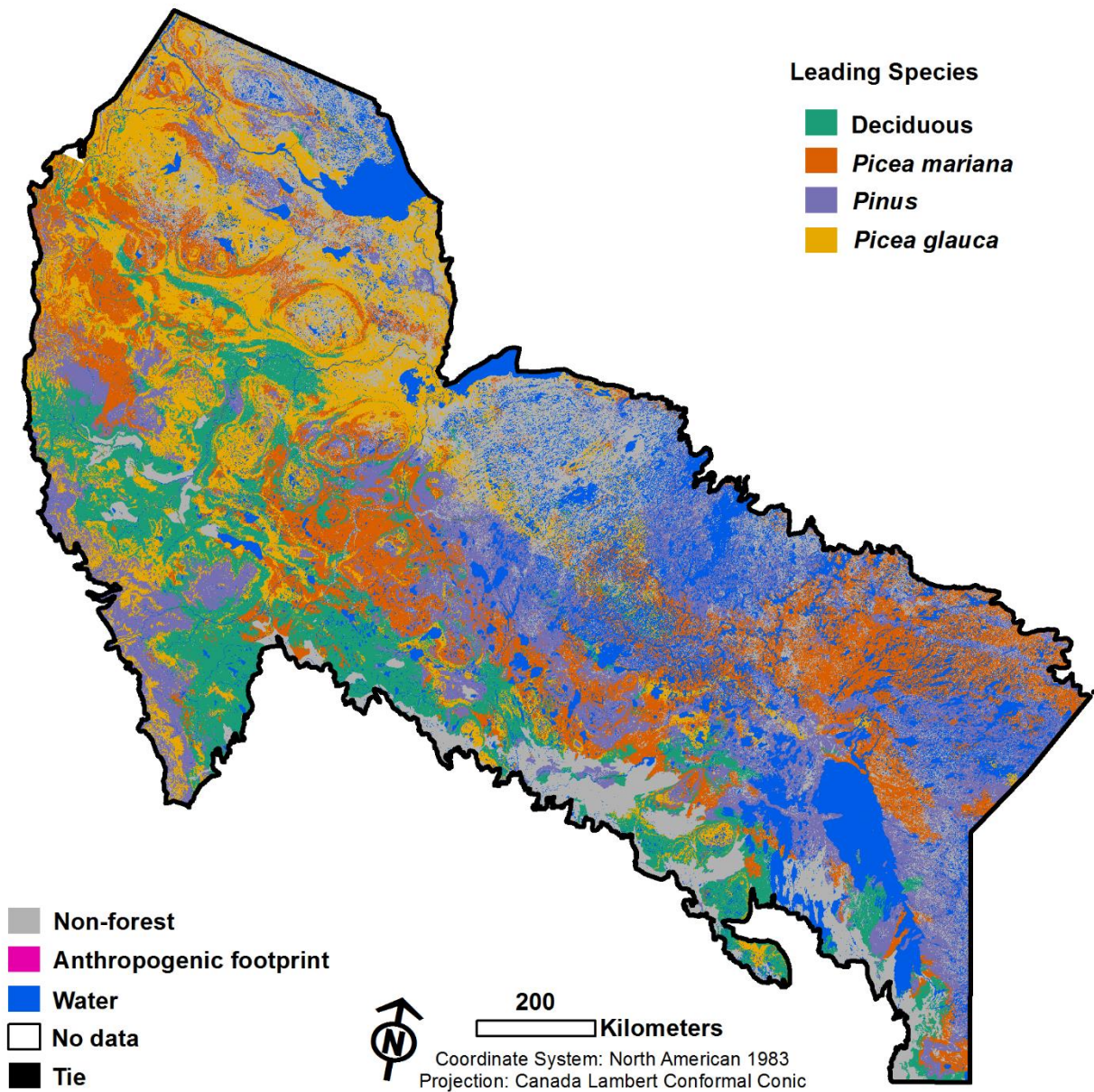
2000 Species Association (no ties)



2010 Species Association (no ties)



Dateless Species Association (no ties)



Filled Species Association (no ties)

