Sudden Oak Death
*(Phytophthora ramorum)* Regulations

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SOD Regulations

- Forestry Regulations
- Nursery Regulations
- State vs. Federal Regulations (Harmonized)
- Quarantined Counties
- Bole Hosts vs. Foliar Hosts (Product Regulations)
- Movement within the quarantined counties
- Movement outside of the quarantined counties
Forestry Regulations: Some first steps

◊ Be familiar with your property, or the property/forest you are managing.
Do I have SOD on my property, or within my timber harvest plan area?

◊ Must know on which plants to look
◊ Find host lists at www.suddenoakdeath.org
◊ Look under Symptoms and Diagnosis
◊ Host Plant Lists (always updating)
Do I have **SOD** on my property, or within my timber harvest plan area?

✧ **Must know on which plants to look**
  ✧ **Find host lists at www.suddenoakdeath.org**
    ✧ **Look under Symptoms and Diagnosis**
      ✧ **Host Plant Lists**

✧ **Learn symptoms on those hosts**
  ✧ **Look under Symptoms and Diagnosis**
    ✧ **Plant Symptoms (first 3 are oak, tanoak, bay. Learn these.)**
      ✧ **Image Library**
    ✧ **Plant Symptoms photos (for other hosts)**
Now that I know what symptoms to look for, and on which hosts, how do I survey for incidence of the disease?

◊ [www.suddenOakDeath.org](http://www.suddenOakDeath.org)

◊ Treatment and Management

◊ Professional Resources

◊ Survey Methods:

◊ Delineation grid – strip cruise 20%

◊ Characterization Survey (variable %) for % infected, % mortality, average age, average size, etc.
Figure 1
Transects spaced at 100 meters
**P. ramorum Quarantine**

- Purpose is to reduce the artificial spread of *P. ramorum*
- State and Federal Agencies regulate the movement of host material – the two are harmonized
- Two-tiered system: State (CDFA) regulates intrastate movement of regulated materials; Federal USDA-APHIS) regulates interstate movement
- The County Agriculture Commissioner has the ultimate responsibility
- Federal and State employees (and all others) must follow quarantine regulations!
Regulated Areas

- California - 15 counties:
  - Alameda, Contra Costa, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Sonoma, Solano, Trinity

- Oregon: Curry County
Regulations: Wood, Logs, Burls, Firewood

State

- Cannot move from Regulated Area without a compliance agreement.
- Logs and firewood may be moved if debarked.

Federal

- Can move within the Regulated Area freely, but not out of the Area if destination is out-of-state.
- If bark is removed prior to leaving state it can move out of the Area with a compliance agreement.
Regulations: Green Waste

State
- Cannot move from Regulated Area without a compliance agreement specifying containment and utilization conditions.

Federal
- Can move within the Regulated Area freely, but not out of the Area if destination is out-of-state.
- There is a provision for moving green waste to an approved research or experimentation facility.
Regulations: Soil

**State**

✧ Soil is not a regulated article under the state regulation.

**Federal**

✧ Soil capable of growing plants is regulated and cannot move outside of the state.

✧ Soil can move interstate if treated (30 min. @ 180F) or certified not in contact with P. ramorum and devoid of duff.
Regulations: Wreaths

**State**
- Host wreaths may not leave the Regulated Area without compliance agreement.

**Federal**
- Interstate shipments from Regulated Area must first be treated (hot water dip 60 min. @ 160F).
- OR… Compliance Agreement approved by both CDFA and APHIS.
- Example: Douglas Fir boughs must be inspected before use in wreaths
Regulations: Nursery

State

- Hosts leaving Regulated Area must be free of P. ramorum per sampling protocol &
- with compliance agreement.
- Soil is not regulated.

Federal

- Interstate shipments certified clean after inspection & sampling protocol.
- Soil capable of growing plants is regulated and cannot move outside of the state unless treated 30 min. @ 180F.
Limit firewood permits to conifers only in the regulated area.

Do not issue Christmas tree permits for Douglas-fir in the regulated area. *Has this been updated?*

SOD host material authorized to be removed by contracts or permits (timber sales, permits, and service contracts) should remain within the regulated area or be treated prior to shipment.

Permits to collect specimens of host plants for transport out of the regulated area should not be issued unless they are for scientific or diagnostic purposes.

Follow *P. ramorum* BMPs, educate employees and the public, and participate in survey and monitoring.
Best Management Practices

- Wash vehicles and equipment before leaving an infested site when they have been parked in an unpaved area.
- On leaving an infested site, brush and wash shoes to remove mud and dirt.
- Do not operate during wet weather in infested areas.
- Clean all cutting tools, shoes, etc. when leaving an infested site.
- Keep up with state and federal regulations as they can change.
- Work in uninfested areas before infested area
- In infested areas, burn or leave slash on site.
Best Management Practices

- Keep abreast of the current host list.
- Report suspected infections to your local Ag. Commissioner, or FHP or CALFIRE plant pest management specialist.

www.suddenoakdeath.org
These are the regulations (stuff you have to do) if the regulated article leaves the quarantine area (ZOI) or state. But what can you do to minimize the risk of introduction or spread within the quarantine area /ZOI (stuff you should consider doing)?
SOD
Best Management Practices (BMP’s)
a.k.a: “stuff you should be doing”
BMP Basics

- Based on the biology of the pathogen
- Conditions it thrives in
- Actions that can be done by humans with some likelihood of success
Elements for Effective BMP’s

- **Knowledge** of the pathogen
- **Planning** to mitigate spread
- **Sanitation**
- **Timing** of activity
- **Avoidance** of the pathogen
- **Accepted Treatments**
- **Monitoring** for effectiveness
Knowledge

- \textit{P.r.} likes it warm & wet (spring)
- \textit{P.r.} does NOT like hot & dry
- \textit{P.r.} can survive in green plant material, soil, and water
- \textit{P.r.} can move from Point A to Point B in plant material, soil, and water
- Stem-infected trees may be structurally weak and hazardous (HAZARD TREES!)
Planning

- Survey & sample for SOD
- Know where equipment is coming from, or going to next
- Know where to get regulatory paperwork, and who to contact
- Sanitation plan - put together sanitation kits and plan sanitation site
- Tailgate sessions to explain SOD mitigation
- Plant ID training
- Know location of nearest power wash
- Green waste disposal
- Location of logging decks, landings, roads, etc.
Sanitation

- **Kits:** Lysol or bleach, water, brushes, whisk broom, Muck-type rubber boots, tool to clean shoe tread, towels, bucket, plastic gloves, bags/baggies, & tarp

- **What to clean:** shoes, hand & heavy equipment, vehicles, rec. vehicles, pets, gloves OR,

- **Dedicate sets of equipment, shoes, and gloves for use only in SOD areas. Keep bagged and identified.**
10% bleach solution
Timing

- Work in disease free areas when wet, cool, and muddy
- Save SOD areas for hot, dry time, usually June through October
- Monitor and sample during wet, cool periods (late winter – early spring)
- *** Note - Infected bay leaves may be cast after hot summer periods
Avoid

- Muddy areas where SOD exists
- Parking off-road, or rock a planned parking area
- Drafting water from infected drainages, and using elsewhere
- Grinding stumps to, or below soil line

--- Wait, there’s more...
More things to avoid

- Placing chip or firewood piles in areas where others have access to move product - Keep firewood local

- Creating a fire hazard or other problems when abating SOD area

- Cankered trees for long-term snag recruitment
Accepted Treatments

- Stand manipulations (host reductions)
- Chemical treatments (Agri-fos, sprout mitigating herbicides)
- Composting, chipping, or pile & burn
- Bay leaves: vacuum/heat for spice, free-from survey or out-of-county gathering and compliance agreement for wreaths
- Genetic resistance is being evaluated
- Top dress exposed soil and trails with chips from Alaska yellow cedar heartwood or non-hosts
- Restoration
Monitor

- Survey & sample yearly
- Leaf-bait watercourses
- Rain bucket spore load quantification
- Soil sampling
- Check bay trees as early indicator
- Monitor tanoak sprouts
- Evaluate treatments
Incorporating SOD into land/resource management plans or timber harvest documents

- Follow all applicable state and federal regulations
- Obtain appropriate Compliance Agreements
- Incorporate BMPs to:
  - Minimize risk of disease introduction into property
  - Minimize build-up of disease within property
  - Minimize spread to other properties
Specific to state and private timber harvest plans (1 of 3)

- Determine location of SOD outbreaks and report to the Director. **14 CCR 917.19** [All Districts].

- Since the Board of Forestry and Fire Protection has approved the Director’s declaration for the need of a Zone of Infestation, an increased awareness and knowledge level of that pest is expected from the professional forester prescribing management practices within that ZOI.

- **14 CCR 917.9 (a)** [All Districts] mandates mitigations for pests when plan is within a ZOI.
Specific to state and private timber harvest plans (2 of 3)

◊ Just saying the regulated articles will not be leaving the ZOI, and therefore no state or federal regulations apply, is NOT showing how the proposed timber operations will minimize the build-up (including introduction) or spread of the disease (within the ZOI). Reference 14 CCR 917.9 [All Districts].

◊ Review and Consider the list of Best Management Practices we just reviewed, or explain how other mitigations will accomplish 14 CCR 917.9 [All Districts].
Specific to state and private timber harvest plans (3 of 3)

◊ Or, provide a “Free-From” survey report.
  ◊ Must have certified surveyor from a previous COMTF training class
  ◊ Include survey methods and survey map
  ◊ Include sampling results
  ◊ “Free-From” provides reasonable assurance that SOD is not on-site, but you still need to provide mitigation minimizing the risk of introduction
  ◊ Not valid if regulated articles are to leave the state
For THPs filed under an approved Sustained Yield Plan

- Review SOD information and identify new issues or mitigations in the new THP or deviation (substantial or minor). 14 CCR 1091.14
Approved THP is the functional equivalency of a Compliance Agreement

- Must be with load, just as with a regular Compliance Agreement
- Compliance Agreement or Equivalency good for one year:
  - From date of completion of “free-from” survey if no symptoms were detected
  - From “free-from” survey’s sampling results date obtained from an approved lab
  - From date of approved THP if no survey was conducted and all hosts are deemed infected. Plan’s mitigations must be reviewed and approved.
  - From date of SOD submission letter or amendment to NTMP coinciding with Notice of Timber Operations. Notice must comply with PRC 4594.6, that the NTMP is still in conformance with the rules.

- And also....
After 12 months has elapsed...

- Conduct another free-from survey and amend the plan
- Review current state and federal regulations or changes in host lists
- Amend plan where needed or notify Region that there have been no such changes
Forestry Assistance Programs

- California Forest Improvement Program (CFIP)
  - 20-to-5,000 acres of forestland zoned timber production (TPZ) or Agriculture Preserve
  - Cost share up to 75%
  - SOD incidence may generate cost share up to 90%
  - Assistance is in the form of reimbursement of invoices, and covers:
    - Plan preparation
    - Site preparation
    - Tree planting
    - Thinning/release
SUDDEN OAK DEATH

Knocks 'em dead at

The Distillery

opening bands TBA

Thursday, May 13, 10 PM

21+, $4.00, 2107 L St., Sacramento