

# 2016 Forest Insect Impacts in Southcentral Alaska

2017

Alaska Entomological Society  
Meeting

*Jason Moan*

*Alaska Division of Forestry*

*February 4, 2017*  
*Fairbanks, Alaska*





# 🌲 Spruce beetle



Photos: J. Moan, AKDOF





- ❖ Spruce beetle
- ❖ *Orthosia hibisci*



***Orthosia hibisci* larva (L); alder and willow defoliation (R)**

Photos: J. Moan, AKDOF







Spruce beetle



*Orthosia hibisci*



Spruce aphid



**Spruce aphid and aphid-caused damage**

Photo: (L) USFS R10 FHP, (R) J. Moan, AKDOF





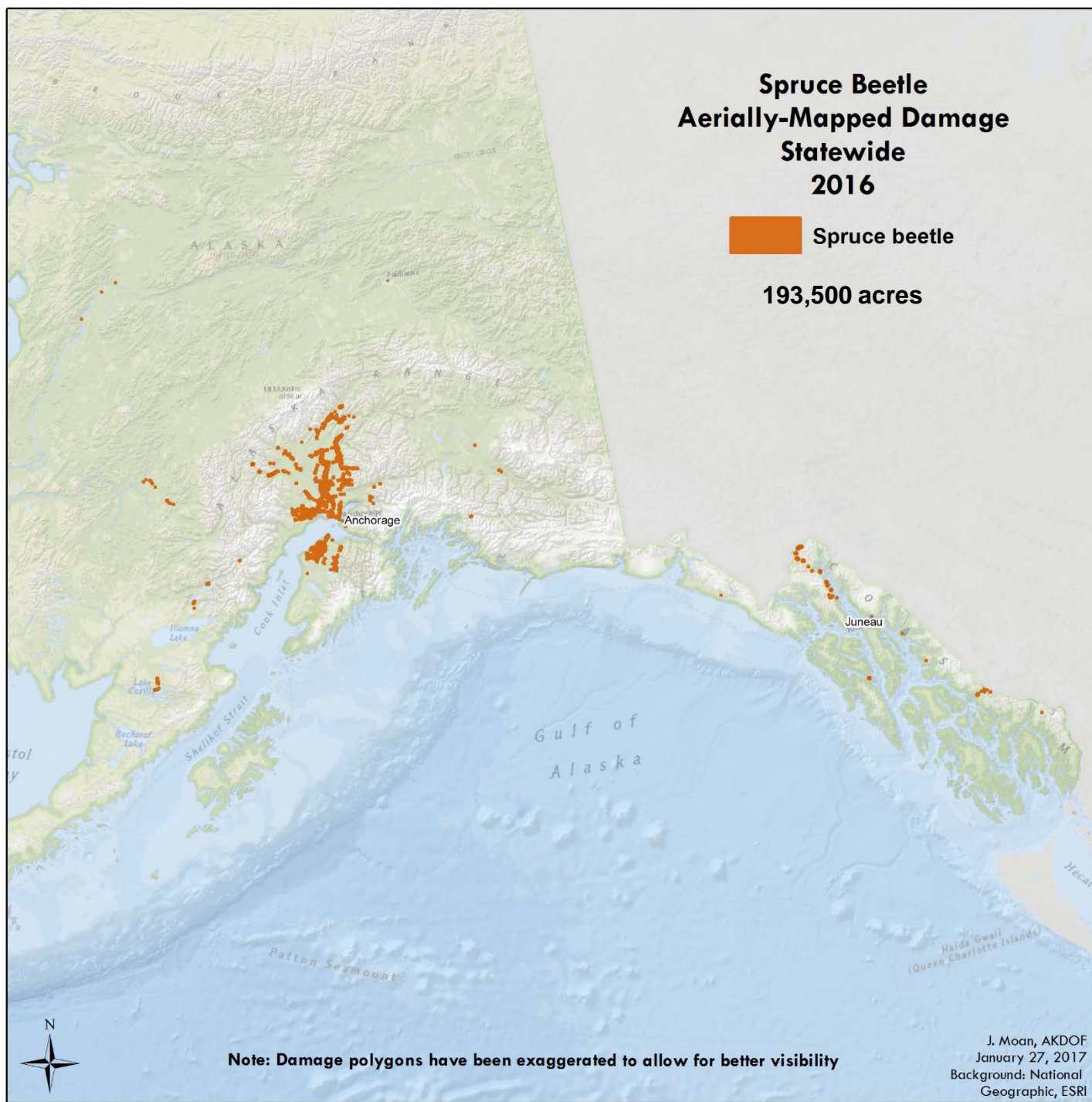
# 2016 – Spruce beetle



Background photo: J. Moan, AKDOF

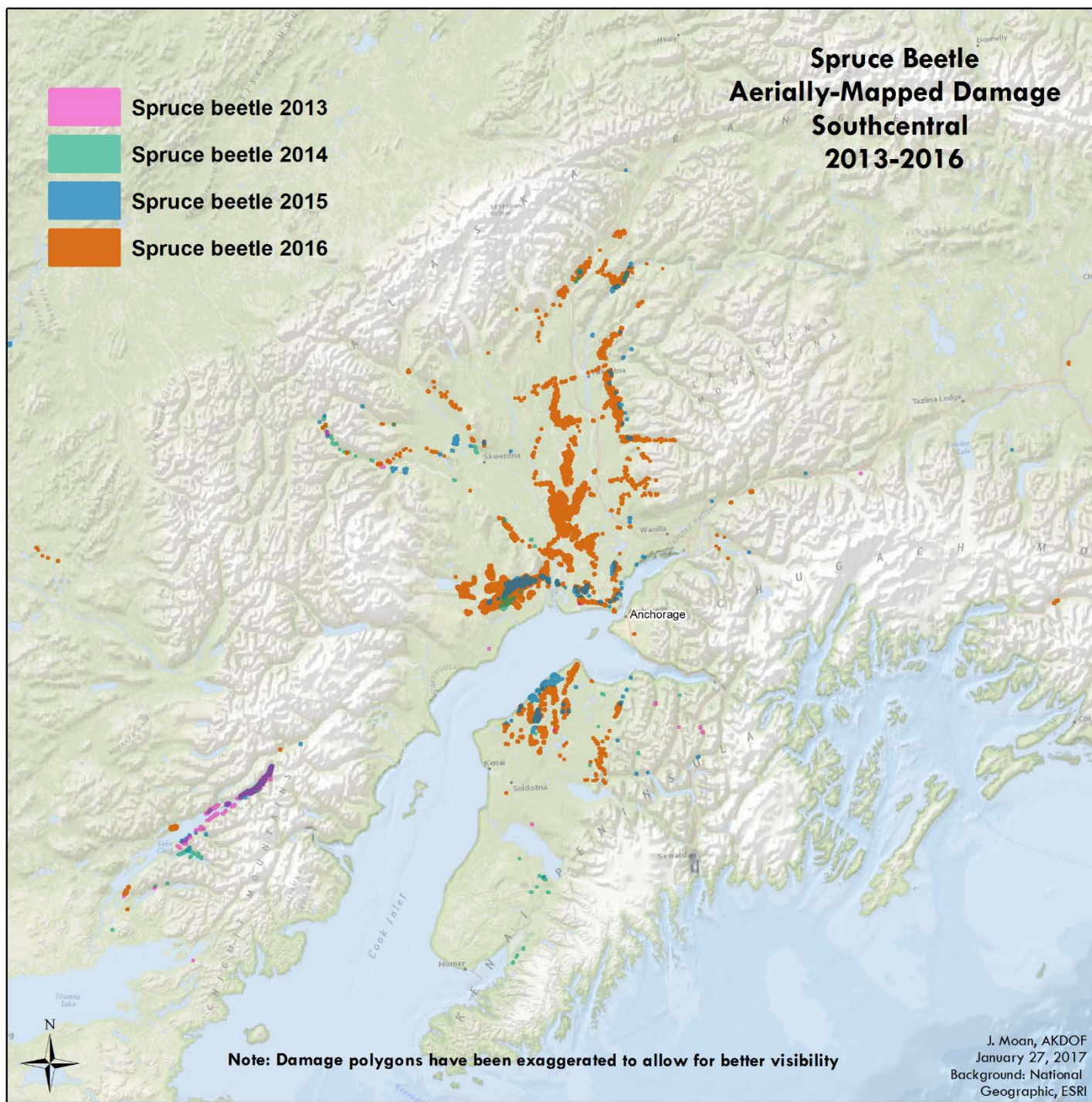


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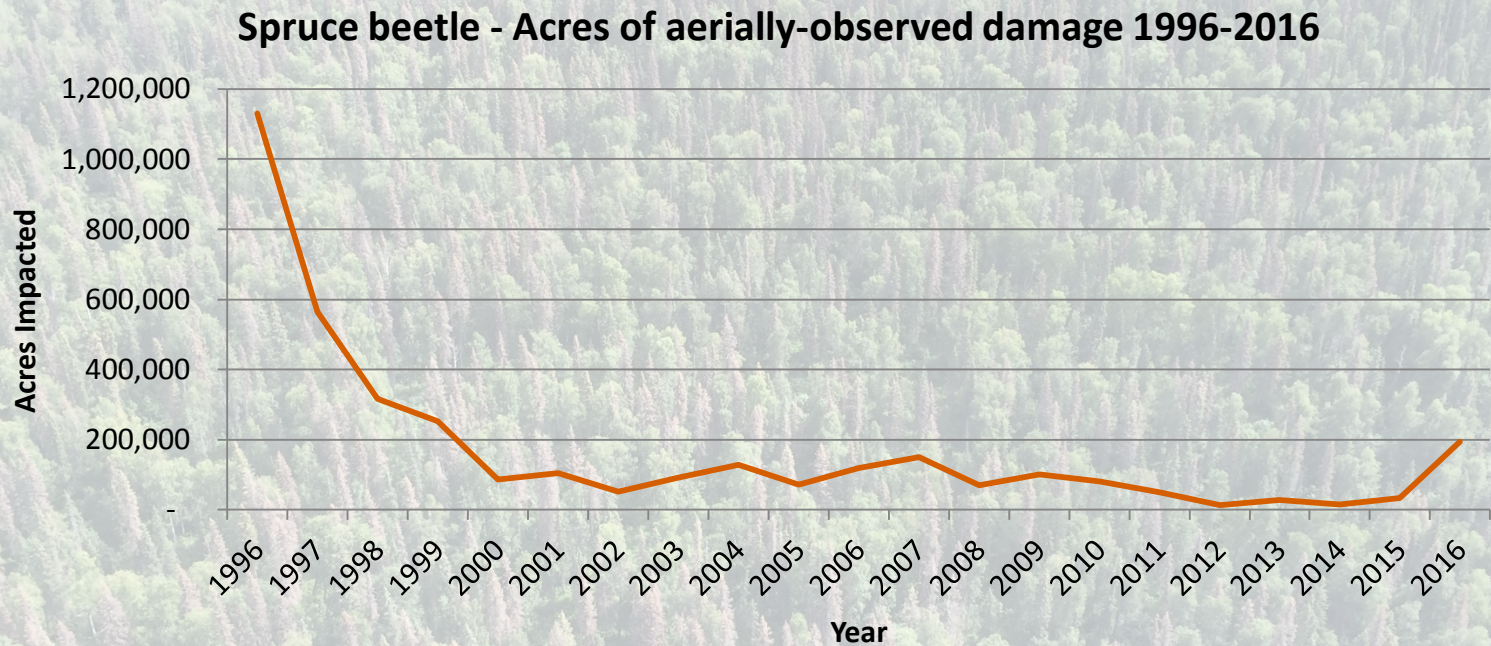


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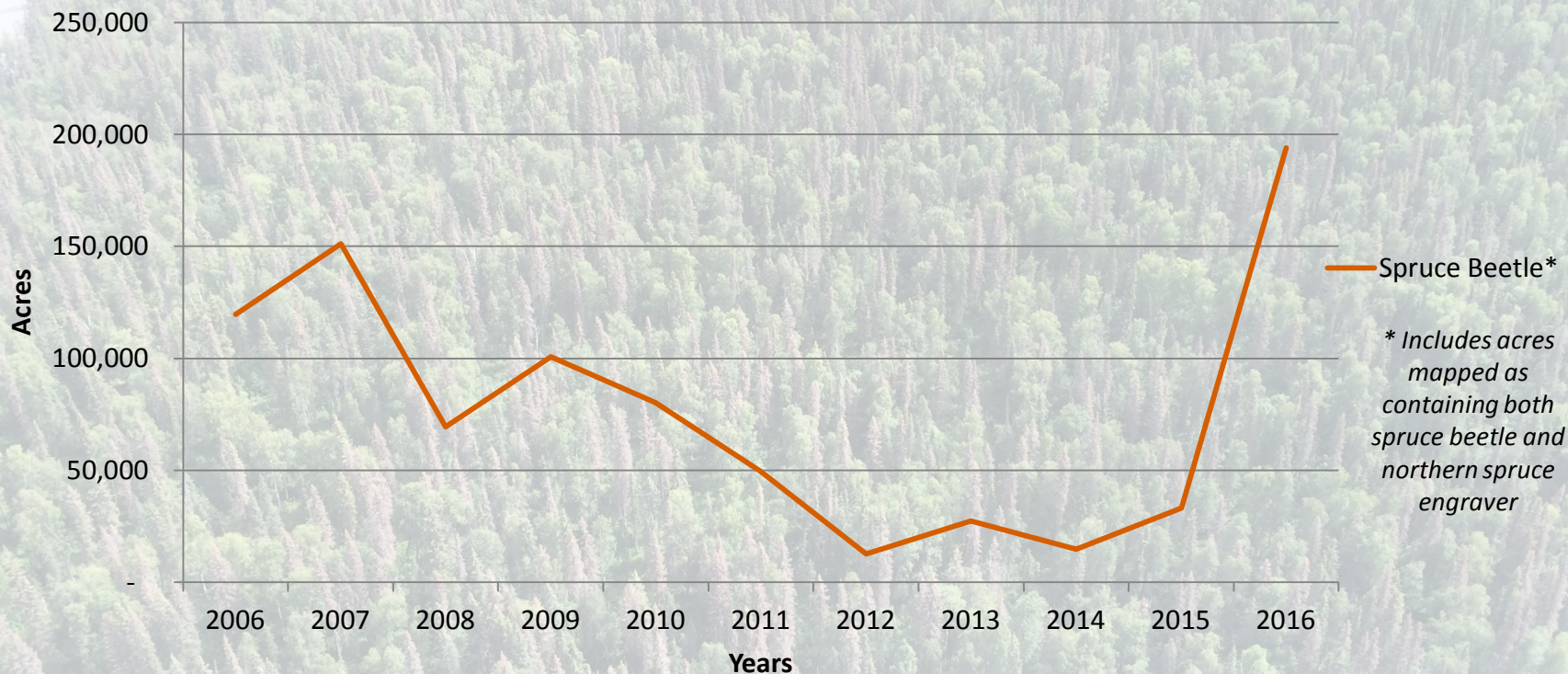
Background photo: J. Moan, AKDOF





# 2016 – Spruce beetle

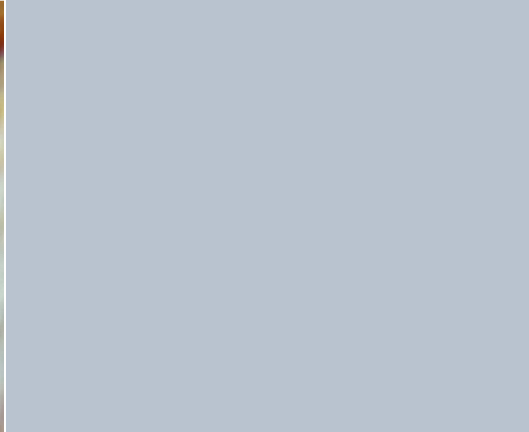
**Spruce beetle – Acres of aerially-observed damage 2006-2016**



Background photo: J. Moan, AKDOF







Inset photo: Ray Nix, Matanuska - Susitna Borough  
Other photos: J. Moan, AKDOF





# 2016 – Generalist hardwood defoliation



Background photo: J. Moan, AKDOF





## 2016 – Generalist hardwood defoliation

- Generalist defoliation initially observed in 2014
  - Upper Yentna River valley
  - Lake Clark National Park
  - Wood-Tikchik State Park
  - Holy Cross area





# 2016 – Generalist hardwood defoliation

## Timeline

- Generalist defoliation initially observed in 2014
  - Initially presumed to be *Sunira verberata*-caused damage
  - Alder, willow, birch, cottonwood affected





# 2016 – Generalist hardwood defoliation

## Timeline

### *Aerial Survey*

- 2014 - Defoliation event initially observed (~35,000 acres)
- 2015 - Area affected expands (~183,000 acres)
- 2016 - Area affected decreasing (~138,000 acres)





# 2016 – Generalist hardwood defoliation: *Orthosia hibisci*

## Timeline

### *Ground efforts*

- 2015 & 2016 – Cooperator reports from:
  - Telaquana Lake
  - Lake Clark
  - Near Holy Cross
  - Near Anvik



Photo: J. Moan, AKDOF





# 2016 – Generalist hardwood defoliation: *Orthosia hibisci*

## Timeline

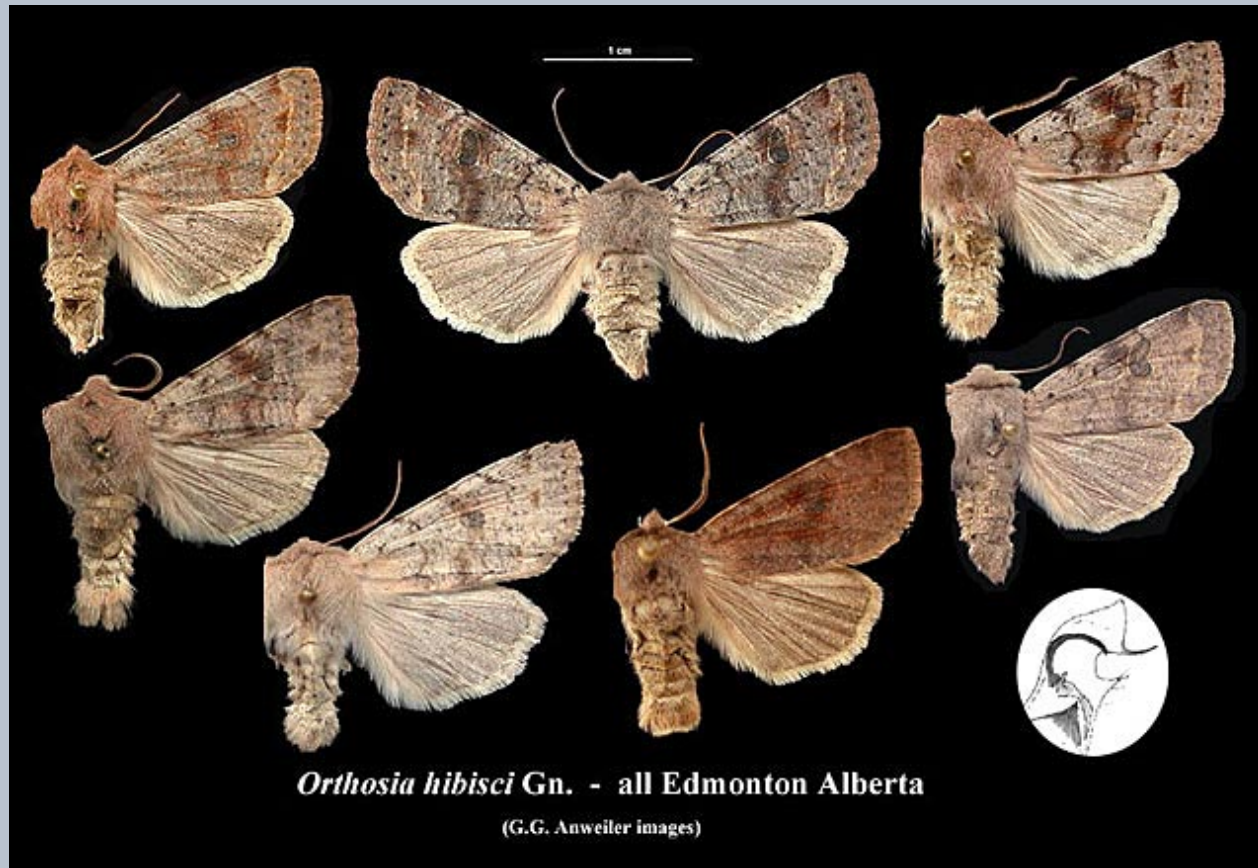
### *Ground efforts*

- 2016 continued –
  - **April:** Moth emergence in Bethel – Confirmed as *Orthosia hibisci*
  - **June:** Field collections at Telaquana and Chakachamna lakes – confirmed as *Orthosia hibisci*
  - **November:** Moth specimens (collected in spring) – confirmed as *Orthosia hibisci*





## 2016 – Generalist hardwood defoliation: *Orthosia hibisci*



University of Alberta E. H. Strickland Entomological Museum  
[http://entomology.museums.ualberta.ca/searching\\_species\\_details.php?s=5999](http://entomology.museums.ualberta.ca/searching_species_details.php?s=5999)





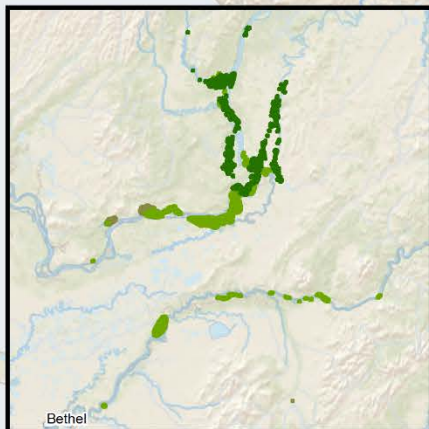
## 2016 – Generalist hardwood defoliation: *Orthosia hibisci*



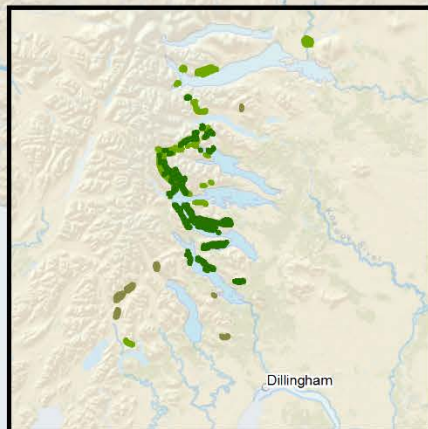
Background photo: J. Moan, AKDOF



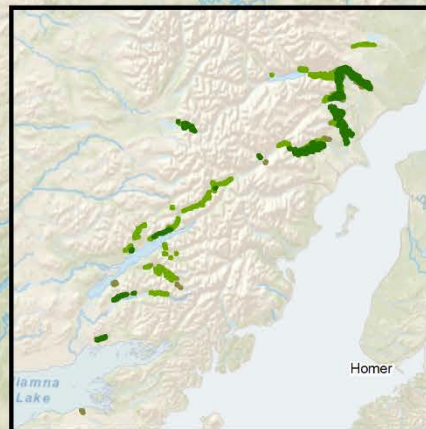




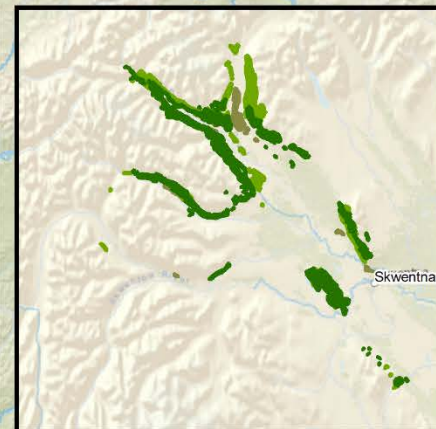
Holy Cross Area



Wood-Tikchik Area

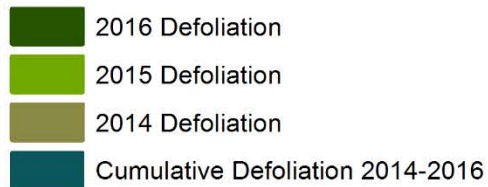


Lake Clark National Park Area



Upper Yentna Area

### Confirmed\* and Suspected *Orthosia hibisci*-caused defoliation



\* Confirmed in parts of Lake Clark National Park and adjacent areas

Note: Damage polygons have been exaggerated to allow for better visibility





## 2016 – Spruce aphid *Elatobium abietinum*

**Spruce aphids – Homer**  
Photo: J. Moan, AKDOF





## 2016 – Spruce aphid *Elatobium abietinum*

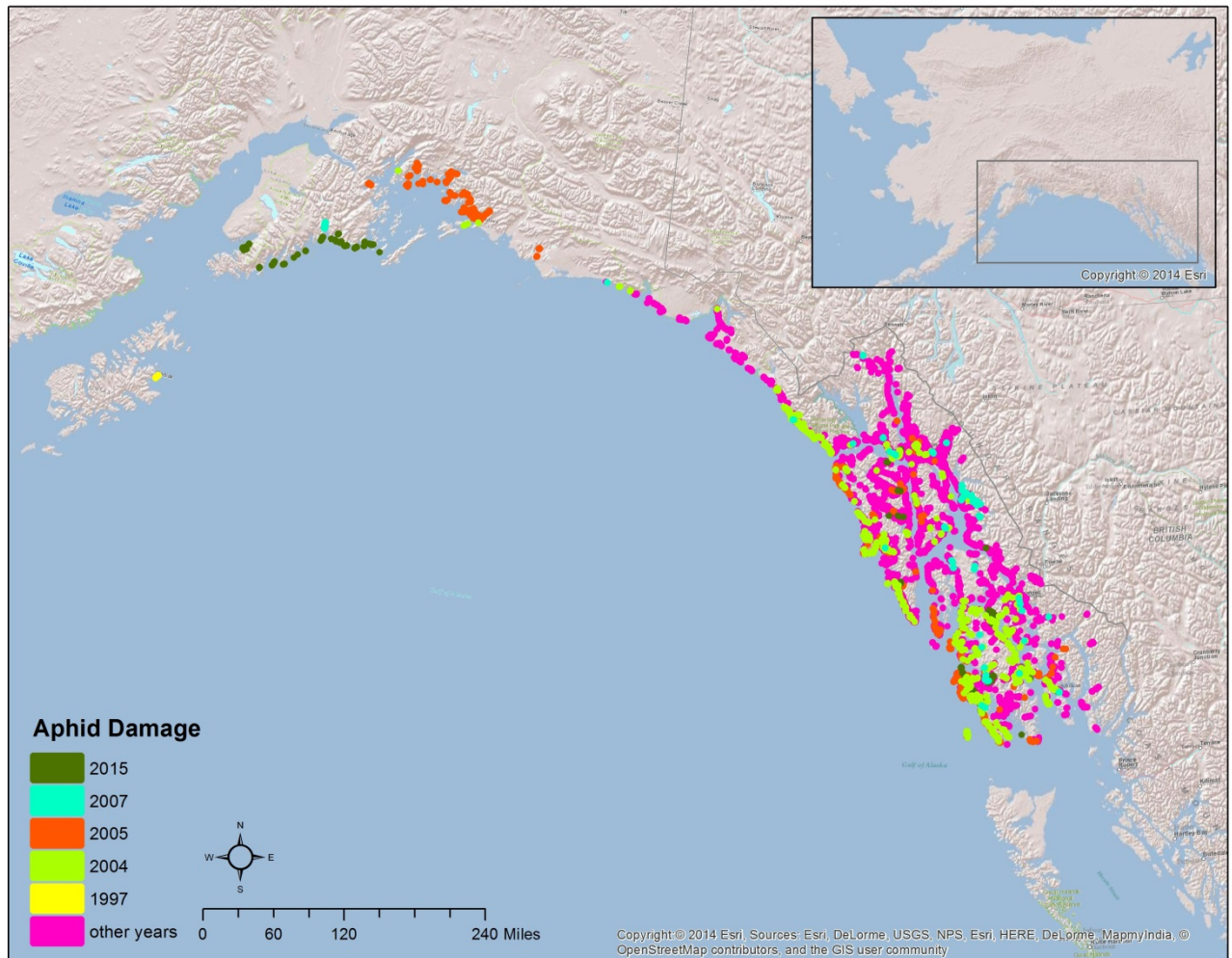
- Native of Europe
- Pest of coastal spruces, primarily Sitka spruce
- Long established in Southeast Alaska
- First report on western Kenai in 2015



Spruce aphid nymphs  
USFS R10 FHP





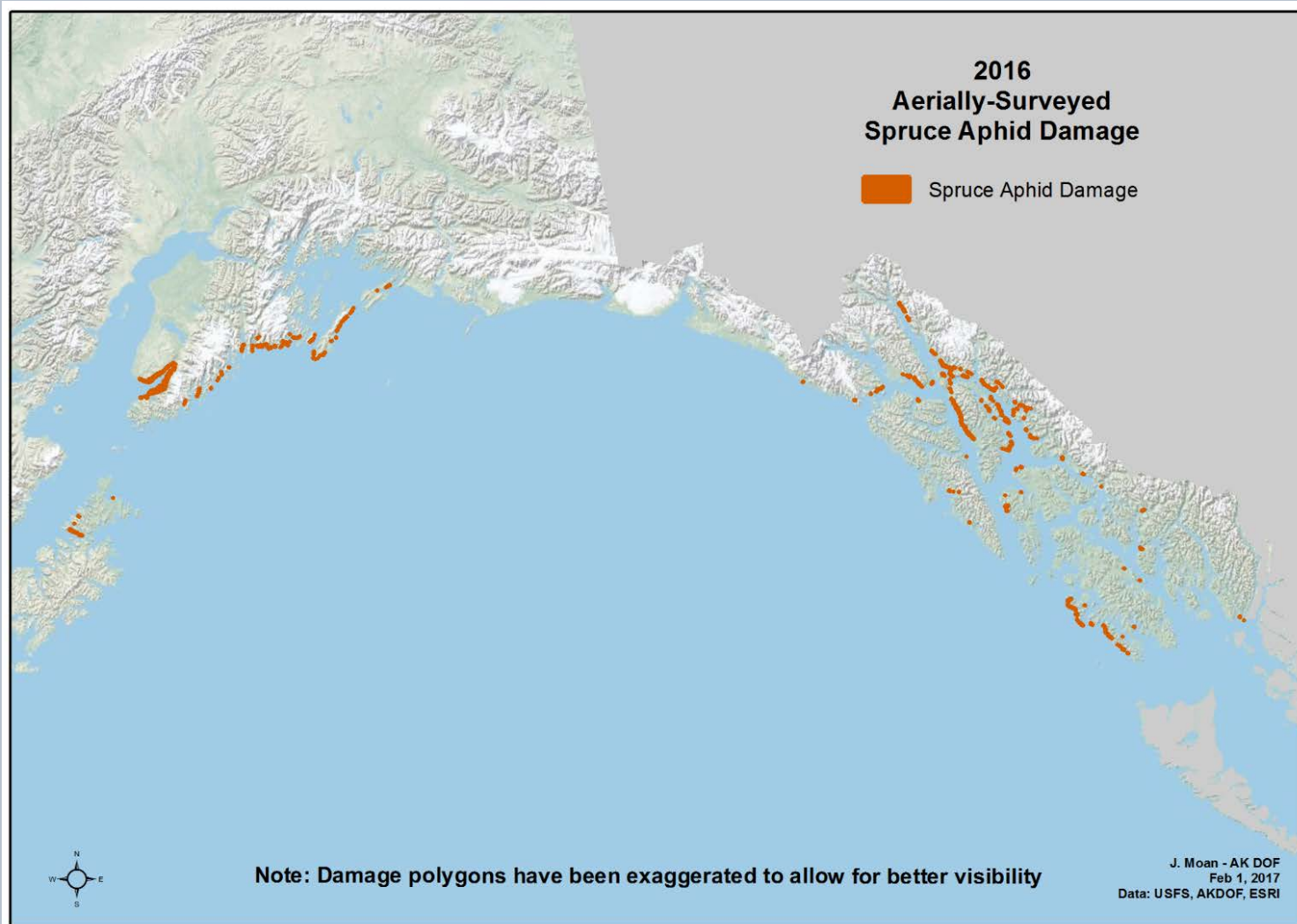


**Spruce aphid mapped during annual aerial forest health surveys**

Map by M. Lamb, USFS R10 FHP









## Southcentral Alaska Timeline

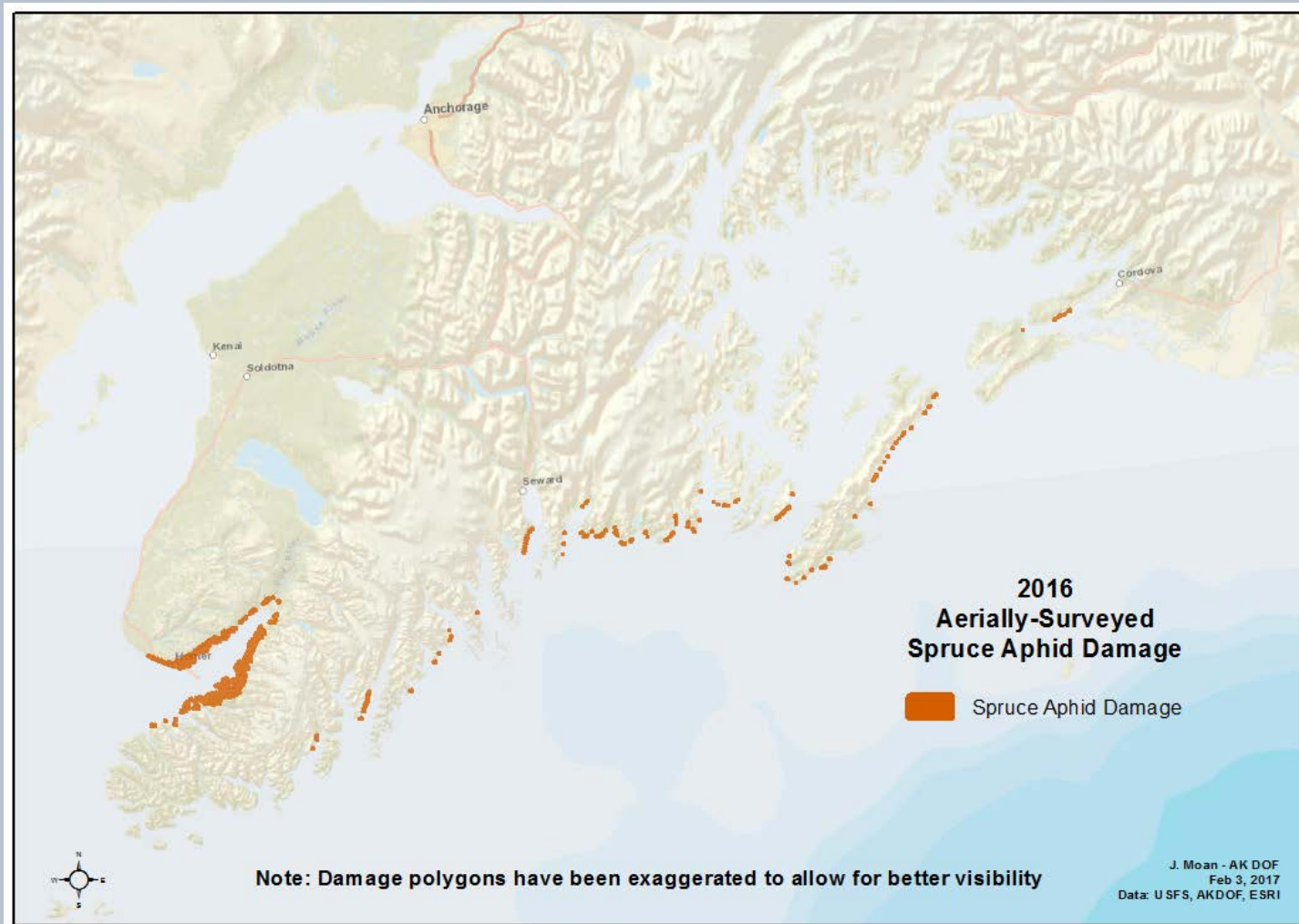
### *Aerial Survey*

- Prior to 2015 – Observed periodically in areas of Prince William Sound
- 2015 – Defoliation on south side of Kachemak Bay initially observed (1,200 acres)
- 2016 – Aphid damage observed surrounding Kachemak Bay (17,500 acres)





# 2016 – Spruce aphid *Elatobium abietinum*





## Southcentral Alaska Timeline

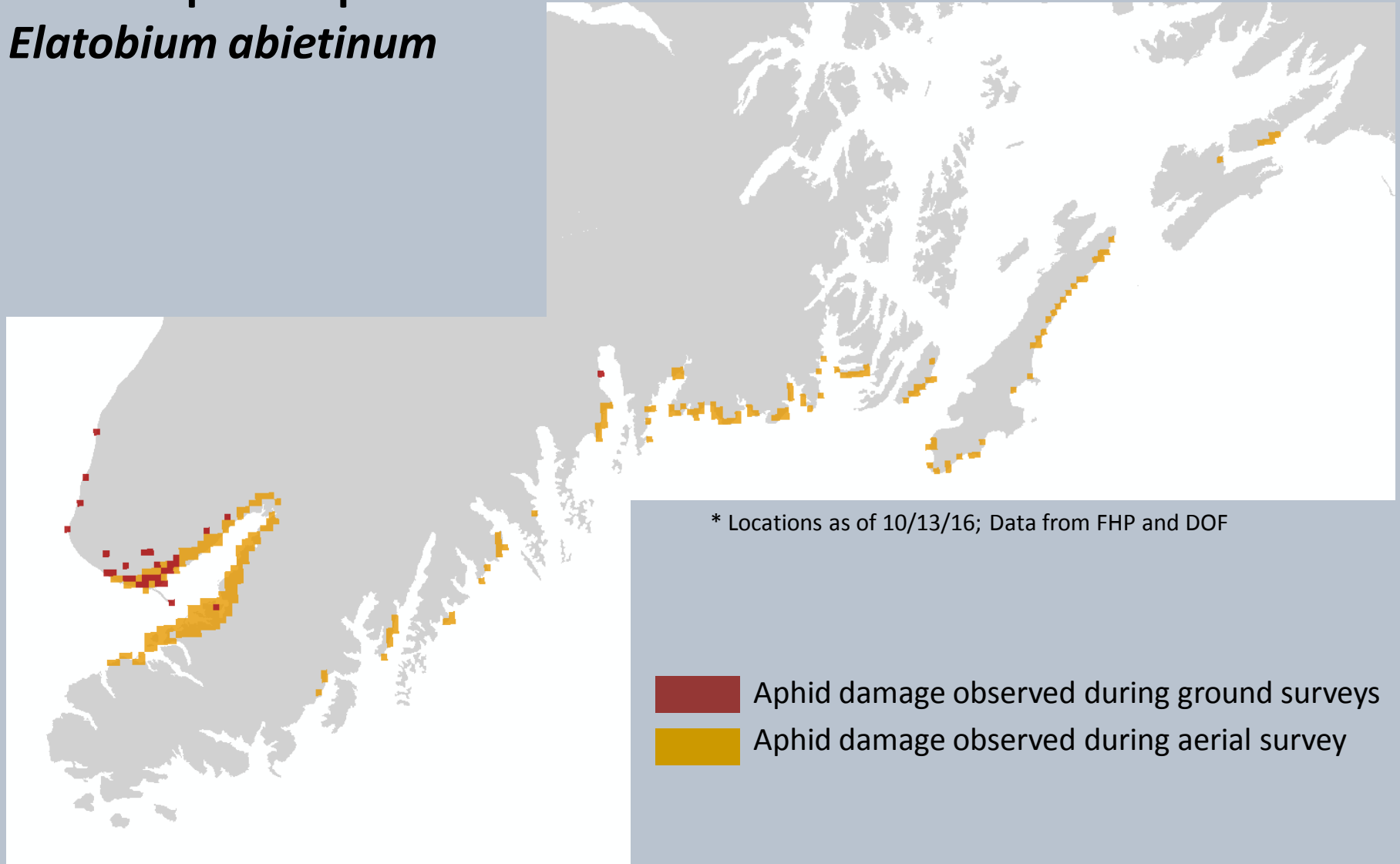
### *Ground Efforts*

- 2015 – Initial field visits to Homer to confirm aphid presence and identification
  - DNA confirmation - *Elatobium abietinum*
- 2016 – Spruce aphid range investigation





# 2016 – Spruce aphid *Elatobium abietinum*





Halibut Cove – Spruce aphid damage 2015

Photo: J. Moan, AKDOF

2016 – Spruce aphid  
*Elatobium abietinum*

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Questions?

