



Light Brown Apple Moth

April 18, 2008

Sanctuary Advisory Council Meeting



- About LBAM
- Timeline
- Monitoring/Toxicity testing
- MBNMS Permit
- Areas of Aerial Application
- MBNMS Follow-up
- CDFR Next Steps



LBAM Facts

- Discovered in Berkeley, CA in early 2007
 - 2005 survey revealed no LBAM presence
- 1st detection in US contiguous 48 states
- Infestations in 10 Bay Area and Central Coast Counties (quarantines in place)
- Invasive pest that attacks 250 crops and ~2,000 host and ornamental plants

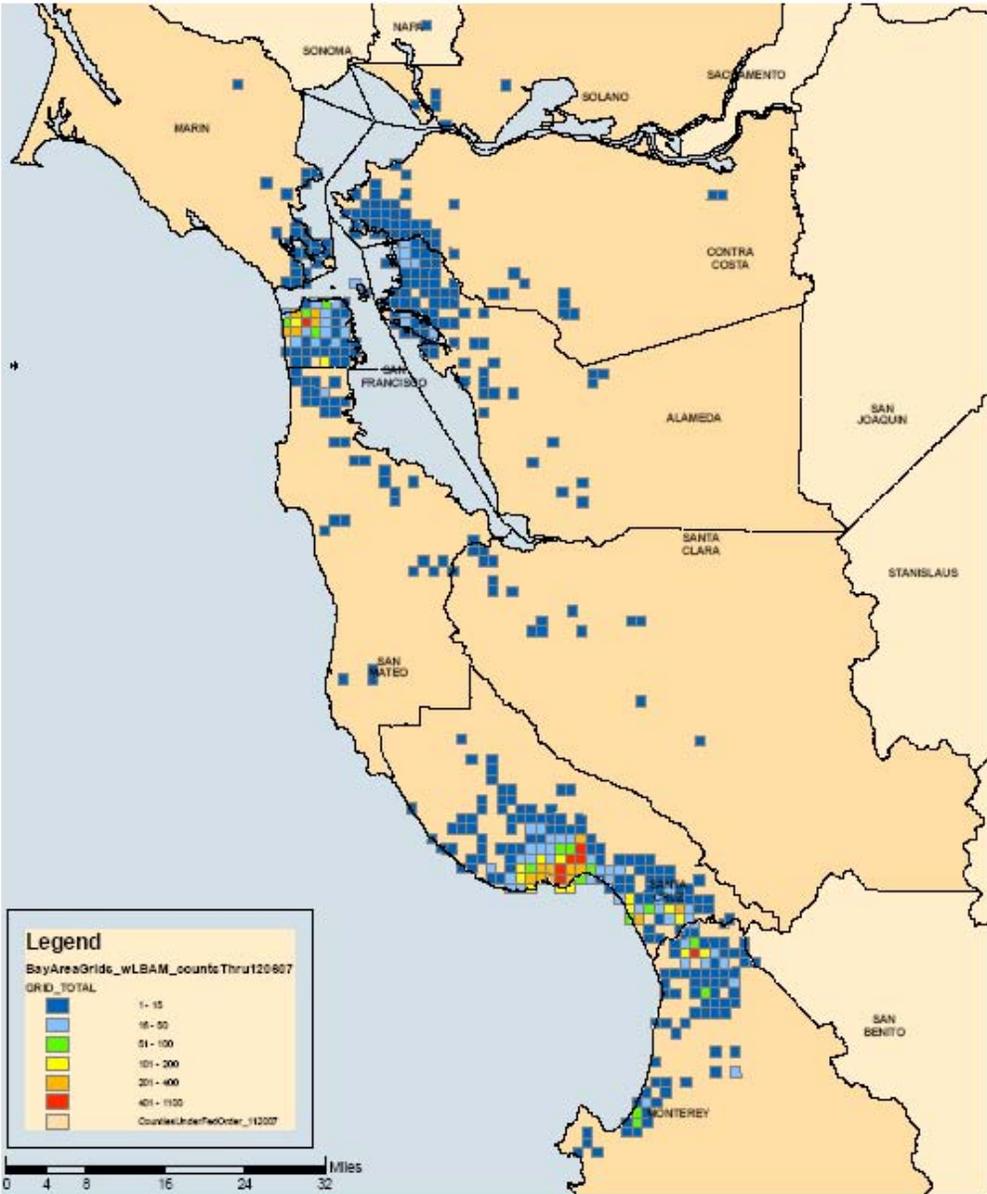


CDFA Class A Pest

- Damaging to wide range of plant species
- Does not occur elsewhere in US or many other countries
- If it becomes established, severe impacts on agriculture industry
- Classification defined to prevent further spread and eradication efforts



Light Brown Apple Moth Finds per 1-square-mile Grid in N California Through December 5, 2007



USDA, APHIS, PPO
 State Plant Health Director's Office
 850 Capitol Mall, Suite 6-400
 Sacramento, CA 95814

Coordinate System:
 NAD 83
 Date Printed: December 10, 2007

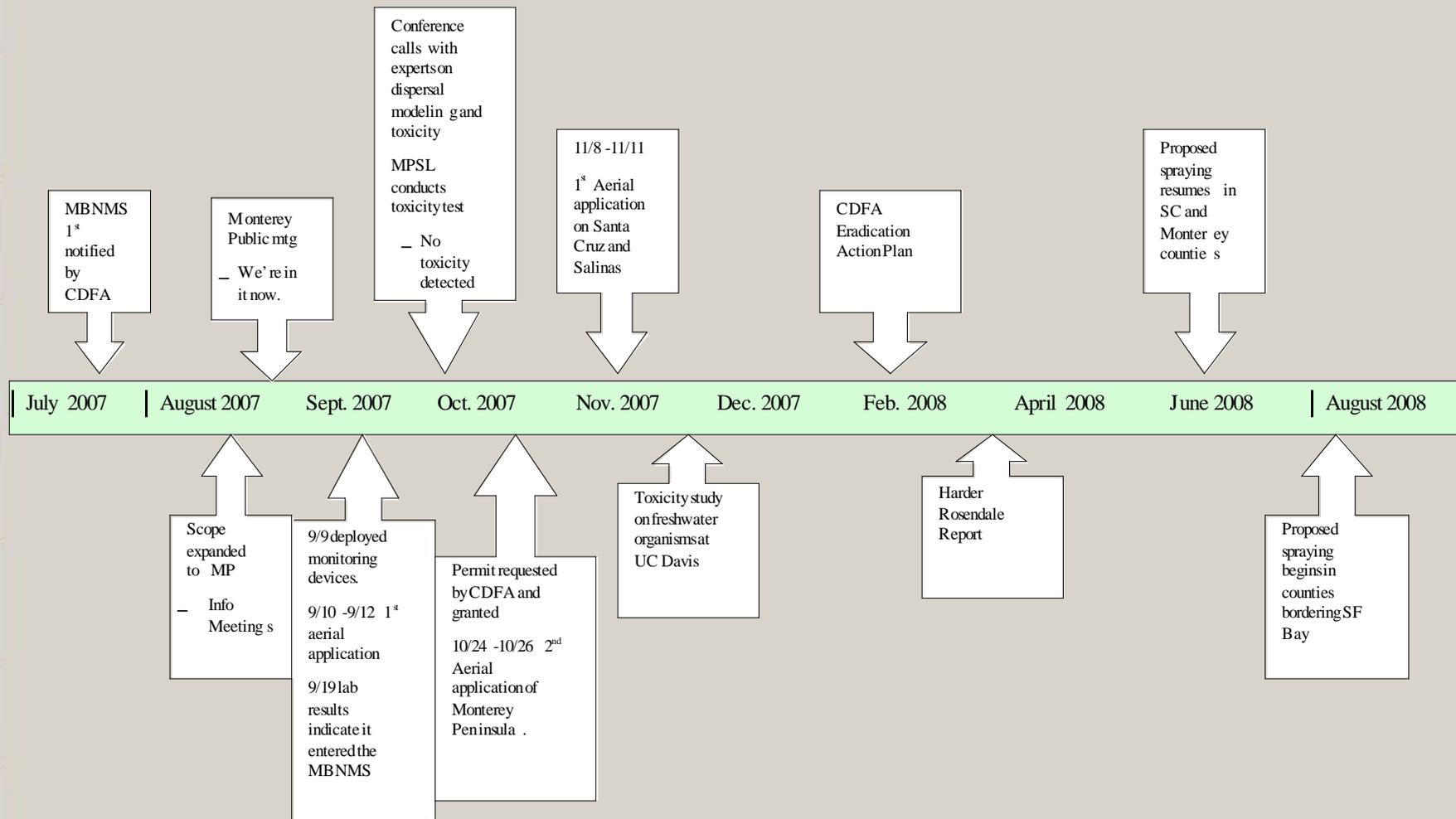
Data Source:
 CDFA - fms & grids



The U.S. Department of Agriculture's Animal and Plant Health Inspection Service collected the data displayed for internal agency purposes only. These data may be used by others; however, they must be used for their original intended purpose.



LBAM Timeline





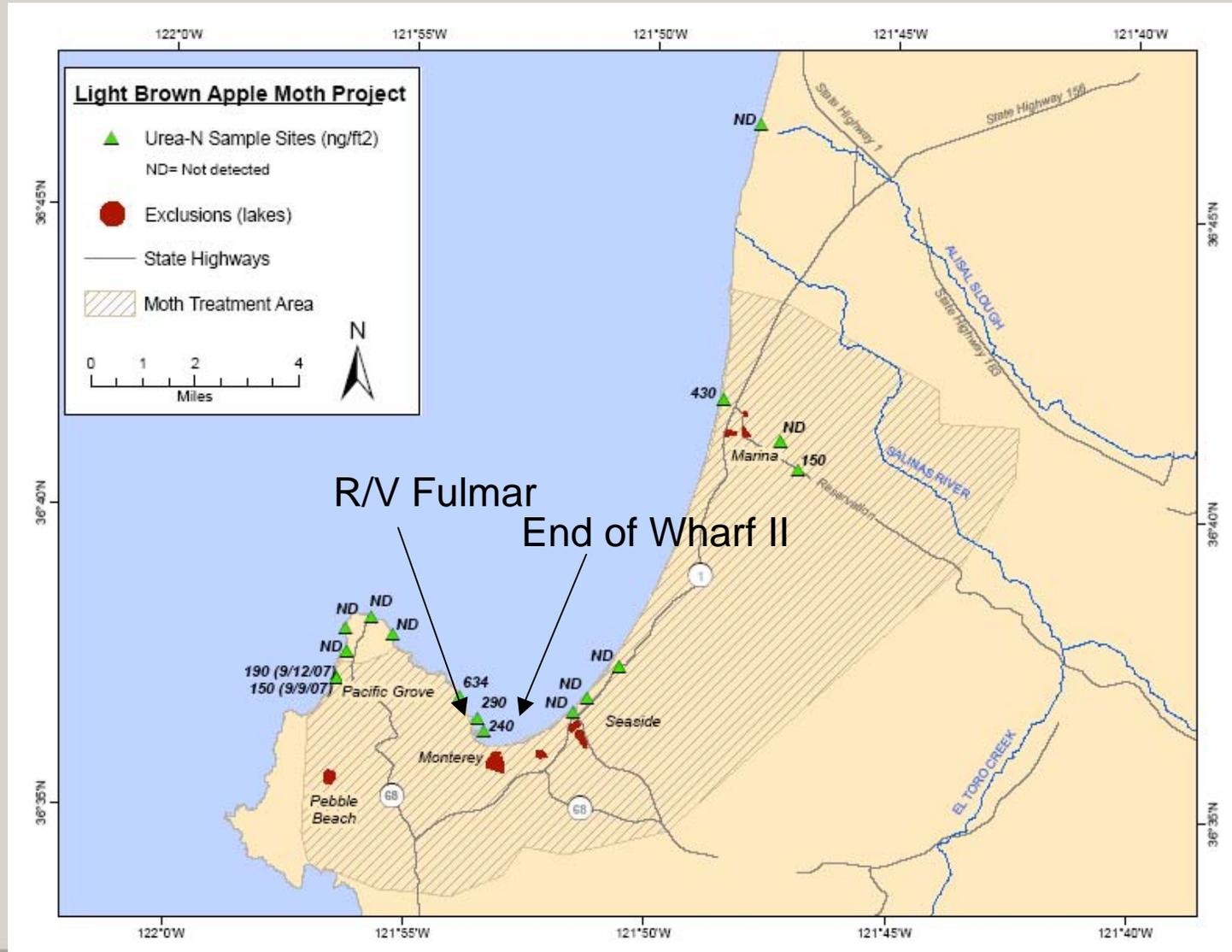
OLR-M & LBAM-F Pheromone Product

- Synthetic product that confuses the male
 - 17.6% active ingredient (made of carbon, hydrogen, oxygen)
 - ~70% water
 - ~11% other (see handout)
- Microcapsules-not water soluble
- Can be applied by aerial spraying, twist ties, ground application



Sampling Sites and Results

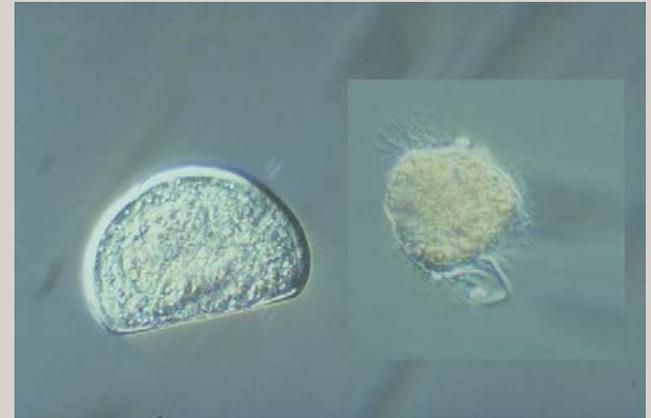
Sept. 9-12





UC Davis MPSL Toxicity Results

- Formulated product, direct application
 - Sept. 07 application:
Averaged 36 microcapsules/ft²
Maximum 265 microcapsules/ft²
 - *Mytilus galloprovincialis*: No significant difference between LBAM-F and Control for survival and development (ie. no toxicity)





UC Davis Aquatic Toxicology Lab Findings



Copyright 1998 Marino Bioassay Lab.

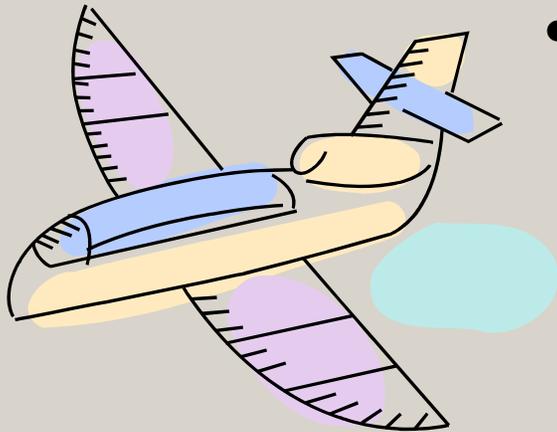
- Formulated product, direct application
 - *Ceriodaphnia dubia* (water flea) and fathead minnow
 - No effects based on average # of microcapsules observed in second application
 - Oct. 07: Average 114 microcapsules/ft²
Max. 809 microcapsules/ft²
- Active Ingredient (pheromone), direct appl. 15g/acre
 - *Ceriodaphnia dubia* – no effects at 12 and 24 ppb. 100% mortality at 100 to 400 ppm
 - Fathead minnow – no effects at 12, 24, and 48 ppm (1000x greater)
 - Entire amount of A.I. applied in Santa Cruz into a 2 acre pond would equal ~ 53 ppm





MBNMS permitting “triggers”

- Discharge or deposit of material
- Disturbance of marine mammals, seabirds or turtles except as permitted by current regulations under Marine Mammal Protection Act, Endangered Species Act, and the Migratory Bird Treaty Act





Permit Requirements

- Permit to discharge may be issued if “the Superintendent finds the activity will have only negligible short-term adverse effects on Sanctuary resources and qualities”
- Permit applications received 10/4/07 and 10/23/07 for Monterey and SC regions
- Permit issued 11/2/07, valid until 7/24/2010
- No permit issued for Elkhorn Slough region





MBNMS Follow-up

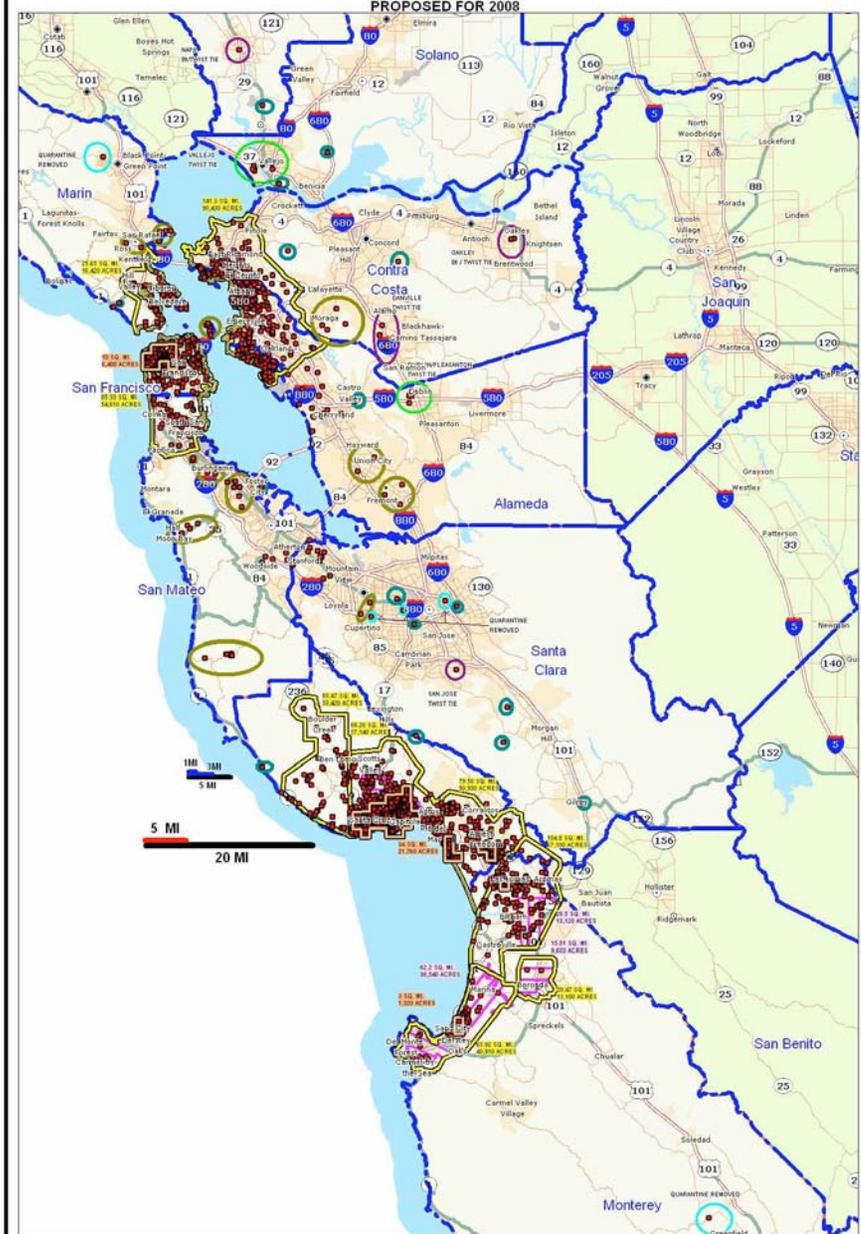
- Permit requires summary info from CDFA
- Elkhorn Slough Overflight Restriction
- Review of alternative products
- Investigate reports of environmental impacts



CDFA Future Plans

- Overall strategy = Eradication
- Tools
 - Pheromone mating disruption
 - Insecticide treatments (*Bacillus thuringiensis*)
 - Male moth attractant treatment (ground appl.)
 - Biological control (stingless wasps)
 - Release of sterile insects
- Applications will cease after 2 life cycles w/o detection
- Townhall meeting April 30th Monterey

**LIGHT BROWN APPLE MOTH
BAY AREA
PROPOSED FOR 2008**



- 2007/2008 TRAP FIND
- QUARANTINE REMOVED
- ERADICATION AREA
- ERADICATION COMPLETED
- AERIAL TREATMENT 2007
- DELIMITATION TRAPPING
- PROPOSED 200M TWIST TIE
- PROPOSED AERIAL TREATMENT
- PROPOSED WASP

Posted 2/15/08



Questions?

