DEPARTMENT OF FOOD AND AGRICULTURE

PROPOSED CHANGES IN THE REGULATIONS

Title 3, California Code of Regulations

Section 3591.6, subsection (a)

Gypsy Moth Eradication Area

INITIAL STATEMENT OF REASONS/

POLICY STATEMENT OVERVIEW

Description of Public Problem, Administration Requirement, or Other Condition or Circumstance the Regulation is Intended to Address

This regulation is intended to address the obligation of the Department of Food and Agriculture to protect the agricultural industry from the movement and spread of injurious plant pests within California.

Specific Purpose and Factual Basis

The specific purpose of Section 3591.6 is to provide authority to the State to perform eradication activities against gypsy moth (GM), *Lymantria dispar*, in the counties listed in the regulation.

The factual basis for the determination by the Department that the amendment of this regulation is necessary is as follows:

On July 8 and 9, 2013, two adult male gypsy moths were trapped for the first time in Butte County, in the Magalia area and about one mile apart.

Gypsy moth is a pest of national concern. The United States Department of Agriculture maintains a Federal Domestic Quarantine Notice against gypsy moth (Section 301.45, Title 7, Code of Federal Regulations) to prevent the artificial spread of this pest to uninfested areas in the United States.

Gypsy moth, *Lymantria dispar*, is a serious pest of fruit, forest, and shade trees. In the eastern United States the pest has, by repeated defoliation, killed many trees. If left uncontrolled it can destroy native forest and wooded areas and, in orchard and urban areas, pesticide use may be necessary to eradicate the insect and prevent damage to crops and ornamental and native trees. A defoliated watershed increases both fire and erosion potential.

The gypsy moth goes through four stages of development: egg, larva, pupa, and moth. It usually has one generation per year, overwintering in egg masses attached to trees, stones, walls, logs, and other outdoor objects such as outdoor furniture, automobiles, and trailers. The female moths lay their eggs in the summer, in egg masses which may contain up to 1,000 eggs. In California, the eggs usually hatch in February or March, but may hatch earlier. The larvae are the destructive stage and feed until pupating in early summer. The moths emerge from the pupal or cocoon stage in 10 to 14 days as adult moths. The pests do not feed in the moth stage, but only mate and lay eggs. Hosts of the gypsy moth include oak, apple, willow, cherry, and maple.

If the moth were allowed to spread and become established in urban, agricultural areas or native forests, California's forestry and nursery industries would suffer losses due to decreased production of marketable crops, host trees, and shrubs and increased pesticide use. Severe damage to native plantings and forests would also occur.

This regulation will avoid harm to the public's general welfare by providing authority for the Department to perform detection, control and eradication activities, as needed, against gypsy moth in Butte County.

The implementation of this regulation will prevent gypsy moth from:

- Destroying millions of acres of California's hardwood and conifer forests, altering forest composition and damaging shade trees.
- Having a severe negative impact on the recreational use of forests, parks and back yards.
- Damaging our watersheds and animal habitats and further threatening endangered species.
- Having a significant negative impact on tourism.
- Having economic impacts in urban areas due to clean-up costs, tree replacement costs and loss of property values.
- Having health issues related to the hairs on the caterpillars causing rashes and allergic reactions.

- Having negative cultural impacts on indigenous tribes which use oaks, tanoaks and understory plants by helping preserve the cultural uses of host material.
- Having a negative impact on public safety and worker safety by preventing additional dead hazardous trees, increased fire severity for firefighters (local, State and federal) and arborists from being exposed to hazardous trees.

The entire County of Butte is being proposed as part of the eradication area because it is the political division that provides the most workable eradication area boundaries for detecting and exterminating established gypsy moth infestations. Hosts and other possible carriers may have already been moved from the possible infested areas to another portion of the county. Additionally, moths may have already spread naturally from the possible infested areas, resulting in small infestations outside the Magalia area. To enable rapid surveys and treatments of any of these small infestations without frequent amendment of the regulation, the entire county should be established as an eradication area.

This proposed amendment would provide authority for the Department to perform specific detection, control and eradication activities against gypsy moth in Butte County. To prevent spread of the moth to noninfested areas to protect California's agricultural industry and environment, if necessary, treatment activities against the moth have to begin by late winter. However, “The searching for all stages of gypsy moth by visual inspection, the use of traps, or any other means” had to begin immediately to determine the scope of the possible infestations in Alameda County.

<u>California Environmental Quality Act (CEQA)</u>

The gypsy moth has the capability of causing significant harm to California’s agricultural industry and severe adverse environmental impacts. A Final Programmatic Environmental Impact Report (PEIR), “Gypsy Moth, *Lymantria dispar* (L.) Eradication Program in California,” State Clearinghouse Number 90021090, January 17, 1992, was prepared by the Department as the lead agency under CEQA. The PEIR addresses the potential environmental impacts that would result from implementation of alternatives for the eradication of the gypsy moth. The PEIR is available upon request from the Department.

Economic Impact Analysis

The eradication and prevention of the spread of gypsy moth in California through the amendment and implementation of this regulation economically benefits:

- The general public
- Homeowners
- Tourism
- Agricultural industry
- Local governments
- Federal and State agencies
- The potentially affected businesses
- The State's general fund

Gypsy moth feeds on over 300 species of trees and shrubs. This amendment will prevent unnecessary economic damage to the nursery (including cut flowers and greenery and Christmas trees) and orchard industries, oak and conifer woodlands, timberland, hazards from dead trees, potential increases in fire danger, potential flooding, potential loss of heritage and shade trees, loss of soil stability, loss or habitat and food for wildlife, other ecological changes in impacted areas including to endangered or threatened species, aesthetic losses, increase use of pesticides, and cultural losses to indigenous tribes.

The Department's operational program cost for the implementation of this control program for fiscal year 2013/2014 is $150,000.

Potential Agricultural Industry Impacts

Gypsy moth may attack apple, apricot, cherry, grapefruit, orange, pear, prune and raspberries. If fruit tree defoliation were to occur, depending upon the stage of fruit development, fruit may not properly mature, have lower sugar content or drop. Loss of canopy protection could result in fruit sunburning, reducing the fresh market value of the fruit. Growers would be forced to treat if in a gypsy moth infested area.

Conifers are more susceptible to death than other evergreens because they do not produce another flush of growth once defoliated. As a result, conifers can die after one severe defoliation by the gypsy moth larva. Additionally, limited feeding on conifers may ruin their aesthetic value.

The 2011 value of Christmas trees was approximately $4.5 million, cut-foliage was approximately $26 million, potted plants were approximately $510.5 million and woody deciduous and evergreen ornamentals were approximately $957 million. While it is impossible to determine the specific value of all of the hosts gypsy moth, all of the production areas are located outside the Magalia area of Placer County.

There are approximately 489 interstate shippers of host nursery stock. All of these are located outside the Magalia area. If this area was not delimitated according to the USDA protocol, the USDA would implement a federal domestic quarantine which would unnecessarily regulate these interstate shipping nurseries.

Potential Forest Impacts

There is a federal domestic quarantine in the northeast US which regulates 19 states and the District of Columbia; this serves to prevent the artificial spread of the moth. In this same area, the USDA, Forest Service operates a multi-million dollar project for gypsy moth called "Slow the spread." The USDA Forest Service's "An Analysis of the Economic Feasibility of the Gypsy moth Slow the Spread Project" determined there was a benefit-to-cost ratio of approximately four to one. The total net present value (minus its costs for implementation) of this project over the next 20 years is estimated to be $184 to $348 million. This benefit is gained even though gypsy moth is firmly established in this area and yearly natural spread is anticipated. Gypsy moth is not established in California and has been successfully eradicated before; therefore the anticipated benefit-to-cost ratio would be substantially better than that seen with "Slow the Spread."

In 2000, the Governor signed into law SB1832, the California Forest Legacy Act. This law allows the CalFire to acquire conservation easements, and permit Federal, State agencies, local governments and nonprofit land trust organizations to hold conservation easements acquired pursuant to the California Forest Legacy Program. Money to fund the Program is obtained from gifts, donations, federal grants and loans, other appropriate funding sources, and from the sale of bonds pursuant to the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000. The purpose of the Forest Legacy Program is to protect environmentally important forestland threatened with conversion to non-forest uses, such as subdivision for residential or commercial development.

The federal Forest Legacy (16 U.S.C. Sec. 2103c) program was part of the 1990 Federal Farm Bill and CalFire administers this program too. It recognized that private forestland owners were facing increased pressure due to greater population densities and users demands, to convert their forestlands to other uses, such as housing subdivisions, rural lots and vineyards. Furthermore, forestland provides a wide variety of products and services including fish and wildlife habitat, aesthetic qualities, timber and recreation opportunities. Good stewardship of privately held forest lands requires a long-term commitment that can be fostered through a partnership of local, state and Federal government efforts.

The establishment of gypsy moth in California and the resultant denuding of the forests would negatively impact the intent of both the State and federal forest legacy programs.

There are 33 million acres of forest in California, federal agencies own and manage 19 million acres (57%), State and local agencies manage approximately one million acres (3%) and the remaining 40% is owned by families, indigenous tribes or companies. Young larvae feed on oaks, aspen, birch, willows, and alder. Older larvae feed on broader range of plants including cedars, pines, spruces and firs. Host feeding tests have confirmed that manzanita, Douglas fir, live oaks and western hemlock are good hosts.

Studies with the sudden oak death pathogen have demonstrated the dieback of coast live oak can result in changes in insect populations, impacting insectivorous birds by forcing them to switch prey, change foraging substrates or increase foraging time. This may lead to changes in the survivorship of nestlings. Studies suggest that oak-dependent birds may decline in species richness and diversity by five to 15 percent. The changes in forest ecology will also lead to changes in the populations of small mammals, snakes and amphibians. The defoliation of the coast live oaks would likely have similar effects.

Other studies with the sudden death pathogen provided evidence that widespread tree mortality reduces bionome production and carbon uptake and increases future carbon emissions from decaying and burning of the course woody debris and dead trees.

California's total oak woodlands contain about 5 billion cubic feet of wood valued at over $275 million and the total California timberlands contain 5.8 billion cubic feet of oaks, which are worth

over $500 million for forest products alone. Oak products exported from California from 1996-2000 averaged almost $50 million per year (According to the USDA's website: (http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/downloads/pdf_files/pra-cphst-08.pdf.)

A July 2013 search of the internet found a reference that according to the Board of Equalization, the tax value for California timber yield was approximately $99 million in 2009. Therefore, whatever the current source of State revenue is, it would be negatively impacted if gypsy moth were to become established in California.

Healthy forests are vital to have clean water. Maintaining and restoring watersheds were the primary reasons for establishing the National Forest system. Water is the central organizer of ecosystems both physically and biologically. California's national forests occupy approximately 20 per cent of the State but account for 45 per cent of California's renewal water from runoff from the national forests. The ability to have this runoff but also retain water for ground water recharge is very critical to California. With 60 to 70 percent of the ground covered with plants and litter there is a two per cent rainfall surface runoff and a soil loss of 0.05 tons per acre. With 37 per cent of the ground covered with plants and litter there is a 14 per cent rainfall runoff surface runoff and a soil loss of 0.5 tons per acre. With 10 percent of the ground covered with plants and litter there is a rainfall surface runoff of 73 per cent and a soil loss of 5.55 tons per acre. The denuding of forests by gypsy moth would decrease ground water recharging, increase flood risks and clog existing water ways with excessive silting due to increased erosion. This will negatively impacts California's wetland and riparian areas and aquatic biodiversity. Excessive silt in streams and rivers have been proven to ruin gravel beds used by salmon, steelhead, trout and other species for spawning.The establishment of gypsy moth in California and the resultant denuding of the forests would negatively impact California's water renewable supply, increase flood risks, change ecosystems and negatively impact the economy and general welfare of California residents.

Potential Homeowner's and Recreational Use Impacts

A 1977 USDA Forest Service economic analysis (no current study could be found) of the gypsy moth problem in the northeast found:

- Homeowners who treated their own properties spent an average of $62.
- Homeowners who hired a commercial applicator spent an average of $146.

- Managers of commercial campgrounds spent $269.

Financial losses attributed to gypsy moth consisted of capital costs incurred with coping with the infestation, increase maintenance costs, reduction in property values and at campgrounds reduction in revenues.

44 per cent of home owners who hired commercial applicators reported an annual loss of an average of 133 person-days recreational use of their property. 51 per cent of home owners who treated their own property reported an annual loss of an average of 108 person-days recreational use of their property. Four cent of the managers of campgrounds reported an annual loss of 161 person-days of recreational use of their facilities.

Besides the above impacts, homeowners face the costs of removing trees which die due to being denuded. The loss of shade trees negatively impacts the aesthetics of the property and can lead to increased energy use.

Potential Impacts on Tourism

Tourism would be negatively impacted do to defoliated and dying trees and shrubs in parks and forests and the resulting visual aesthetic losses of the host trees.

Potential Impacts on Local Governments

Local governments would face unexpected costs when they have to remove dead trees and become a hazard in parks, parkways, along roadsides or adjacent to public buildings. Local governments would also face unexpected treatment costs.

The Department's Pest Detection and Emergency Projects estimates its costs for running a gypsy moth project in the Magalia area of Placer County for the 2013/2014 year are $150,000. Given the potential long term impacts of gypsy moth infestations the Department has concluded this is money well spent.

Anticipated Benefits from This Regulatory Action

Existing law, FAC section 403, provides that the department shall prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.

Existing law, FAC section 407, provides that the Secretary may adopt such regulations as are reasonably necessary to carry out the provisions of this code which she is directed or authorized to administer or enforce.

Existing law, FAC section 5321, provides that the Secretary is obligated to investigate the existence of any pest that is not generally distributed within this State and determine the probability of its spread, and the feasibility of its control or eradication.

Existing law, FAC section 5322, provides that the Secretary may establish, maintain, and enforce quarantine, eradication, and such other regulations as are in her opinion necessary to circumscribe and exterminate or prevent the spread of any pest which is described in FAC section 5321.

The existing law obligates the Secretary to investigate and determine the feasibility of controlling or eradicating pests of limited distribution but establishes discretion with regard to the establishment and maintenance of regulations to achieve this goal. This amendment provides the necessary regulatory authority to prevent the artificial spread of a serious insect pest which is a mandated statutory goal.

This regulation will benefit the public's general welfare by providing authority for the State to perform detection, control and eradication activities against gypsy moth in Butte County.
The implementation of this regulation will prevent gypsy moth from:

- Destroying millions of acres of California's hardwood and conifer forests, altering forest composition and damaging shade trees.
- Increasing flood risk due to increased forest rainwater runoff.
- Increasing the silting of streams, rivers, lakes and other water ways.
- Disrupting California's water supplies.
- Having a severe negative impact on the recreational use of forests, parks and back yards.

- Damaging our watersheds and animal habitats and further threatening endangered species.
- Having a significant negative impact on tourism.
- Having economic impacts in urban areas due to clean-up costs, tree replacement costs and loss of property values and preserving atheistic values.
- Having public health issues related to the hairs on the caterpillars causing rashes and allergic reactions.
- Having negative cultural impacts on indigenous tribes which use oaks, tanoaks and understory plants by helping preserve the cultural uses of host material.
- Having a negative impact on public safety and worker safety by preventing additional dead hazardous trees, increased fire severity for firefighters (local, State and federal) and arborists from being exposed to hazardous trees.
- Eliminating the need to implement a quarantine.

The Department is the only agency which can implement plant quarantines. As required by Government Code Section 11346.5(a)(3)(D), the Department has conducted an evaluation of this regulation and has determined that it is not inconsistent or incompatible with existing state regulations.

Estimated Cost of Savings to Public Agencies or Affected Private Individuals or Entities

The Department of Food and Agriculture has determined that Section 3591.6(a) does not impose a mandate on local agencies or school districts and no reimbursement is required under Section 17561 of the Government Code.

The Department also has determined that no savings or increased costs to any state agency, no reimbursable costs or savings under Part 7 (commencing with Section 17500) of Division 4 of the Government Code to local agencies or school districts, no nondiscretionary costs or savings to local agencies or school districts, and no costs or savings in federal funding to the State will result from the amendment of 3591.6(a).

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

The Department has determined that the proposed actions will not have a significant adverse economic impact on housing costs or California business, including the ability of California businesses to compete with businesses in other states. The Department's determination that the action will not have a significant statewide adverse economic impact on business was based on the following:

The amendment of Section 3591.6(a) will provide authority for the Department to conduct eradication activities against gypsy moth within Butte County and there are no known private sector cost impacts.

Assessment

The Department has made an assessment that the repeal of the regulation would not 1) create or eliminate jobs within California; 2) create new business or eliminate existing businesses with California; or 3) affect the expansion of businesses currently doing business with California. The Department has been conducting eradication projects throughout the State without creating or eliminating businesses.

Alternatives Considered

The Department did not consider any alternatives to the proposed amendment of the existing regulation because it believes the proposed regulations are the best way to achieve its statutory goals which obligate it to prevent the establishment and spread of pests.

Information Relied Upon

The Department relied upon the following studies, reports, and documents in the proposed adoption and subsequent amendment of Section 3591.6:

Email from Debby Tanouye to Stephen Brown.

"Pest and Damage Record #s 041P06003908 and 041P06003908," California Department of Food and Agriculture, Plant Health and Pest Prevention Services.

Subpart-Gypsy Moth, Section 301.45, Title 7, Code of Federal Regulations.

Map, "European Gypsy Moth (*Lymantria dispar)* North America quarantine," USDA.

"An Analysis of the Economic Feasibility of the Gypsy moth Slow the Spread Project," January 2009, USDA Forest Service.

"California Forests." Printed July 12, 2013, University of California Forest Research and Outreach.

"Water and the Forest Service," January 2000, USDA Forest Service.

"Action Plan for Gypsy Moth, *Lymantria dispar* l.," May 2000, California Department of Food and Agriculture, Plant Health and Pest Prevention Services (eight pages).

"Economic Analysis of the Gypsy Moth Problem in the Northeast," 1977, USDA Forest Service Research Paper NE-360.