



USDA Forest Service
State and Private Forestry

NEGATIVE DATA ARE GOOD DATA

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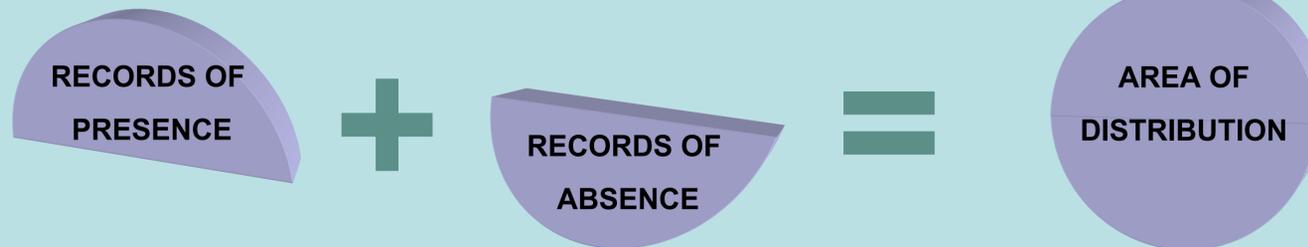
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Canada thistle (*Cirsium arvense*). I. Lapina

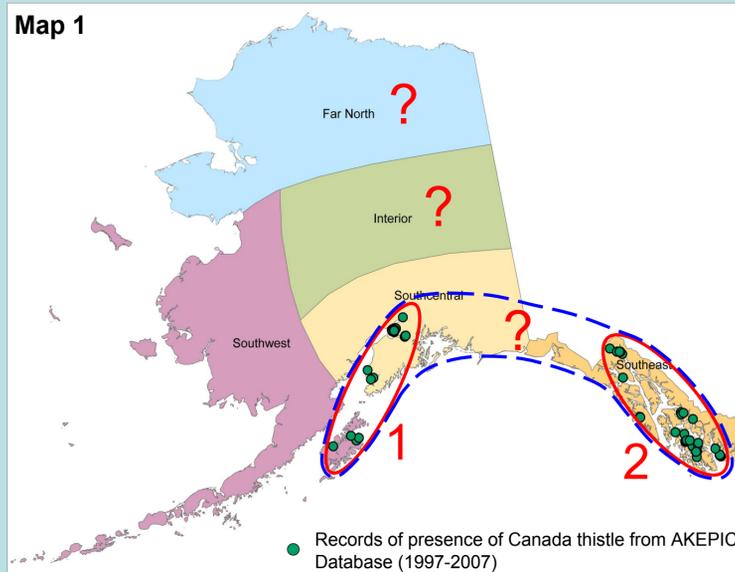
Past

The Alaska Exotic Plant Information Clearinghouse, 2002

196 non-native species

Large amount of records:
2002/03 – 2,600
2005 – 14,500
2007 – 57,673

What Does Map 1 Tell You?



- Canada thistle was found in Southcentral, Southeast, and Kodiak Island
- But you still don't know...
- Are 1 and 2 two disjunct parts of entire distribution area?
 - Does it occur in Interior and Far North?
 - What areas are free of Canada thistle?
 - Are there areas that need to be surveyed for Canada thistle?

Needs

- **Reliable distribution data for analysis, prediction, and management**
- Tool for large amount of data manipulation
- Data of absence of species from certain areas
- Spatial and temporal patterns of distribution
- Habitat prediction
- Analysis for spread vectors
- Areas that are not surveyed

Present

1,198,277 records of absence generated

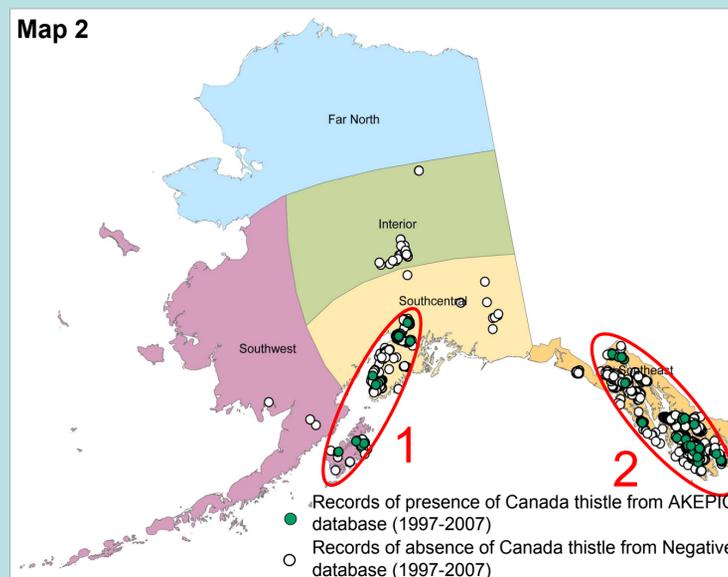
Methods:

- Export the AKEPIC records to Access database (February 2007)

- Identifying list of invasive plant species that each observer or team can potentially identify
- Generating negative record for each plant species that is not detected at a site by observer capable of identifying that species

- Excluded from calculations: Single Species Study, Incidental Observations, "not listed" species

Map 2 Tells You a Lot More!



- Canada thistle was found in Southcentral, Southeast, and Kodiak Island
- Area 1 and Area 2 are two disjunct areas of distribution
- Surveys in Interior Alaska did not find Canada thistle
- Far North has not been surveyed for Canada thistle

Now you can determine whether...

- Canada thistle is spreading
- Surveys should be done in places where no one has yet looked (like the Far North)
- If spread is associated with a vegetation community? landform? elevation? soil type?

Only the combination of presence and absence data gives us reliable data for weed management

Future of Database

- Need for quality control and error checking
- Transferring whole AKEPIC database into new format (*in progress*)
- Searchable online database (for use by Alaska scientists and by global weed community)
- Instant generation of negative records with each new positive record entered
- Interactive distribution map
- Occurrence data and negative data in one searchable Access database will allow users to be more efficient in habitat distribution modeling
- Improvement to the quality of data will make the data much easier to use

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Thanks to the talented database programmers Spencer Lawley and Ryan Rosston, HDR Alaska, Inc., for their creative approach in generating the database.