NORTH AMERICAN PLANT PROTECTION ORGANIZATION

LYMANTRIID EXPERT GROUP

2016 Status Report

Expert Group Members

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Purpose

Develop a NAPPO Science and Technology paper on the risks associated with Lymantriids of potential concern to the NAPPO region, identifying potential species and pathways of concern.

Approach:

Assess species-specific risk with standard scoring criteria and report on highest ranked species.

Audience

Primary: Asian Gypsy Moth expert group

Why: Inform potential revision of the RSPM #33

Secondary: Risk assessors and surveillance groups

Why: Potential to assist in identification, risk targeting, and surveillance

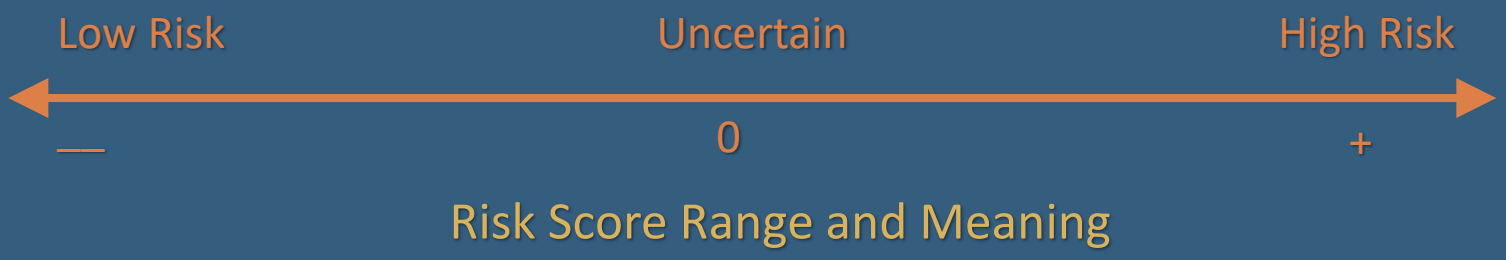
Risk Assessment Template

For each pest, minimum requirements for screening:

1) NAPPO region contains climatically suitable areas

2) NAPPO region contains host(s) of economic concern

Once mandatory requirements are met, rank the questions on biology and pathways risk and total the score.



Distribution Data

In order to assess climate suitability, we need to know where these species occur.

Sources:

Global Biodiversity Information Facility (specific)

Finnish IT center for Science, FUNET (general)

“Web Crawl” or looking for distribution data

Orgyia basinigra (Heylaerts, 1892)

Olene basinigra Heylaerts, 1892 *Ann. Soc. ent. Belg.* **36** (1): 11

Orgyia basinigra, Moths of Borneo [MOB]

Orgyia basinigra ; [MOB5: 29, f. 56, pl. 3]; [NHM card]

Larva on *Parashorea*, *A*

Extracted Data

SPECIES	DISTRIBUTION
Orgyia (Olene) basinigra:	
Orgyia convergens:	Peitaiho, Yunnan
Orgyia definita:	Boston, Massachusetts
Orgyia athlophora:	Perth, W.Australia
Orgyia oslari:	Poncha Sprs., Colorado
Orgya rupestris:	Corsica

Orgyia convergens Collenett

Orgyia convergens Coll

Orgyia convergens ; [NHM

taiho, Yunnan

Orgyia definita Packard, [1865]

Orgyia definita Packard, [1865] *Proc. ent. Soc. Philad.* **3** : 332, **TL**: Boston, Massachusetts

Orgyia definita, Moth Photographers Group [MPG]

Orgyia definita, Butterflies and Moths of North America [BAMONA]

Orgyia definita ; Riotte, 1972, *Ent. Zeits.* **82** (4): (17-27); [MNA22.2: 77, f. 18g-h, pl. 8, f. 1-9]; [NHM card]

Larva on *Salix*, *Quercus*, *Tilia*, *Ulmus*, *Betula*, *Acer rubrum*, *Hamamelis virginiana* [NMA22.2]

Climate Matching

Sample Results of Climate Matching Analysis:

World map of Köppen-Geiger climate classification

Species: Acyphas chionitis

Potential Climate Match: Canada: 1.45%, Mexico: 39.88%, United States: 45.08%
Climate Types Affected: Mediterranean (Csa), Marine West Coast (Cfb), Tropical rainforest (Am), Mediterranean (Csb), Steppe (BSh), Steppe (BSk), Humid Subtropical (Cfa)

Species: Acyphas fulviceps

Potential Climate Match: Canada: 0.62%, Mexico: 0.72%, United States: 0.63%
Climate Types Affected: Marine West Coast (Cfb)

Species: Acyphas leptotypa

Potential Climate Match: Canada: 0%, Mexico: 44.08%, United States: 2.04%
Climate Types Affected: Desert (BWh), Tropical rainforest (Am), Tropical Savanna (Aw)

Species: Acyphas leucomelas

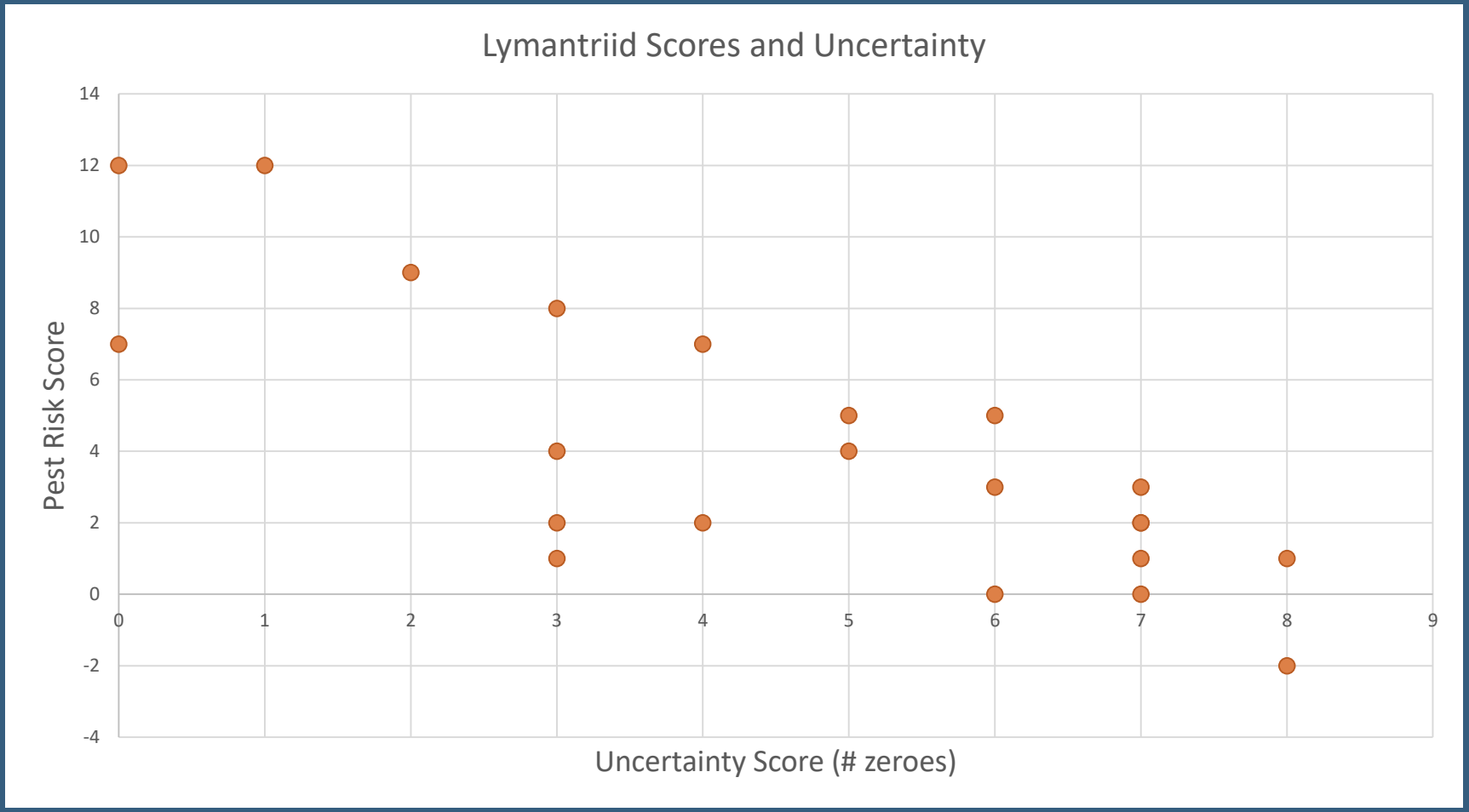
Potential Climate Match: Canada: 0.62%, Mexico: 2.81%, United States: 21.99%
Climate Types Affected: Marine West Coast (Cfb), Humid Subtropical (Cfa)

nes. Source:

2016 Accomplishments

- Centralized EG documents using Google Docs
- Developed code to “web crawl”/search online museum records for species distribution data and create a local database for analysis.
- Automated analysis of climate matching between native ranges and the NAPPO region, creating a species-specific reference appendix of climatically suitable areas in the NAPPO region.
- Identified standard references for lymantriid hosts
- Completed 23 pest analyses
- Analyzed how uncertainty creates bias in scoring pests

Data Availability Biases Risk Scores



Next Steps

- Continue processing risk assessments
- Update climate analyses with newest distribution data from the web crawl
- Reduce bias by conducting outreach to researchers to fill in data gaps