

General views on the same treatment area in 2010



In this case sprouting was not controlled as a part of the treatment program. Sprouts 5 years post treatment are disease-free.



Pre and post bay removal

PRE-TREATMENT



POST-TREATMENT



Bay's miracle




What does it take?

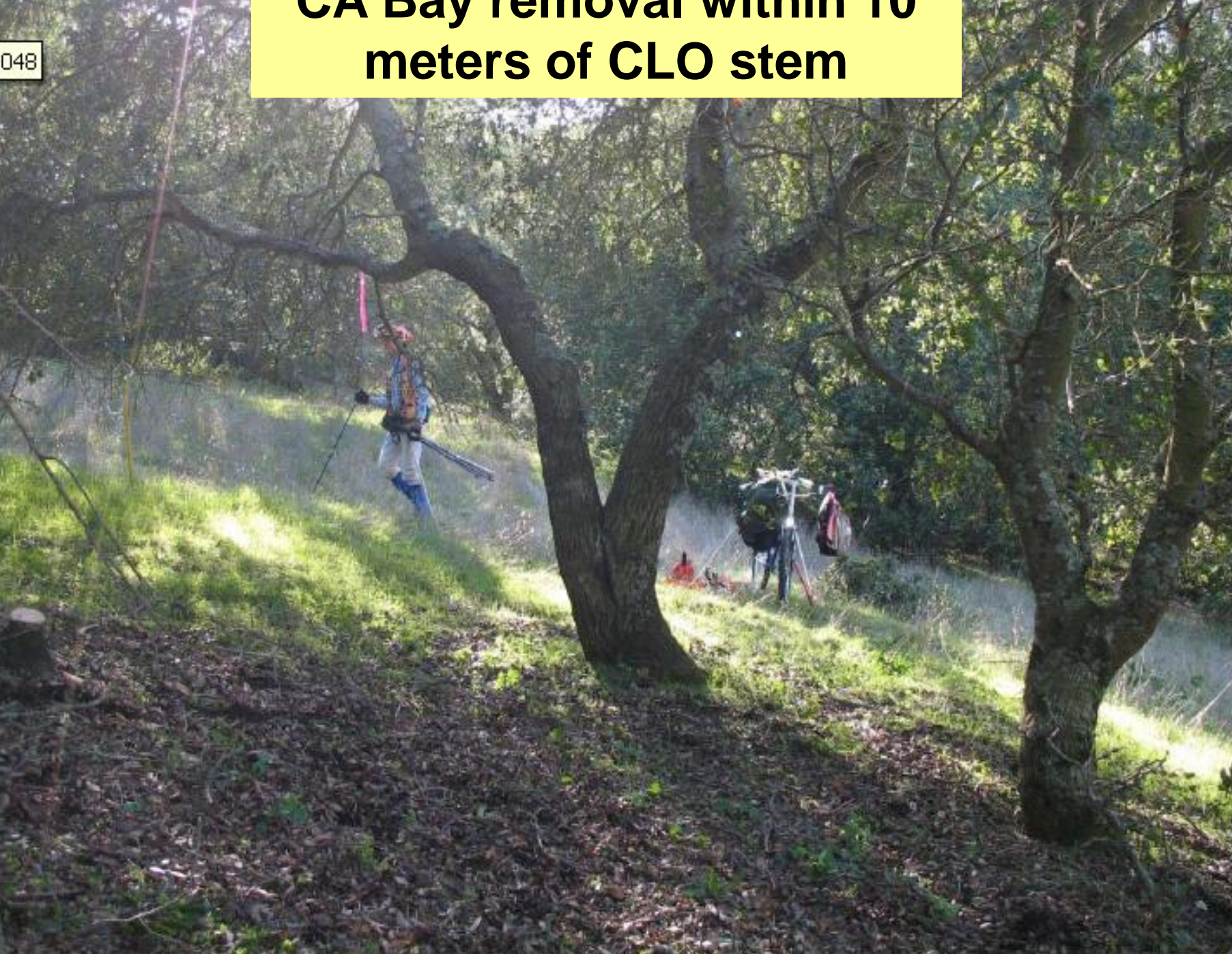


Individual coast live oak protection

IMG_0040

A photograph of a coastal live oak tree in a natural setting. The tree's trunk is thick and gnarled, with a prominent pink protective band wrapped around it. The foliage is dense and green, with sunlight filtering through the leaves. The ground is covered in dry leaves and grass. A small white label with the text "IMG_0040" is visible in the center of the image.

CA Bay Removal within 10 meters of CLO stem



Agri-fos®

- Agri-fos® is trade name for potassium phosphite or phosphonate
- Only chemical treatment against SOD approved for oaks and tanoaks in CA
- Can be used to *prevent* *P. ramorum* infections on high value oaks and tanoaks
 - Injection directly into bark
 - Spray application to bark w/ Pentrabark
- Mode of efficacy: confers resistance to trees
- Usage: Treatment in fall and spring of 1st year, then once a year in fall in the following years



Agri-fos®

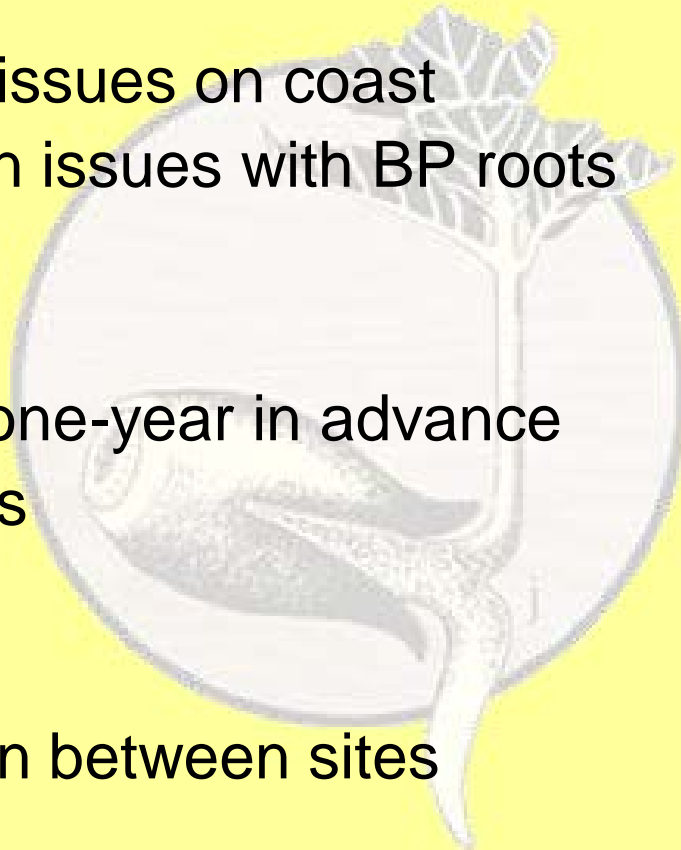


Recreation Site or Campground

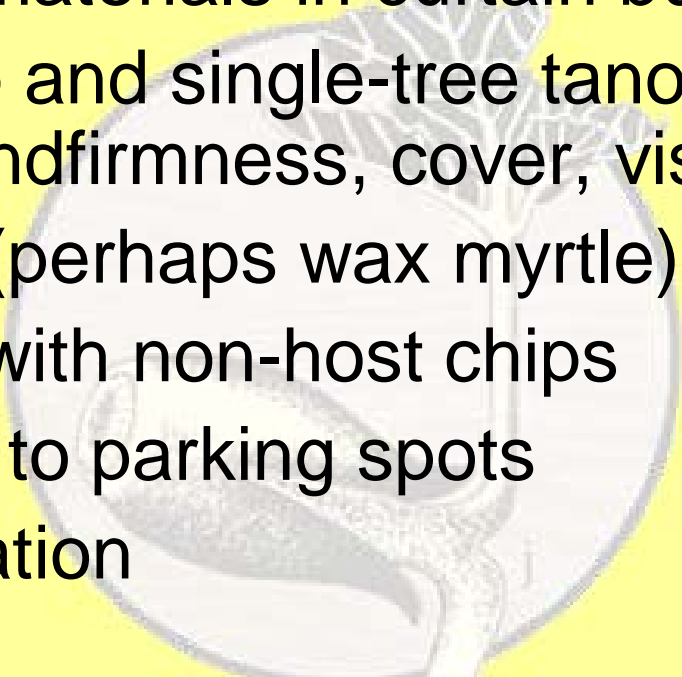


MackKerricher State Park

- Infected tanoaks with bleeding cankers
- No bay trees
- Windfirmness issues on coast
- Broadcast burn issues with BP roots
- Public safety
- Labor
- Reservations one-year in advance
- Parking spaces
- Dirt trails
- Horse trails
- Visual retention between sites



Rx

- Remove all symptomatic tanoaks
 - Dispose all materials in curtain burner
 - Select group and single-tree tanoaks for Agri-fos based on windfirmness, cover, visual blocks
 - Replant BP (perhaps wax myrtle)
 - Dress trails with non-host chips
 - Gravel base to parking spots
 - Public education
 - Monitor
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April 2009



Some project pics



Block access



Single burn permit with curtain burner



Herbicide stumps



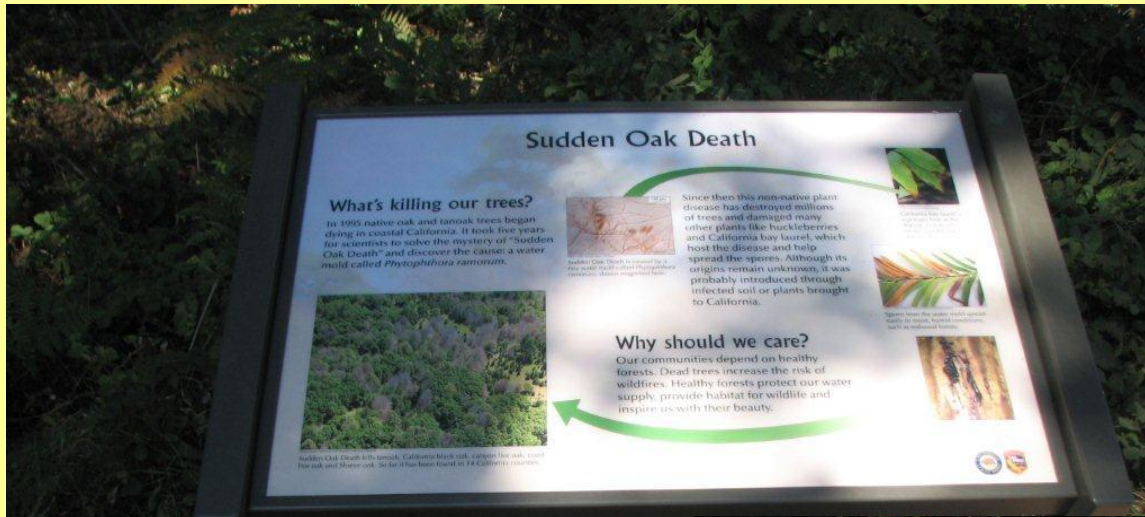
Leave-tree flagging of selected tanoak groups



Fell hazard Bishop pines to chip for dispersal over disturbed sites and trails



Public Education



Inglennook Infestation

- Extent unknown
- Tanoak sprouts, twigs, stems infected
- **NO** Ca bay present, just as with MacKerricher State Park
- Armillaria present in grand fir
- Balsam Woolly Adelgid found in GF
- Rx... TBD (“film at 11:00”)

Oregon:

- Eradication

Humboldt and Mendocino:

- Hot spot approach
- Slow the spread
- Tanoak survival

Greater bay area:

- Impact management
- Tanoak/ oak survival



Treatment

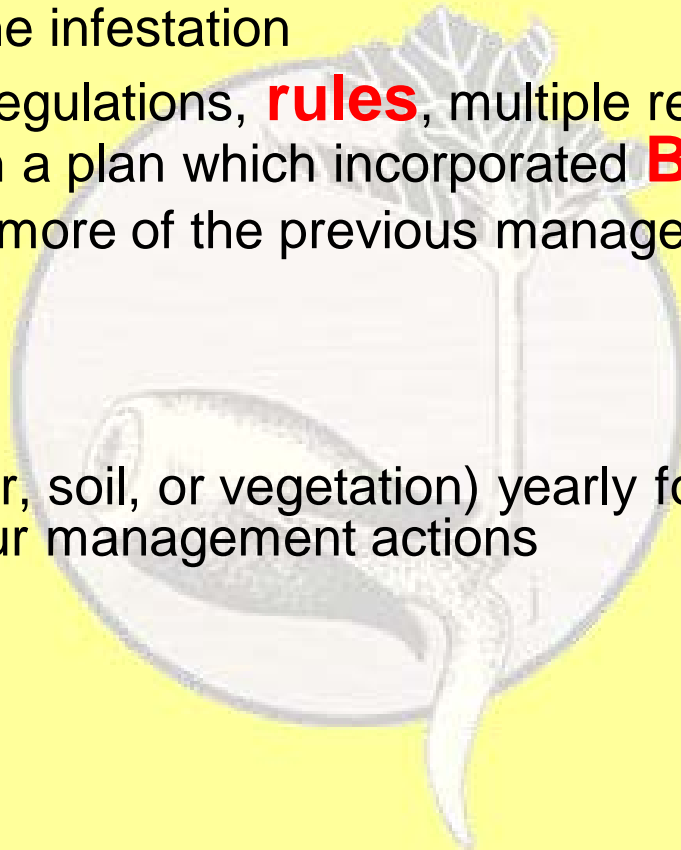


1. Hack & squirt tanoak to prevent stump sprouting (except on BLM land)
2. Cut tanoak, rhododendron, huckleberry, sometimes myrtle.
3. Burn (piles or broadcast)
4. Plant, follow-up treatments



Putting It All Together

- You designed and conducted your survey
- You sampled and received lab results
- You delineated the infestation
- You considered regulations, **rules**, multiple resource constraints, and came up with a plan which incorporated **BMPs**
- You used one or more of the previous management alternatives, based on goals
- You acted
- **Sanitize**
- Monitor (air, water, soil, or vegetation) yearly for additional infections or to evaluate your management actions

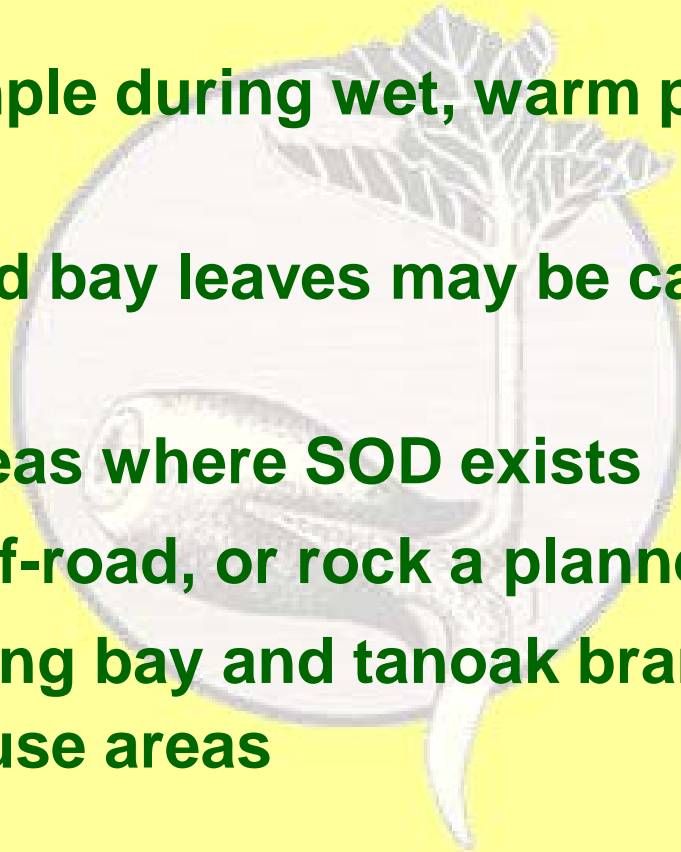


BMPs and Sanitation are Based On:

- *P.r.* likes it warm & wet (spring)
- *P.r.* does NOT like hot & dry
- *P.r.* can survive in green plant material, soil, and water
- *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

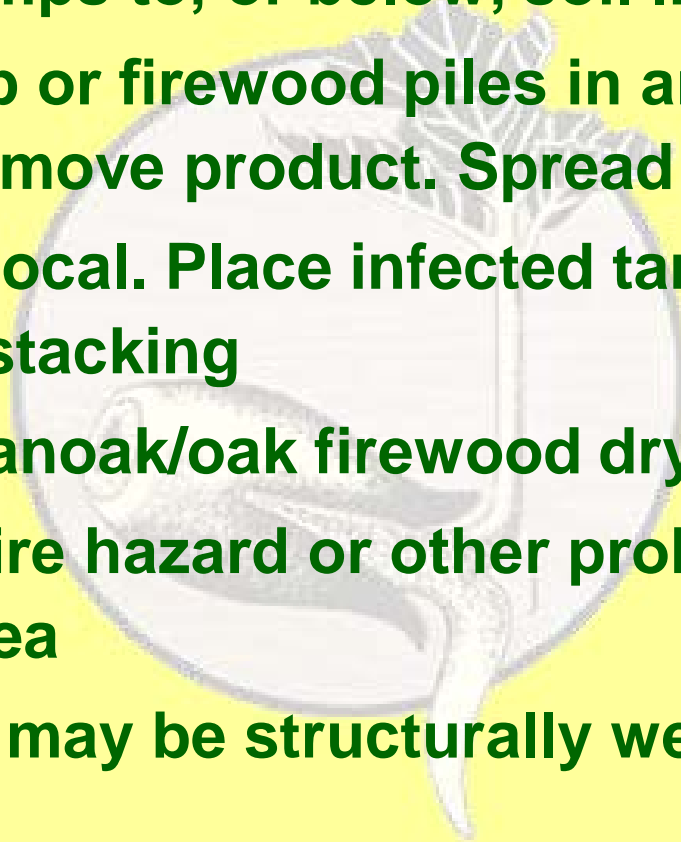
S0...

- Work in disease free areas when wet and muddy
- Save SOD areas for hot, dry time, usually June through October
- Monitor and sample during wet, warm periods (late winter – spring)
- *** **Note** - Infected bay leaves may be cast after hot summer periods
- Avoid muddy areas where SOD exists
- Avoid parking off-road, or rock a planned parking area
- Prune overhanging bay and tanoak branches or trees from parking or high use areas



and furthermore...

- Don't draft or draw water from infected drainages to use elsewhere, such as watering Rhododendrons
- Don't grind stumps to, or below, soil line
- Don't place chip or firewood piles in areas where others have access to move product. Spread chips on-site.
- Keep firewood local. Place infected tanoak stems in sun to dry, prior to stacking
- Keep infected tanoak/oak firewood dry
- Don't create a fire hazard or other problems when abating SOD area
- Cankered trees may be structurally weak and fail



Plus...

- Sanitation kits: Lysol or bleach, water, brushes, whisk broom, Muck-type rubber boots, tools to clean shoe tread, towels, bucket, plastic gloves, bags/baggies, & tarp
 - What to clean: shoes, hand & heavy equipment, vehicles, rec. vehicles, pets, gloves OR,
 - Plan where and how vehicles will be cleaned
 - Dedicate sets of equipment, shoes, and gloves for use only in SOD areas. Keep bagged and identified.
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