Gypsy Moth Slow the Spread Program Update

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2013 National Plant Board Meeting
Louisville, KY

Gypsy Moth Programs
- Suppression – Forest Service
- Eradication – Forest Service/APHIS
- Survey - APHIS
- Regulatory – APHIS (STS)
- Slow The Spread – Forest Service (STS)

STS Programs
- Operational
  - Survey
  - Treatments
- Regulatory
  - Outreach
  - Regulatory Compliance

Slow the Spread (STS)
- Barrier zone - intensive monitoring and treatment in the transition area where GM populations are:
  - Recently established
  - Low density
  - Separate
- Goal: at least 60% reduction in spread
- Actual: 80% reduction in spread

Building on lessons learned from AIPM.....
### Analysis of Spread Based on Movement of the Quarantine

<table>
<thead>
<tr>
<th>Interval</th>
<th>Spread</th>
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<tbody>
<tr>
<td>1890-1915</td>
<td>9.5 km/yr</td>
</tr>
<tr>
<td>1916-1965</td>
<td>3 km/yr</td>
</tr>
<tr>
<td>1965-1989</td>
<td>21 km/yr</td>
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Liebhold et al 1992

### STS will prevent infestation of more than 250 million acres over the next 30 years

- 4 km/year with STS
- 20 km/year w/out STS

### STS Management Structure

- Non-profit foundation with each participating state providing a member to the Board of Directors
- Provides a formal framework for cooperation among states
- Mechanism for states to meet cost share collectively
- Flexibility to target federal funds where biologically needed while keeping each state’s cost stable from year to year

### Operational Program

- Standardized decision making across all jurisdictional and administrative boundaries
- About 6 million acres treated; 85% with GM specific tactics
- Spread reduced >80%
- Prevented infestation of more than 100 million acres

### Key Factors that Led to Success

- More than 100 years of R&D
- Pheromone identified (Bierl et al 1970)
- Trap design & spacing
- Advances in products & spray technology
- Technology such as computers, the internet, GIS, the DA, map servers, GPS.....

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Two Key Factors

- The decision algorithm
- Mating disruption

Mating Disruption
Early Projects 1990-1998

- Aircraft equipped with Hercon's pods
  - Limited load capacity
  - 45 foot swath
  - Bridging and clogs
  - 300 to 1000 ac/day
  - High dose and high cost
  - But it worked!
  - Limited use – demonstrate efficacy & establish user confidence

Wide Use - 1999 to Present

- Improvements from contractors have increased production more than tenfold
- Production now > 1000 ac/hr/aircraft

Acres Treated by Dose, 1995-2012

988 blocks treated - about 5 million acres

STS Treatments

A web-based tool used to streamline planning and standardize actions by:

1. Setting project boundaries
2. Identifying & analyzing areas of concern; recommending actions
3. Measuring spread
4. Evaluating treatments

http://www.gmsts.org
**Mating disruption is critical to the success of STS because**

(1) it's target specific  
(2) inexpensive and  
(3) allows us to treat large bubbles that periodically develop along the advancing front

But it’s use is limited to the lower density populations (generally areas with most traps catching less than 30 moths each).

**Funding for STS**

- Federal funding fluctuates from $8 to $11 million annually  
- Partner match of $2.5 to $3 million  
- 2012, 2013 and future - max of $8 million  
- At $10 million federal funding  
  - About 85,000 traps and 525,000 acres treatment  
- At $8 million federal funding  
  - About 70,000 traps and 400,000 acres treatment

**Spread**

Variable in space and time but averaging about 4 km per year

** Illustrated in our past**

**STS Regulatory Funding**

<table>
<thead>
<tr>
<th>Year</th>
<th>APHIS Funding</th>
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<tbody>
<tr>
<td>2008</td>
<td>$227,287</td>
</tr>
<tr>
<td>2009</td>
<td>$262,287</td>
</tr>
<tr>
<td>2010</td>
<td>$278,625</td>
</tr>
<tr>
<td>2011</td>
<td>$281,429</td>
</tr>
<tr>
<td>2012</td>
<td>$171,000</td>
</tr>
<tr>
<td>2013</td>
<td>$90,000</td>
</tr>
</tbody>
</table>

Resolve conflicts between CFR and GM Program Manual
Summary

- STS is cooperative program between states, APHIS and Forest Service
- An effective barrier zone program that has reduced spread by 80%
  - Decision algorithm & mating disruption vital to success of STS
- As funding for the program decreases spread will increase