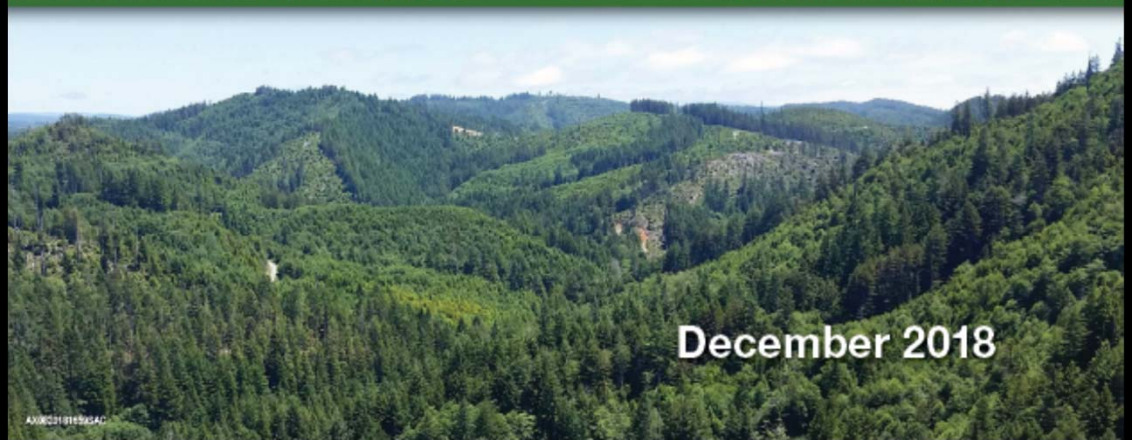
Forest Habitat Conservation Plan

on the California Timberlands of Green Diamond Resource Company

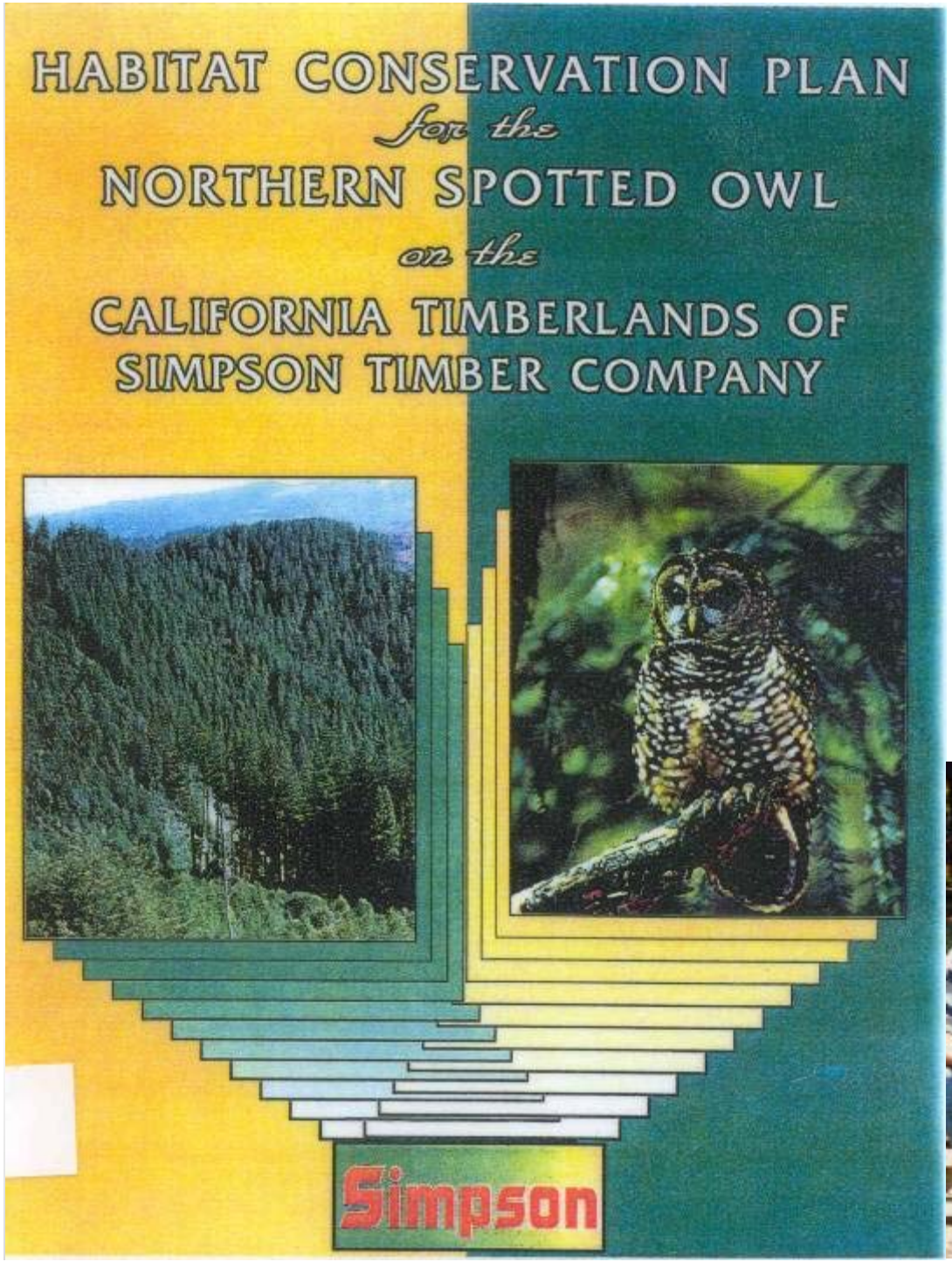
Prepared by:

GREEN DIAMOND Resource Company



December 2018


GREEN DIAMOND
Resource Company
About us:
• Started in Puget Sound in 1890 by Sol Simpson
• California Timber Operations started in 1947 at Klamath
• Family Owned
• California: 375,000 acres
• Washington: 300,000 acres
• Oregon: 625,000 acres
• Southeastern US and Western US: 381,000
• SFI Certified WA, OR, Southeast
• FSC Certified CA

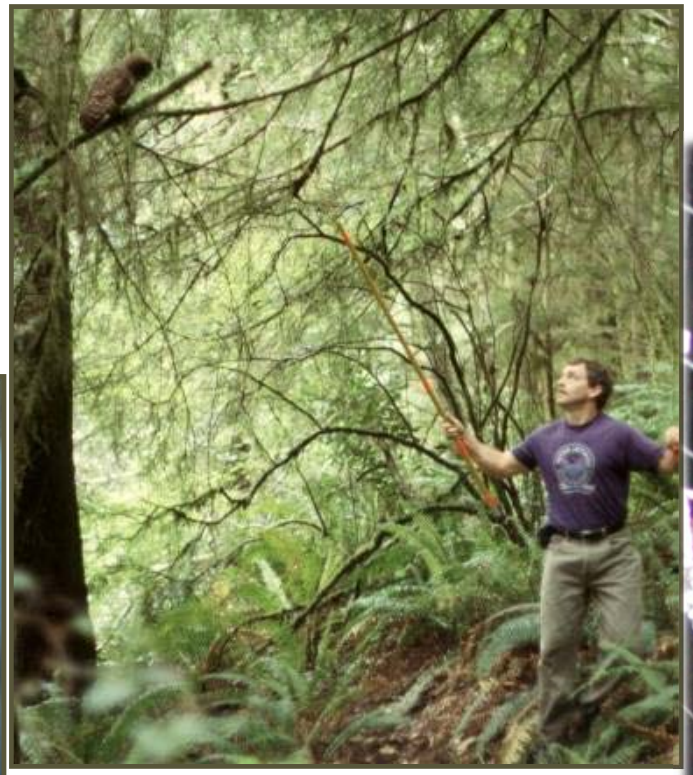


Original 30-year plan signed September 1992 (amended 2007)

Conservation strategy based on growing habitat, set-asides, research and monitoring

New Forest HCP based on 20+ years of research and monitoring

On-going surveys since 1989 and demography study since 1990



Continuous monitoring of nest sites: 1990-present (476 used in fecundity analysis)

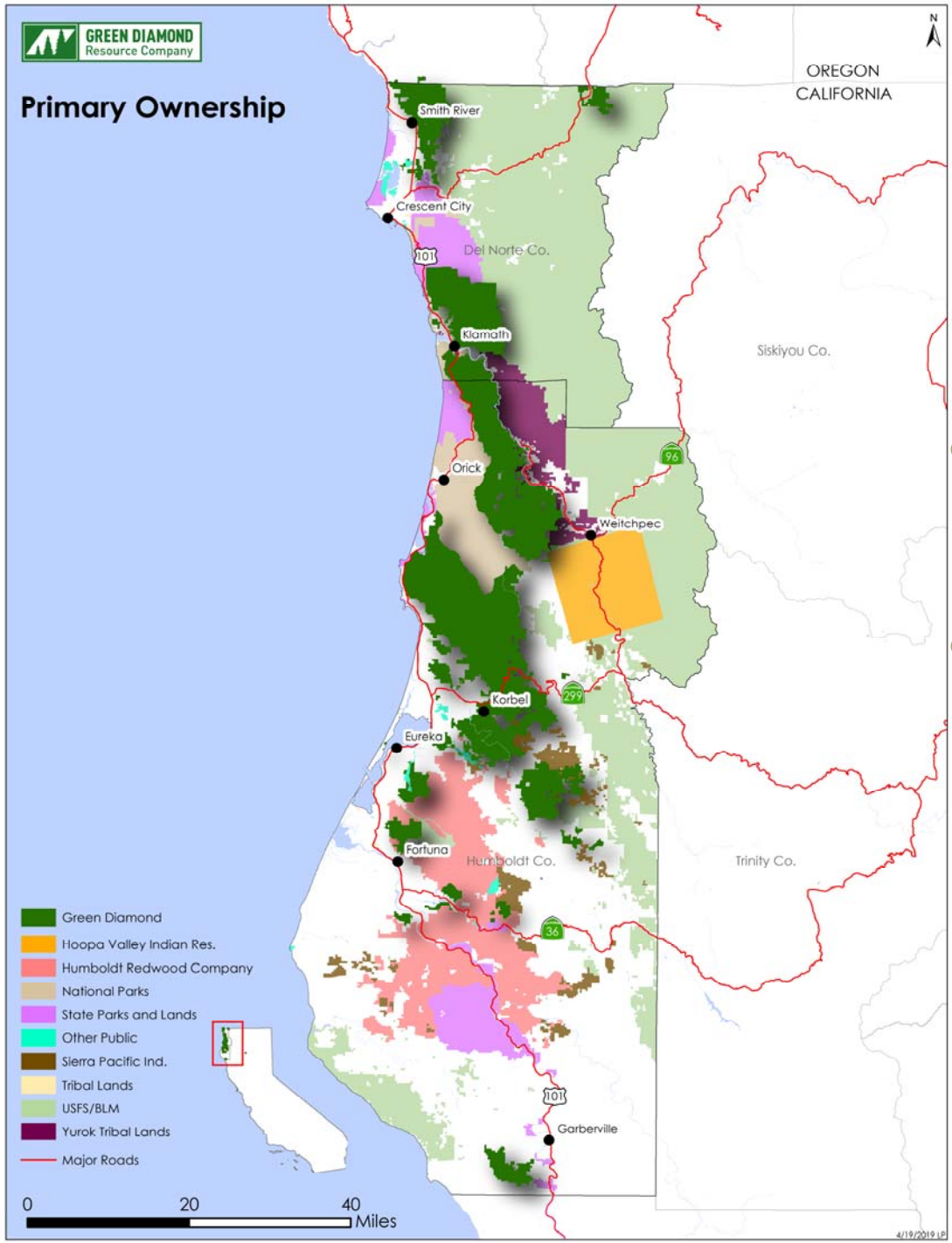
Largest NSO dataset in existence: >1,900 individual captures, >4,000 capture/recaptures

Forest HCP Covered Species

Northern Spotted Owl

Fisher

Red and Sonoma tree voles



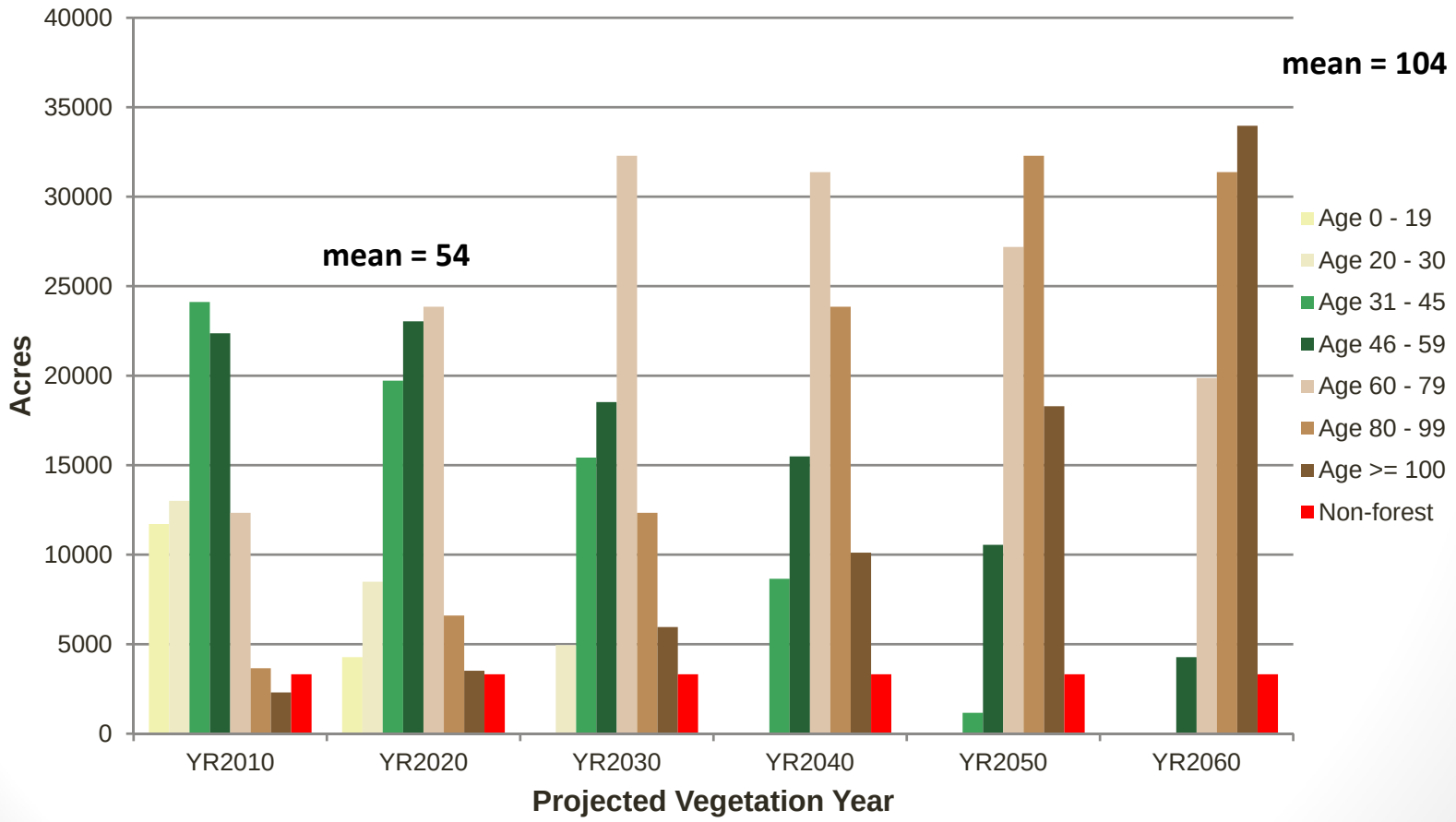
Primary Ownerships Northwest CA

- Initial Plan Area - ~357,415 acres
- Adjustment Area - ~339,667 acres
  - >15% expansion or contraction of IPA = HCP major amendment

Goal One: Promote Habitat Mosaic

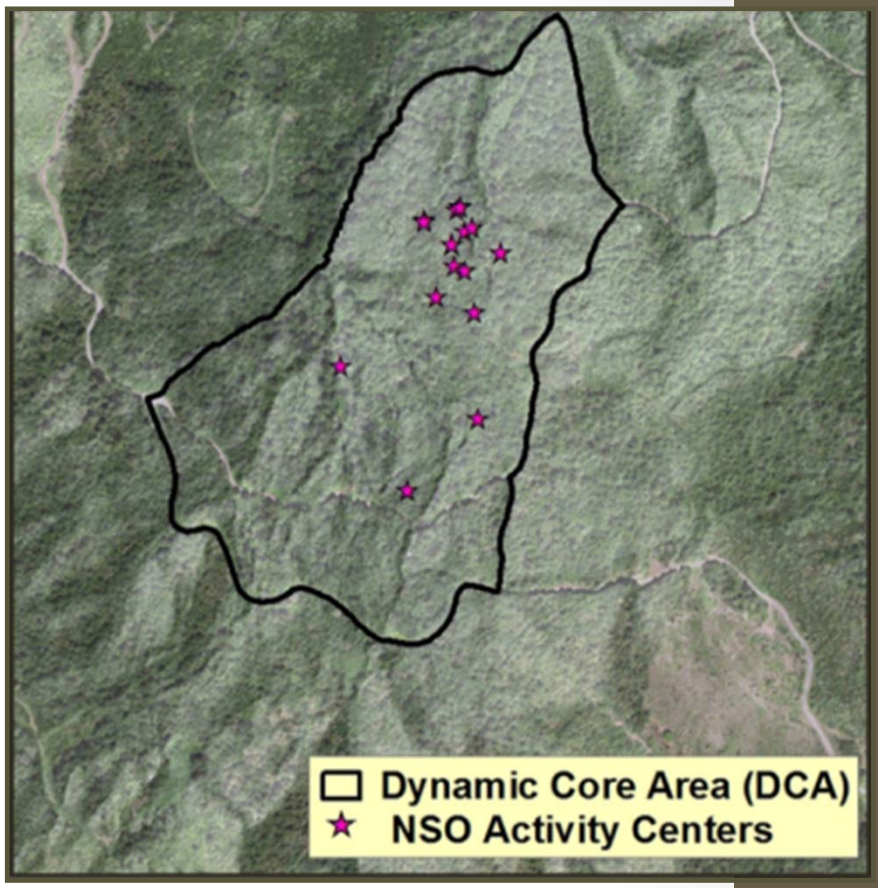
- Application of CA Forest Practice Rules and Harvest Planning
- AHCP Riparian and Geological Management Measures
- Protection of Highly Functional Spotted Owl Sites termed Dynamic Core Areas (DCAs)

Projected Forest Age Class Distribution within Riparian Management Zones



Dynamic Core Area Strategy

- No take
  - Sites within DCA managed to include 0.5-mile circular buffer (502 acres)
  - 89 acres 46+
  - 233 acres 31+
- Harvest within the home range (0.5 mile buffer) but outside of DCA is allowed
  - Maintain 'no take' habitat thresholds
  - Harvest adjacent to DCA boundary with double the FPR adjacency constraints
    - 6 years old or 10 feet tall



Goal Two: Retain and Recruit Habitat Elements

- Apply TREE (**T**errestrial **R**etention of **E**cosystem **E**lements) guidelines in all harvesting units
- "Wildlife Scorecard" Trees
- 2 evergreen hardwoods per acre
- snags and existing downed wood

Examples of Ecological 'Nuclei' for Legacy Retention

Large downed logs, especially hollow logs.

Large snags for woodpeckers, and as a source for future downed woody material.

Large living trees of low economic value. Such trees often have high ecological value.

Small retention patches (0.1 – 0.5 acres) can provide the same features as single trees, and provide habitat for sensitive mosses, lichens, insects. Small patches may be used by small and large vertebrates as "stepping stones."

Single trees can provide nesting habitat for raptors and woodpeckers, provide substrate for tolerant lichens, and become future large snags and eventually fallen logs.

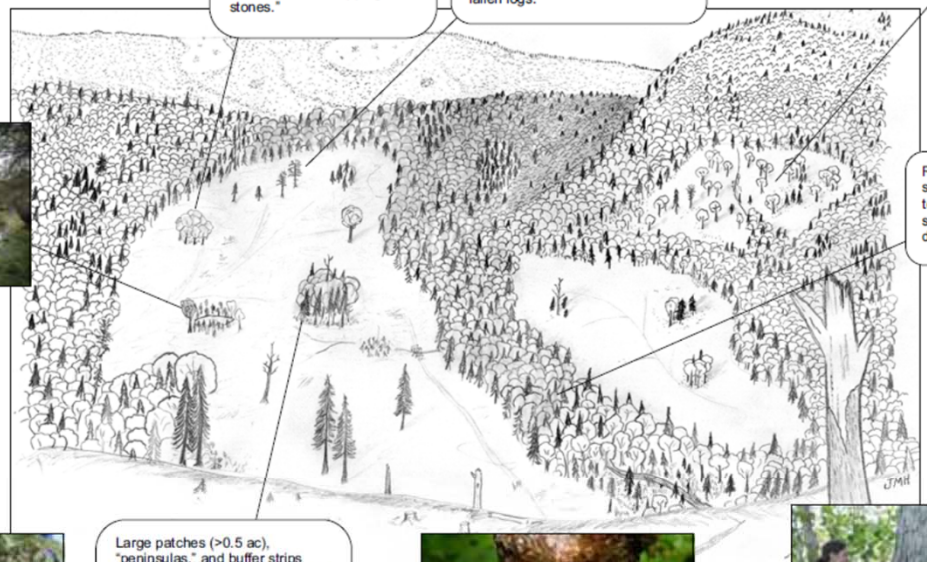
Den trees.

Even in shelterwood cuts or selection cutting systems, important ecological legacies can be conserved with legacy retention.

Pockets of softwood in hardwood stands (or pockets of hardwood in softwood stands). Alternatively (or in addition to), pockets of trees representative of the former stands.

Rare plants.

Forested wetlands, including vernal pools, woodland seeps and springs, and sections of small headwater.



Riparian buffers can provide many of the same features as large patches, in addition to protecting water quality and perhaps serving as corridors for plant and animal dispersal.

Smooth-bark beech trees for mast and to help propagate disease-resistant strains of beech.

Uncommon plants that indicate a rich site with good soils.

Large trees with mosses, lichens, or fungi that indicate old stand age. A few easily identifiable species can be used as a guide.

Large patches (>0.5 ac), "peninsulas," and buffer strips separating clearcuts can provide the same features listed for small patches, plus habitat for old-forest lichens, mosses, and insects. Large patches are ecologically efficient when there is a cluster of features of high ecological value.

Decaying trees with fungus.

Old decadent trees with a heavy epiphyte load.

Trees with fresh cavities indicating recent use by woodpeckers or other cavity-dependent species.

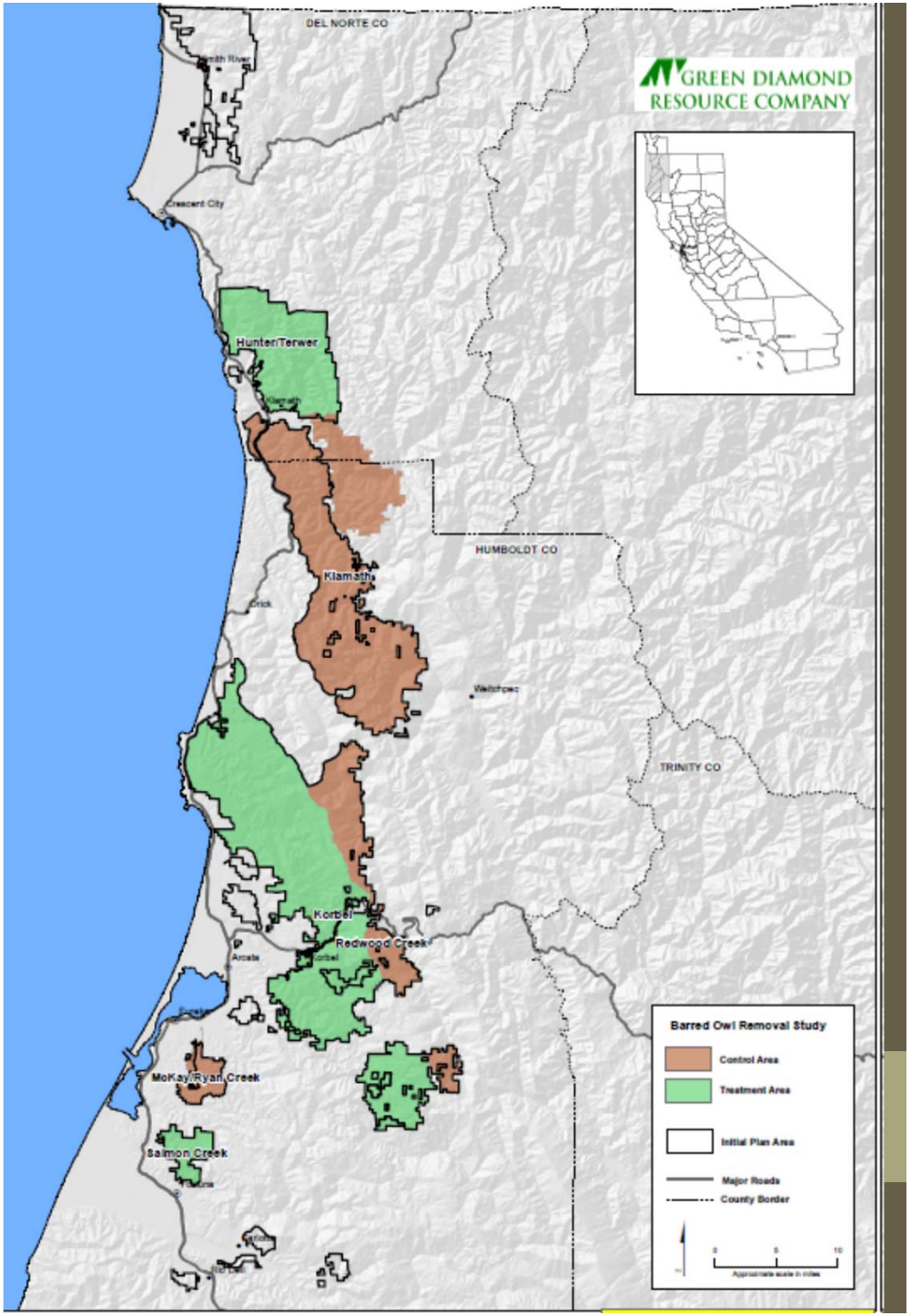
Source: Whitman and Hagan 2003

Goal Three:
Protection of Covered Species

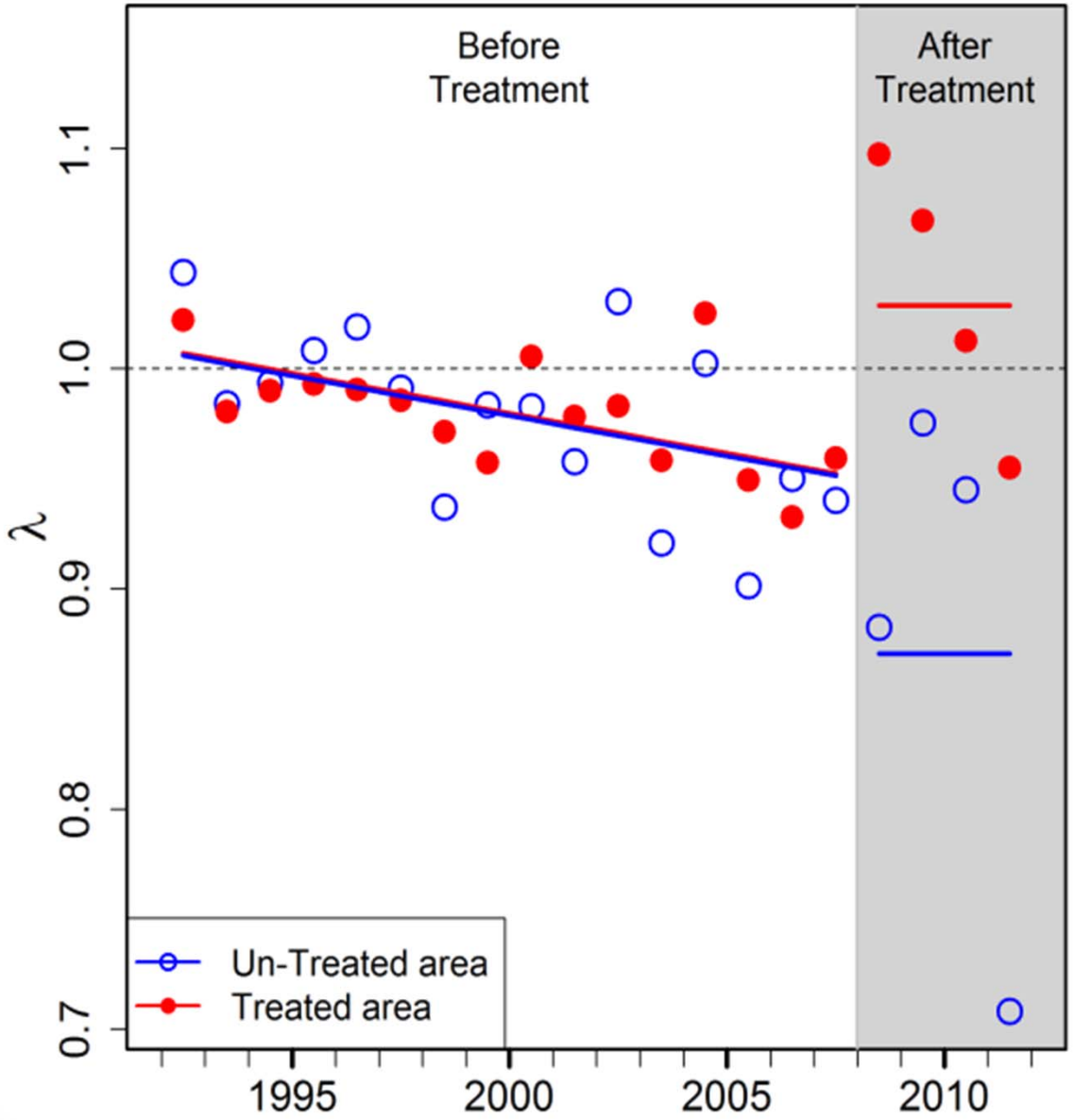
- NSO
  - Pre-harvest surveys and demographic monitoring
  - Seasonal protection for nesting owls
  - Prevent/remove marijuana cultivation and rodenticides (all covered species)
- Fisher
  - Retention of denning habitat through TREE
  - Prevent entrapment/drowning in water tanks
  - Protection of active dens if discovered
- Tree Voles
  - Retention of nesting habitat through TREE
  - Identification and retention of nesting habitat in riparian areas

Barred Owl Removal Experiment Study Design

- BACI design with all BOs removed from treatment areas while they are undisturbed on control areas
- Pilot removal experiment initiated in 2009 on GD NSO demographic study area
- Response variables: NSO occupancy, survival and fecundity



Rate of Population Change



Mean = 1.029

Significant p = 0.0004

Mean = 0.870

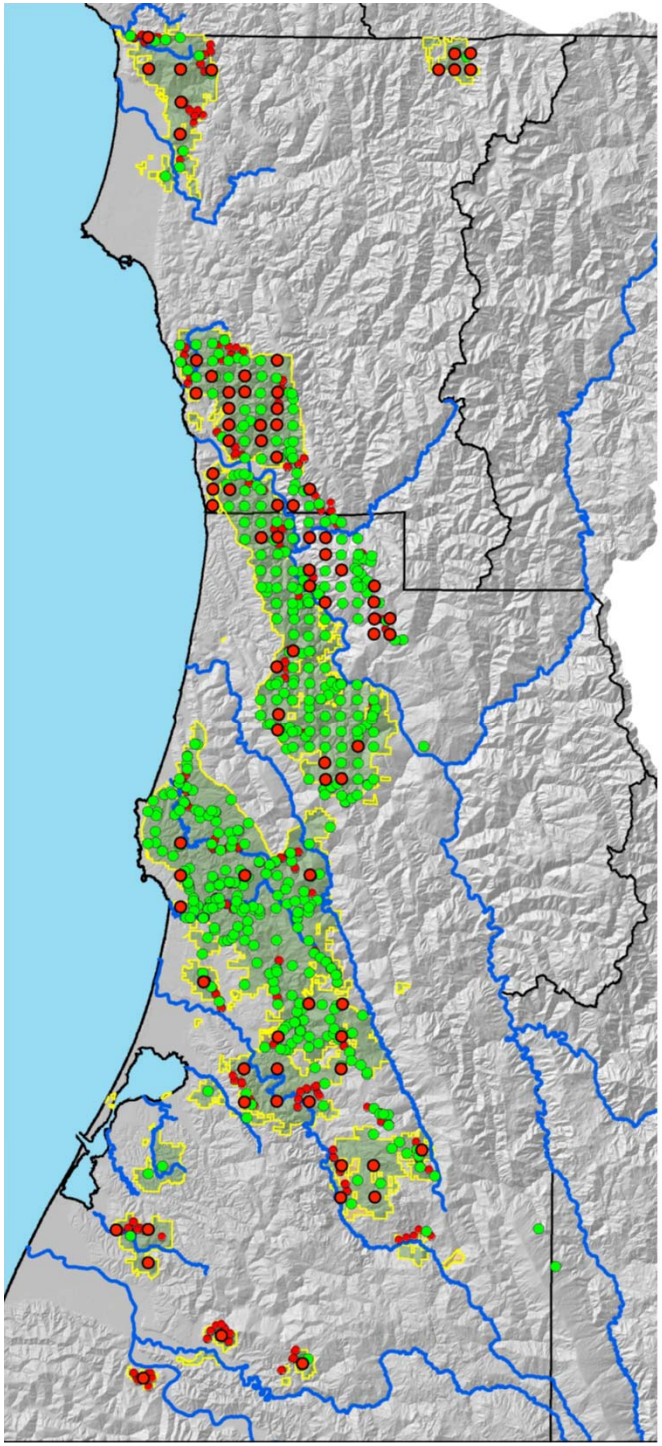
Goal Four: Barred Owl Research


Barred owl

- Phase One: Pilot Barred Owl Removal Experiment in half of ownership 2009-2014 (Diller et al. 2016)
- **Phase Two: Experimental Barred Owl Removal within the Plan Area**
- **Phase Three: Invasion and Coexistence Experiment**

Goal Five: Compliance, Validation, Monitoring, Adaptation

- NSO
  - Full demographic monitoring until model validation – then switch to occupancy surveys and sample of fecundity and take.
  - Adaptive management reserve acres for additional DCAs
- Fisher:
  - Occupancy surveys of ½ the ownership every 5 years
  - Develop or refine occupancy model within 5 years
  - Adaptive management reserve funding based
- Tree voles
  - Sample NSO pellets use occupancy analysis (detection dogs?)
  - Adaptive management reserve funding based



Distribution of fisher detections from surveys and incidental sightings on CA ownership from 1994-2019


Questions?