



Partnerships in Eastern Forest Tree Improvement Breeding

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Tree Species in Peril: Selected Species & Threats

GREEN ASH

Fraxinus pennsylvanica



Emerald ash borer (EAB)

WHITE ASH

Fraxinus americana



Emerald ash borer (EAB)

BLACK ASH

Fraxinus nigra



Emerald ash borer (EAB)

AMERICAN BEECH

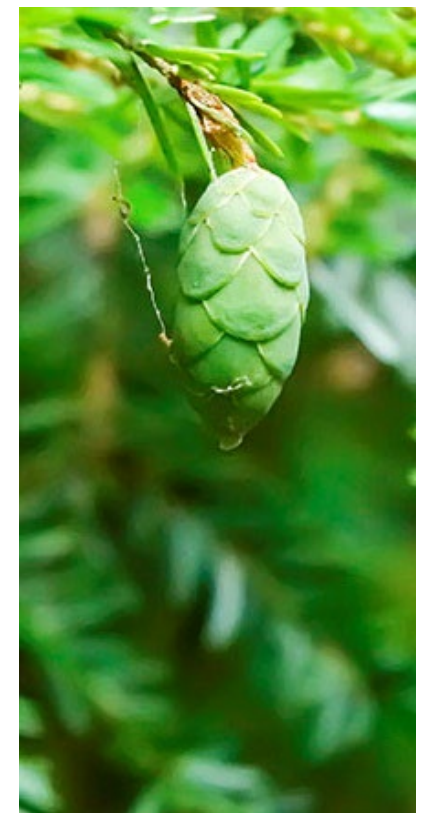
Fagus grandifolia



Beech bark disease (BBD)
Beech leaf disease (BLD)

EASTERN HEMLOCK

Tsuga canadensis



Hemlock woolly adelgid (HWA)
Elongate hemlock scale (EHS)

THE NUMBERS

5

Threatened species

12

Partner organizations

7

States

10+

Scientists working as
part of the project
team



Tree Species in Peril: Eastern Hemlock

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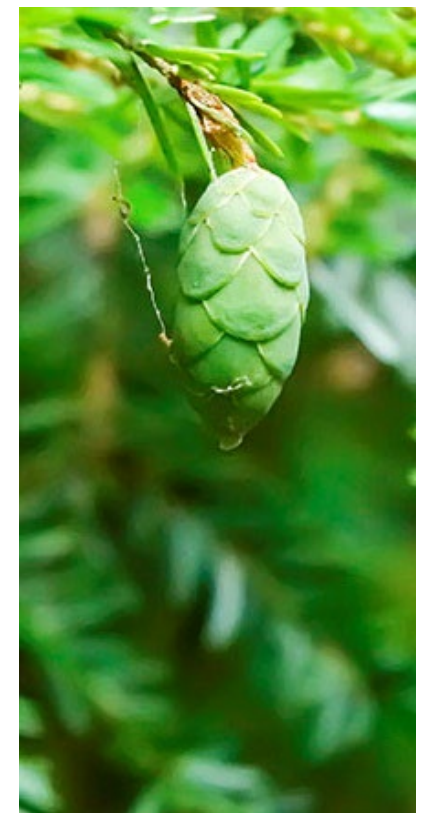
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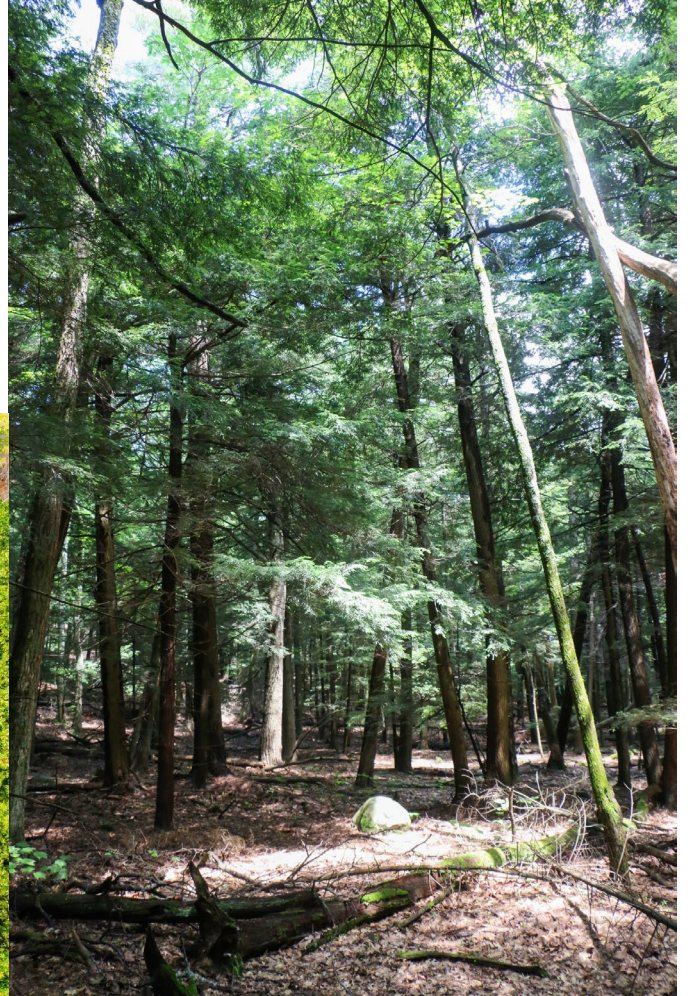
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Elongate hemlock scale (EHS)

Tree Species in Peril: Lingerin Hemlock Project

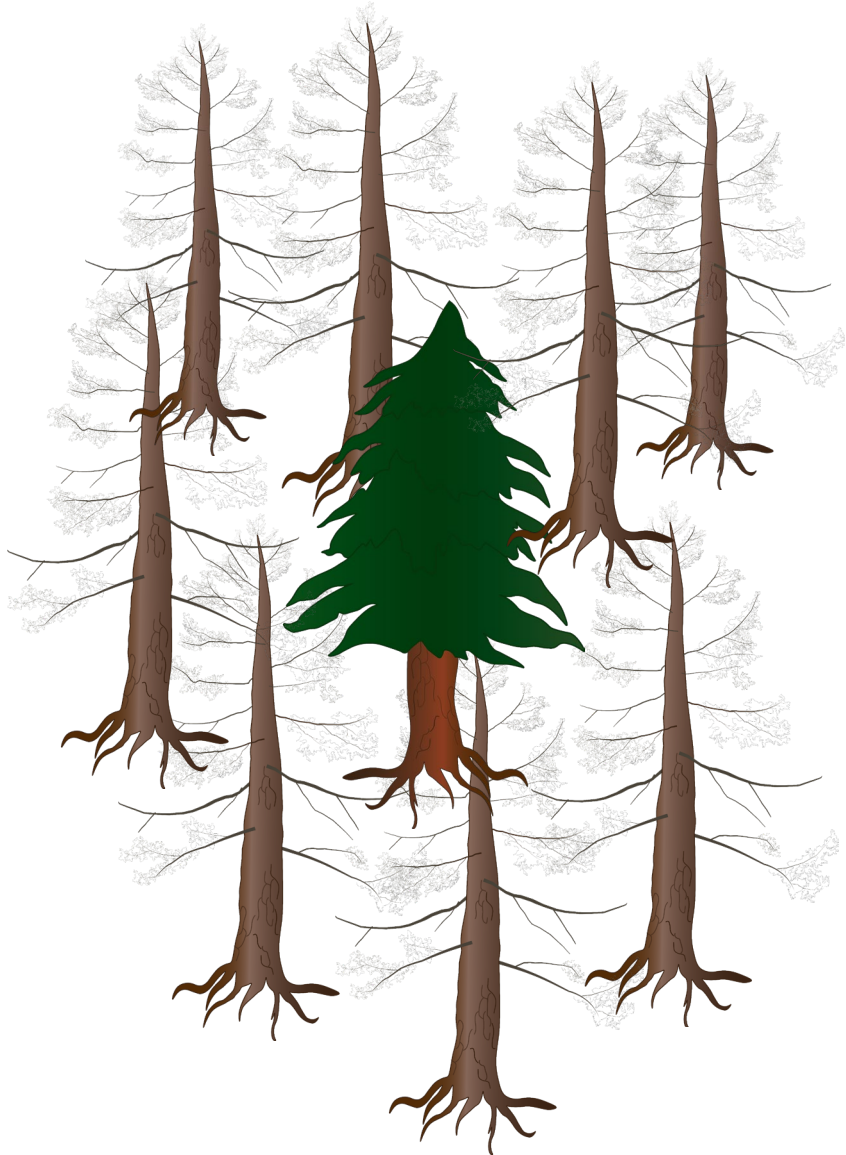


Why Hemlocks?

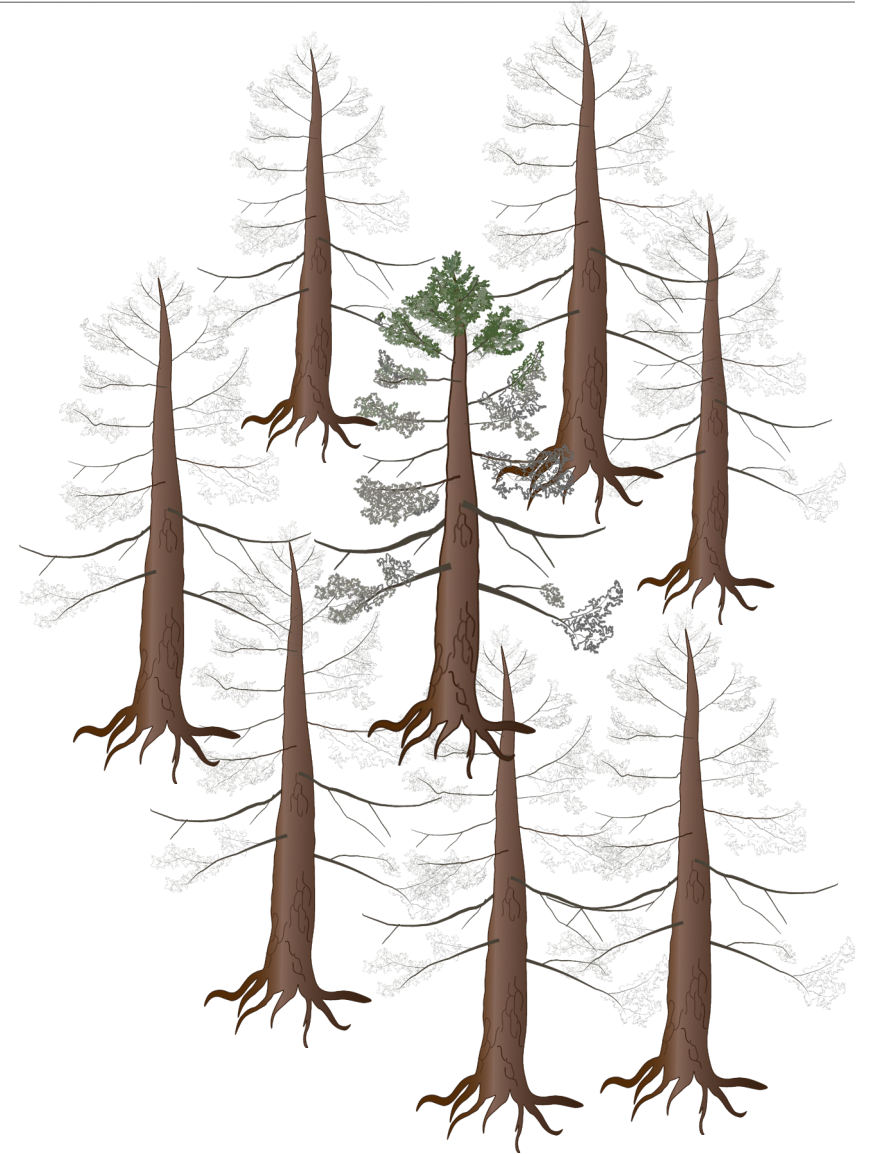
- Foundation species
- Hemlock wooly adelgid
- Elongate hemlock scale



Tree Species in Peril: Lingerin Hemlock Project



**BOTH
ARE
LINGERING**



Tree Species in Peril: Lingerin Hemlock Project Goals

1.
Determine
qualifications
for a 'Lingerin
Hemlock'

2.
Develop an
app to
record
locations

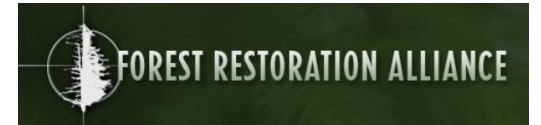
3.
Start the
search!

4.
Sort
through
submissions

5.
Collect
samples from
recorded
hemlocks

6.
Test
samples

Tree Species in Peril: Lingerin Hemlock Working Group



Tree Species in Peril: Lingerin Hemlock Protocol

LINGERING HEMLOCK: A hemlock tree that persists when the vast majority of surrounding trees have died or are dying due to pest pressure.

A lingerin hemlock is/has:

- ❖ At least 4" (10cm) DBH
- ❖ Growing in a forest
- ❖ Where > 80% of surrounding hemlocks are dead and/or are dying
- ❖ Not been treated with pesticides in the last 10 years
- ❖ Compared to surrounding hemlocks
 - Deep green needles
 - Thick, full branches
 - Less sky visible when looking up through tree canopy



Tree Species in Peril: Lingerin Hemlock Project Goals

1. Determine qualifications for a 'Lingerin Hemlock'

2. Develop an app to record locations

3. Start the search!

4. Sort through submissions

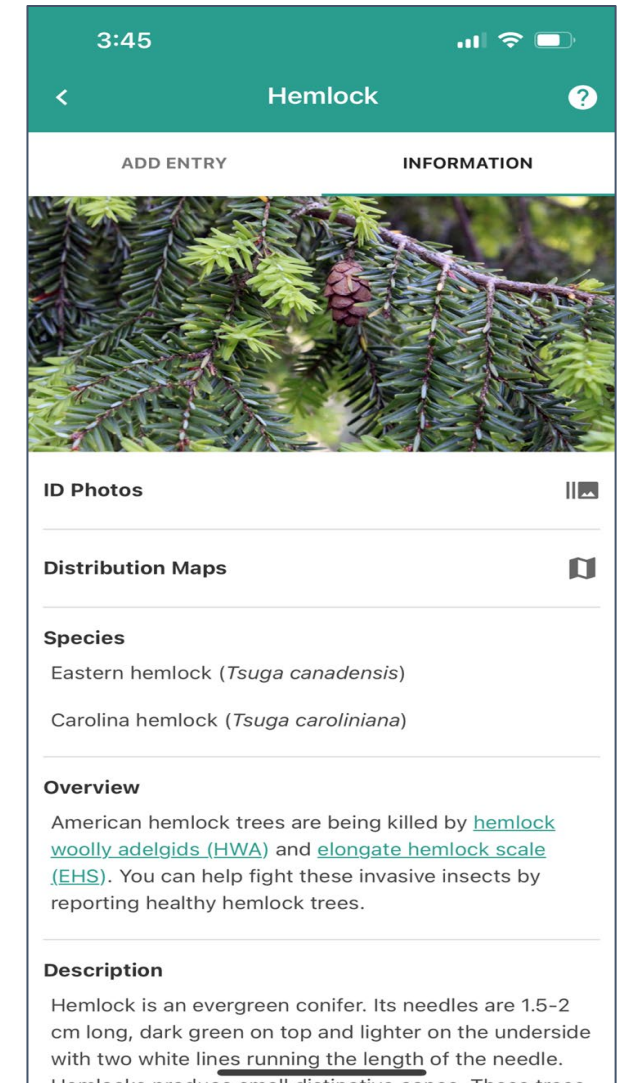
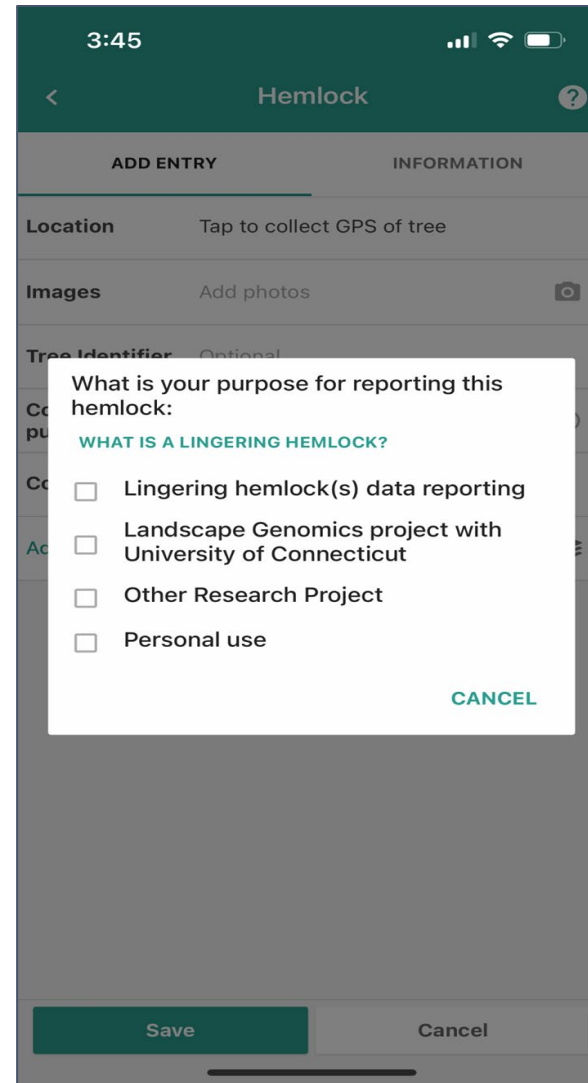
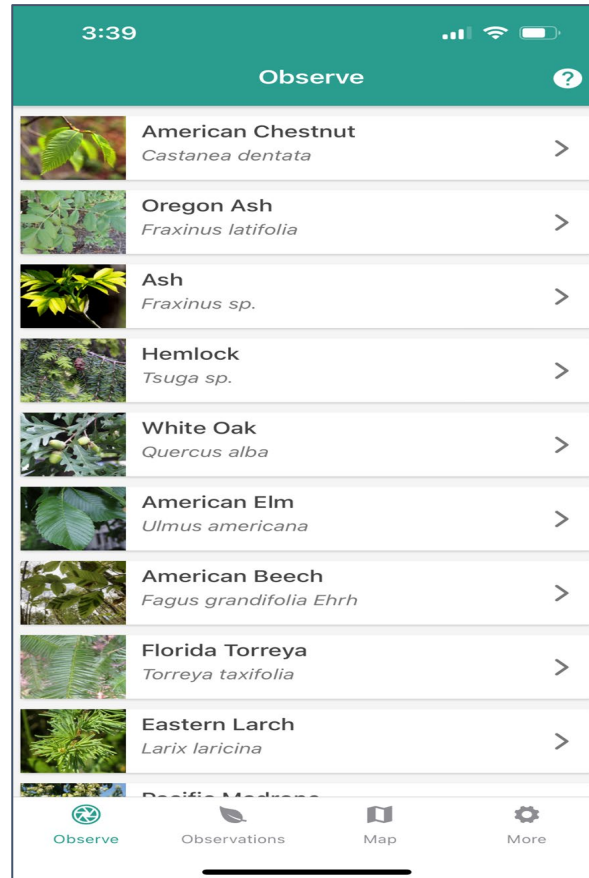
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6. Test samples

Tree Species in Peril: Enter TreeSnap



TreeSnap



Tree Species in Peril: Lingerin Hemlock Project Goals

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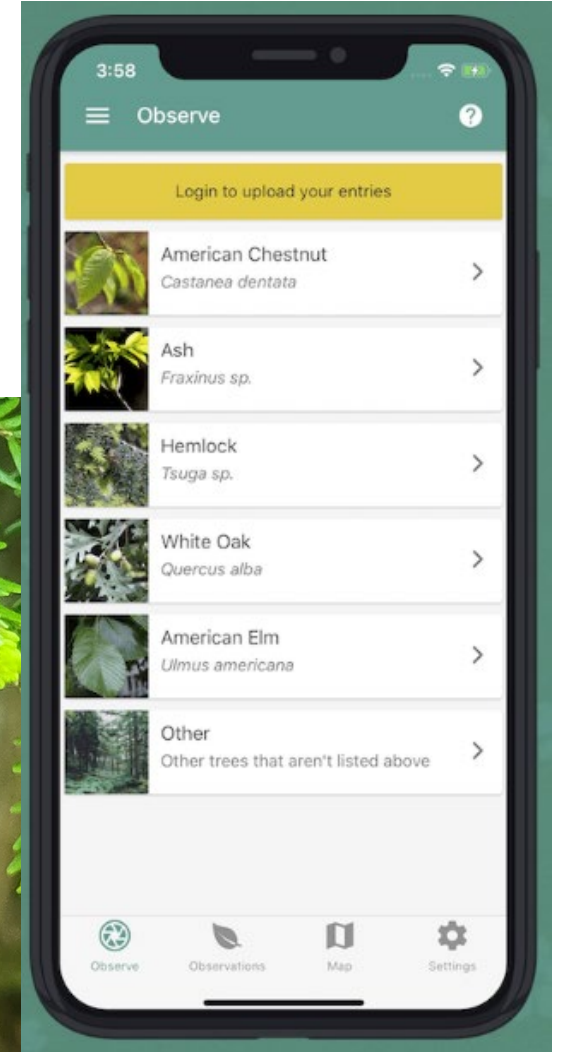
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Tree Species in Peril: Lingering Hemlock Project Outreach



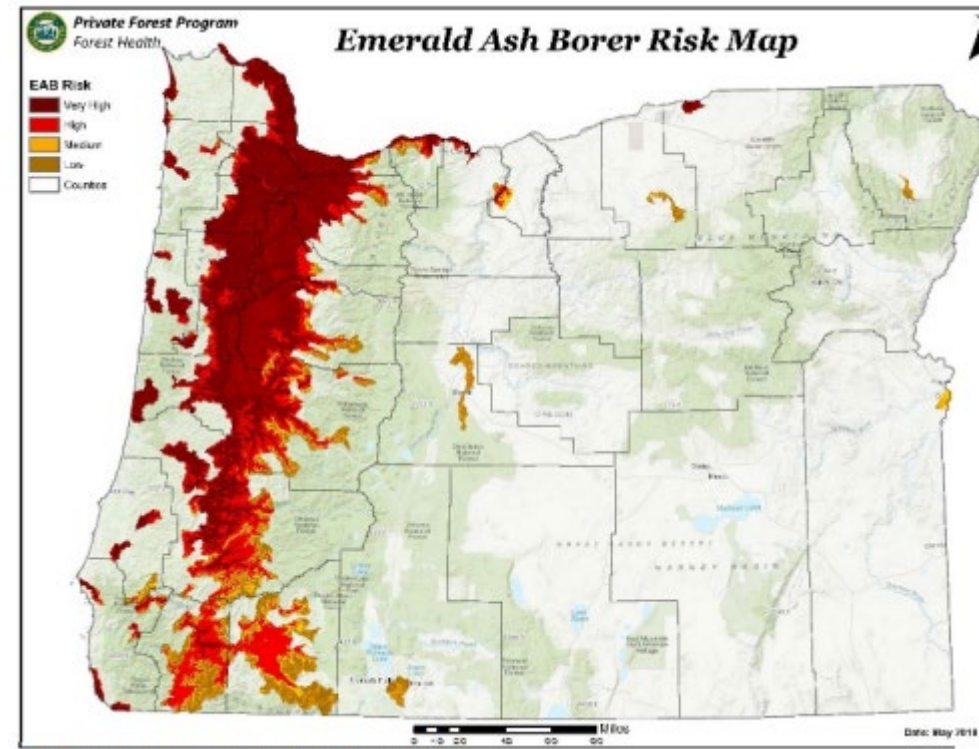
Tree Species in Peril: Our Outstanding Partners



Oregon Ash Progeny Testing Steering Committee

Resistant Ash Breeding Plan in Oregon:

- Collecting seedlots and creating a base breeding population
- Propagating trees for outplanting
- Establishing a series of progeny test plantations
- Evaluating genetic resistance to EAB and developing deployment zones



EAB risk map for Oregon. M. Lathrop.

Emerald Ash Borer
Agrilus planipennis Fairmaire

