

INTRODUCTION

- SGM/AGM VS. EUROPEAN GM



GYPSY MOTH AROUND THE WORLD



Native to temperate Europe and Asia (Green). Established North America and Eastern Canada for 120 years (Blue)

AGM/SGM VS. EUROPEAN GYPSY MOTH



FEMALE AGM



AGM ON LEFT- EUROPEAN GM ON RIGHT

FEMALE AGM

LONGER WINGS

STRONGER
WINGS



ALLOW FOR
FEMALE FLIGHT

AGM ON CONIFERS



AGM HAS BROADER HOST RANGE. WILL FEED ON CONIFERS. ONLY CATERPILLAR STAGE FEEDS.

**High Risk Seaport Survey for
Asian Gypsy Moth and
Relatives**

**California Department of Food and
Agriculture**

Pest Detection/ Emergency Projects

2006 Work Plan

- This work plan outlines the objectives and procedures that the California Department of Food and Agriculture (CDFA) used during the 2006 high risk seaport survey for Asian gypsy moth, pink gypsy moth, nun moth, and Siberian silk moth.

Relevant Need

- The objective of California's survey activities for FY2006 will be to continue early detection of Asian gypsy moth (AGM), *Lymantria dispar* (L.) (Lepidoptera: Lymantriidae), at high-risk California deep-water port sites and in adjacent urban and ornamental plantings.

Relevant Need + More

- In addition, this trapping will be augmented for the first time in California to include the pink gypsy moth (PGM) [*Lymantria mathura* Moore (Lepidoptera: Lymantriidae)], nun moth (NM) [*Lymantria monacha* (L.) (Lepidoptera: Lymantriidae)], and Siberian silk moth (SSM) [*Dendrolimus superans sibiricus* Tschetverikov (Lepidoptera: Lasiocampidae)].

Background

- None of the four targeted pests are known to occur in the United States.
- All of the species are known from temperate Asia.
- Both AGM and NM have a wide host range which includes both deciduous and coniferous trees, while PGM attacks a wide range of deciduous trees, and SSM attacks conifers.
- All of these pests can cause extensive defoliation, with a resultant loss of productivity and/or tree death.

Background (cont.)

- In the eastern U.S. the European strain of gypsy moth (EGM) has caused widespread defoliation of deciduous forests.
- The AGM is considered to be a greater threat than the EGM because the females can fly and thus can colonize new areas at a more rapid pace than the EGM, and AGM larvae do well on conifers as well.
- The females of the other three targeted species similarly can disperse through flight.

Pink Gypsy Moth (PGM)

Lymantria mathura



Nun Moth (NM)
Lymantria monacha



Siberian Silk Moth (SSM)
Dendrolimus superans sibericus



Relevance to California

- Should any of these species become established in California it would have a significant negative impact on both the urban and native landscape and these pests could quickly spread to other states.

Expected Benefits

- The high risk seaport survey is a pro-active approach to enable CDFA to detect these pests before they become established and spread in California.
- This survey will increase the chances that these moths will be detected early, thereby allowing CDFA to take immediate and effective eradication action.
- Negative survey data is also beneficial because it supports the validity of existing state and federal regulations while promoting California's export program.

California Locations

- Survey areas are concentrated around eight deep-water shipping ports of California.
- The targeted ports are Eureka, Stockton, Sacramento, Port Hueneme, San Francisco, Oakland, Long Beach, and San Diego.
- Sites surveyed around ports included industrial harborage, docks, warehouse blocks, shipping and container storage areas, and adjacent urban residential or ornamental landscapes.

Economic Importance

- Exotic defoliators could cause devastating losses to the timber industry and to rural and urban landscapes.
- California has more forest land than any other state, except Alaska.
- The value of California's timber crop in 2004 was over \$500 million.

Plan of Action

- Traps containing specific lures for the four target species were placed in a 1-mile radius around the eight port locations.
- Twenty-five traps with GM lure and five traps each with PGM, NM, and SSM lures were placed per square mile over the 1-mile buffer.
- All traps were separated by at least 30 meters to avoid interference between the lures.

Plan of Action

- Trap deployment was June through September.
- Traps were inspected at two-week intervals.
- All suspect targeted moths were submitted to CDFA's Plant Pest Diagnostics Center (PPDC) in Sacramento for identification.
- **There were NO target pests intercepted in 2006.**

Trap Types

- Green Delta traps used for Asian Gypsy Moth baited with (+)-Disparlure.
- Pherocon IIC trap used for NUN and PGM.
- Modified GM Milk Carton Trap for SSM.

Pherocon IIC Trap



Pherocon IIC trap



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Modified GM Milk Carton Trap

