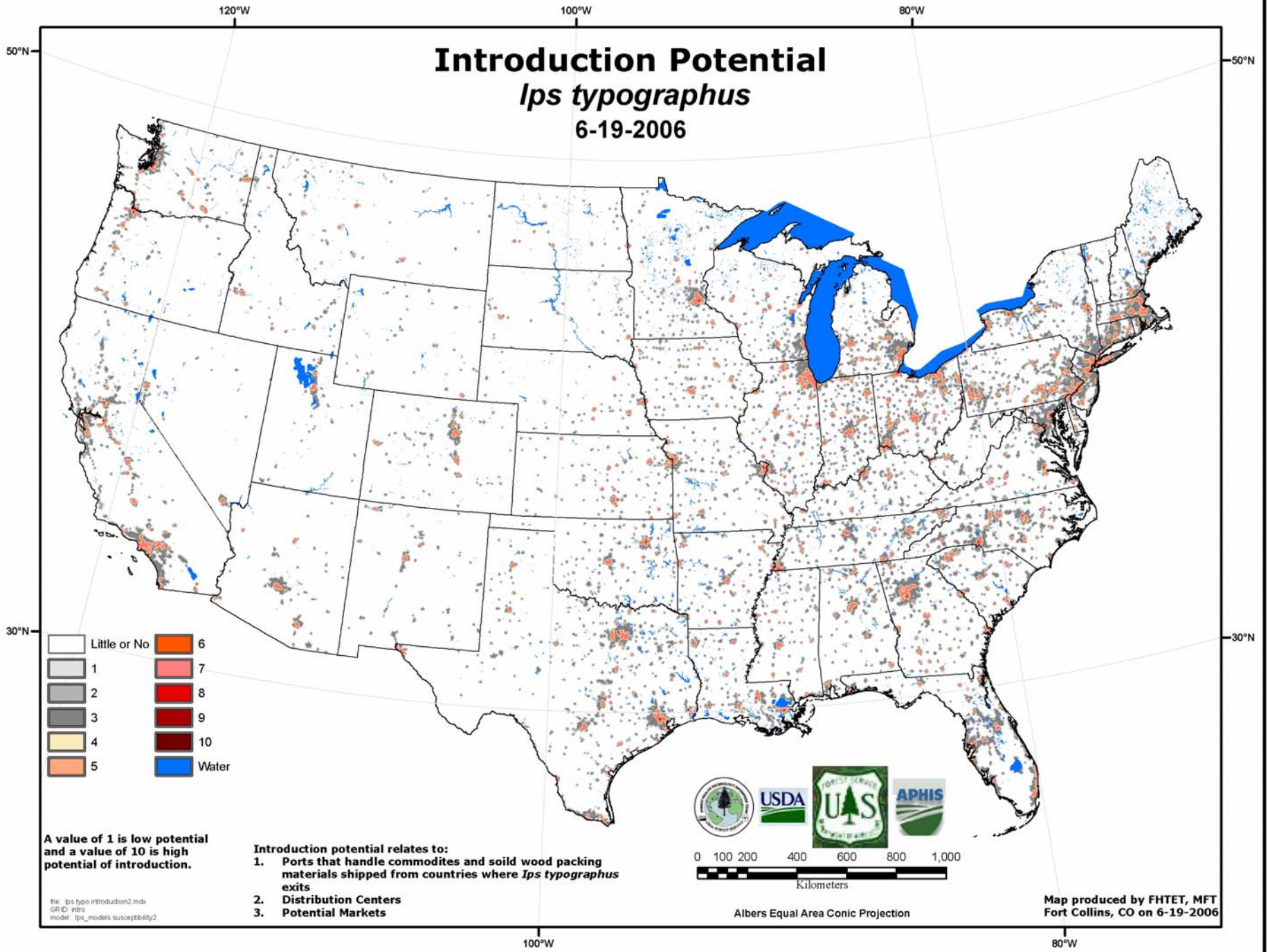


Introduction Potential

Ips typographus

6-19-2006



A value of 1 is low potential and a value of 10 is high potential of introduction.

file: ips_typo_introduction2.mxd
GRID: intro
model: ips_models_susceptibility2

- Introduction potential relates to:
1. Ports that handle commodities and solid wood packing materials shipped from countries where *Ips typographus* exists
 2. Distribution Centers
 3. Potential Markets

0 100 200 400 600 800 1,000
Kilometers

Albers Equal Area Conic Projection

Map produced by FHTET, MFT
Fort Collins, CO on 6-19-2006

**Summary of Introduction Potential for *Ips typographus* June20, 2006 Website URL:
<http://www.fs.fed.us/foresthealth/technology/products.shtml>**

The Introduction Potential Surface for *Ips typographus* was produced for the Conterminous United States (CUS) in 1 square kilometer (km²) units by the U.S. Forest Service, Forest Health Technology Enterprise Team's (FHTET) Invasive Species Steering Committee (Table 1). The product's intended use in conjunction with the Establishment potential is to develop a Susceptibility Potential Surface for *Ips typographus*. Supporting information was taken from Exotic Forest Pest (ExFor) website (<http://spfnc.fs.fed.us/exfor/>). Three datasets with standardized values from 0 to 10 were used as variables in the analysis. Each data set was multiplied by its arithmetic weight (Table 2), and the resultant values were combined in a weighted overlay. The output values also range from 0 to 10, with 10 having the highest introduction potential. Each of the variables was used to depict potential locations where *Ips typographus* could be released into the CUS. To delineate its potential flight range, a curvilinear distance decay value was assigned with a risk value of 10 at the source location and decreasing to 0 at 6 kilometers away (Table 3). The Value in Table 3 is calculated by the following formula (Potential (in Percent) * 10).

Principal Ports Source: Army Corps of Engineer, Waterborne Commerce, Foreign Cargo Statistics (1996 to 2003). A summary of imported tonnage of commodities that use Solid Wood Packing Material (SWPM), the packing material associated with Ips species interceptions, recorded in the APHIS Pest Interception Network (PIN) 309 data base. Only commodities exported from countries where *Ips typographus* is present were included. This point data was converted to 1 km² grid cells.

Markets Source: Federal Highway Administration, Freight Management and Operations, Freight Analysis Framework, Highway Truck Volume and Capacity Data and Environmental Systems Research Institute's (ESRI) City polygon Data. Flow/capacity data was used to determine the number of truck trips occurring within the city polygons. Cities polygons that had any truck trips were selected to define potential markets.

Distribution Centers Sources: National Transportation Atlas Database (2003). Distribution centers that handle commodities that likely use SWPM during transport were considered.

Table 1

Steering Committee

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 C. Wayne Berisford, U of G
 Daniel M. Borchert, APHIS PPQ
 Donald A. Duerr, USFS R8
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 Bill D. Smith, USFS SRS
 Borys M. Tkacz, USFS FHP

Table 2

Introduction Variables and Arithmetic Weights

Variables	Weight
Principal Ports	33.33%
Markets	33.33%
Distribution Centers	33.33%

Point of Contact

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Table 3

Distance decay for probable flight range of *Ips typographus*

Distance in Km	Potential %	Value
> 0 and <= 1	100	10
> 1 and <= 2	70	7
> 2 and <= 4	40	4
> 4 and <= 5	20	2
> 5 and <= 6	10	1
> 6	0	0

Contractor Support

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