

**Forest Ecology and
Living in the Woods
Upper Langunitas Creek
Watershed
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Goals

- **1 preserve and improve habitat conditions**
- **2 promote ecosystem resiliency through rehabilitating natural processes**
- **3 correct and avoid activities that degrade habitat**
- **4 sustain the character and quality of life in San Geronimo Valley**

Today

biological character of the watershed and the “working forests” of the San Geronimo Valley

basics of ecology in one word
“Clorpt” (invented by Arnold Shultz)

What we can learn from the Z’berg Nejedly Forest Practice Act and the Forest Practice Rules

People and houses (Added complexity): The wildland urban interface (WUI) and issues

The field trip

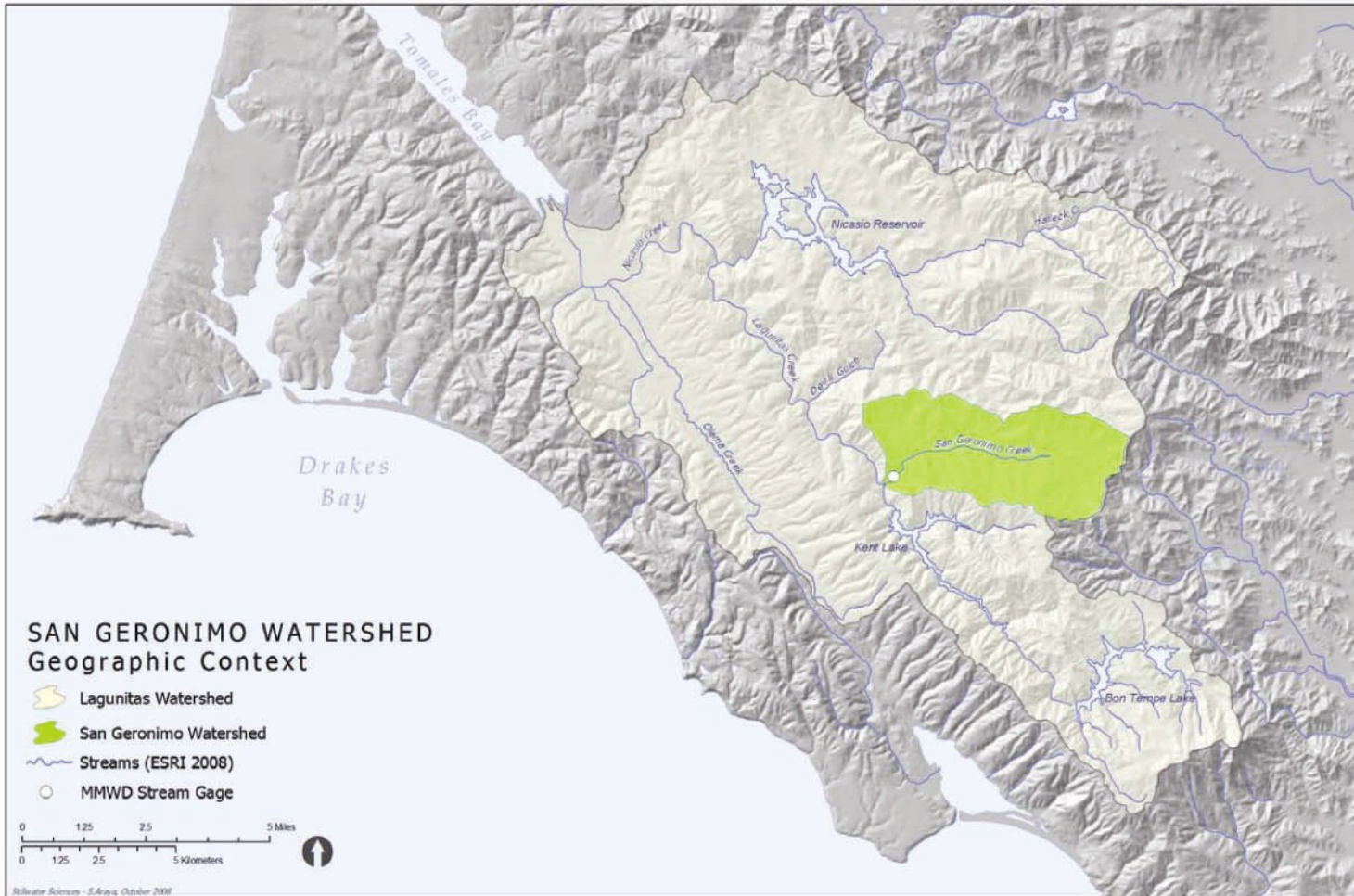


Figure 1-1. Watershed location map.

SAN GERONIMO WATERSHED Biological Conditions III - Vegetation

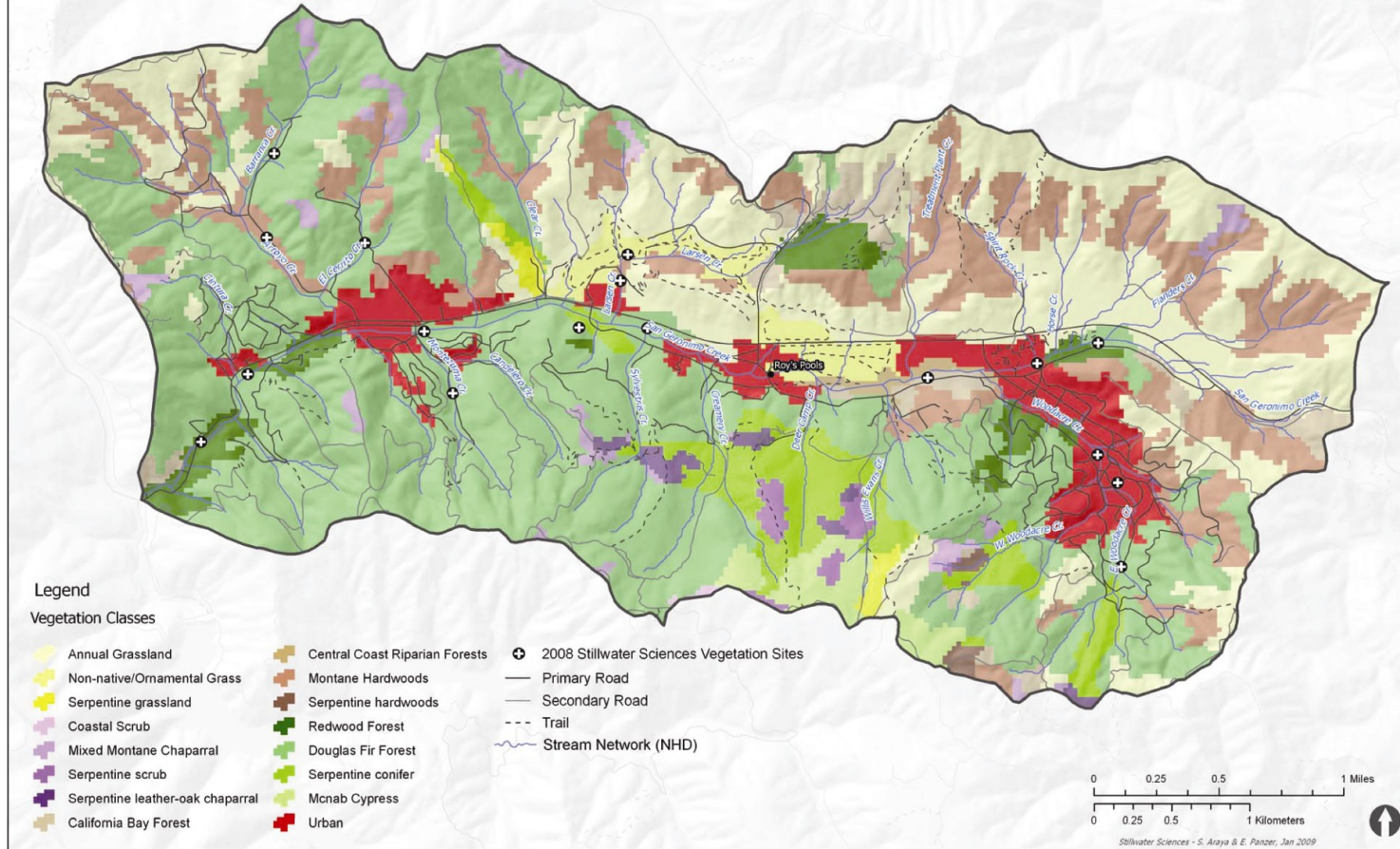


Figure 3-11. Biological Conditions I - Vegetation.

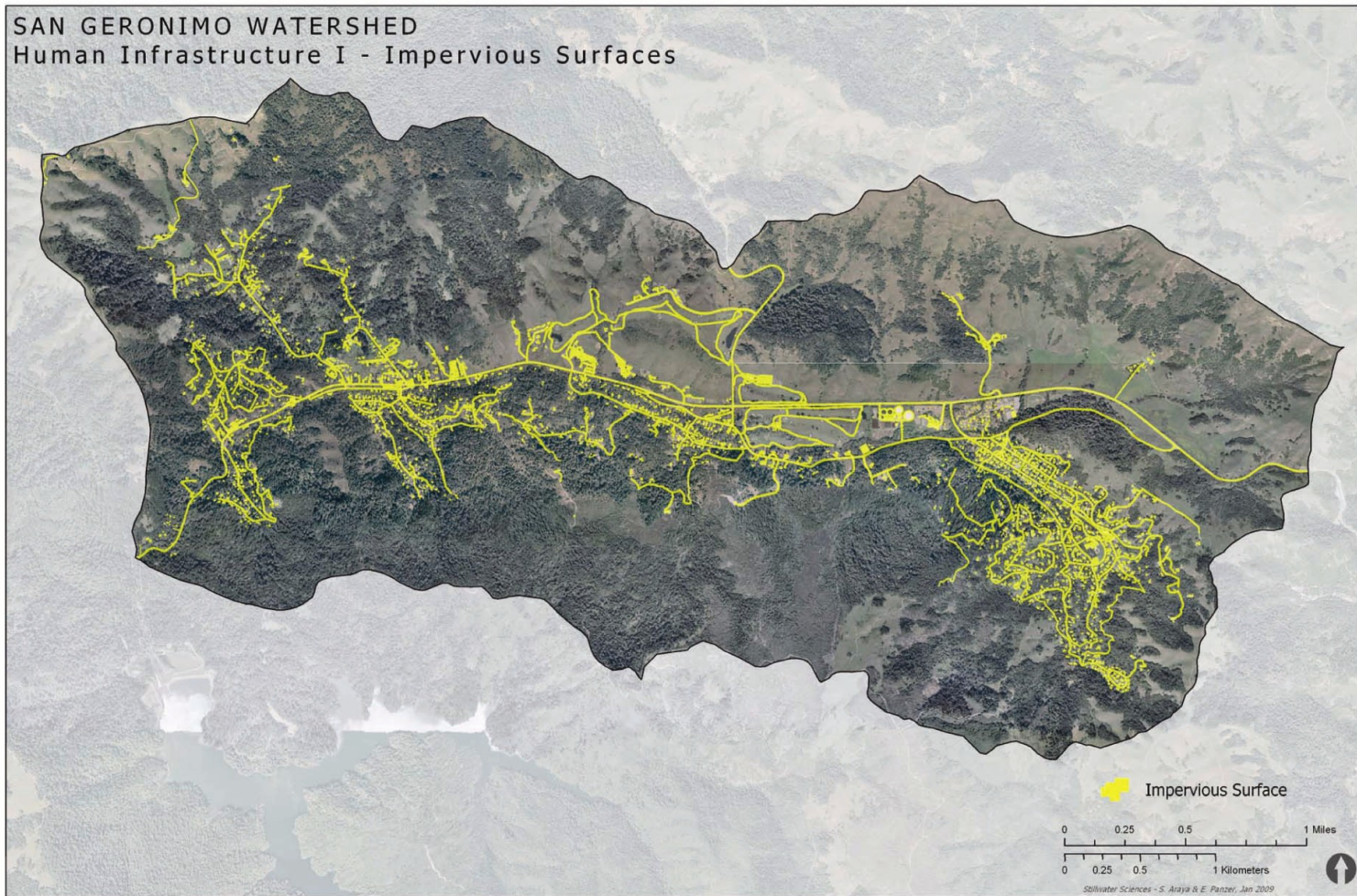


Figure 3-2. Human Infrastructure I - Impervious Surfaces.

Redwood & Douglas-fir Forests



Upland Woodlands and Mixed Evergreen Forests



28.10.2008

Serpentine



Basics of Forest Ecology when living in the forest:

$$\text{Ecological condition} = f(\text{Cl, o, r, p, t})$$

Where...

- *Cl = Climate and Microclimates (includes fire, weather)*
- *O = Organism. Native and non-native flora and fauna*
- *R = Relief, topography*
- *P = Parent Material / geology*
- *T = Time*
- All ecological succession is irreversible leading to steady state or “climax” succession (e.g. old growth forest)
- Change can be gradual or catastrophic, like fire or flood but is inevitable

Forest Structure: The Rockefeller Grove Benchmark



In ecological terms, San Geronimo is a highly disturbed mix of mostly native vegetative communities , watershed and wild lands, and People are here to stay



CALIFORNIA FOREST PRACTICE RULES 2010

*Title 14, California Code of Regulations
Chapters 4, 4.5 and 10*

with the
Z'BERG-NEJEDLY FOREST PRACTICE ACT;
Pertinent Excerpts from
PROTECTION OF FOREST, RANGE AND FORAGE LANDS -
PROHIBITED ACTIVITIES
and the
WILD AND SCENIC RIVERS ACT;
the
PROFESSIONAL FORESTERS LAW and REGISTRATION OF PROFESSIONAL
FORESTERS RULES,
and with information related to
FOREST ROADBED MATERIALS

Prepared for:
California Licensed Timber Operators
and California Registered Professional Foresters

Compiled by:
The California Department of Forestry and Fire Protection
Resource Management, Forest Practice Program
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See Also, CAL FIRE's Web Site's Home Page, at www.fire.ca.gov

Arnold Schwarzenegger
Governor
State of California

Beneficial use of water

Roads / erosion control

Sustainable forests

“Silviculture”

Endangered Species

Archaeology & historical

Insects and disease

Fire

Cumulative impacts

Protect Beneficial Uses of water

Water quality

Domestic water supplies

Lagunitas Creek riparian corridors provide spawning habitat

State and Federal parks and Tomales Bay downstream

Groundwater

Minimize sediment transport in storm “events”



Roads are the major contributors to erosion and sediment transport





Armoring high risk erosion sources



...Sustainable forests

**Protect biodiversity
and**

Endangered species

FISH

OWLS

Murrelets

and much more

*(27 or more rare
Species of plants
In the MMWD
Watershed!!)*



..sustainable forests

Protect habitat for wildlife.

(This the the bald eagle nest on Kent Lake, along with 30 osprey nests that produce offspring each year)



...sustainable forests

Control invasive species



...Sustainable forests

Silviculture

“manage” the forest

***evenaged?**

***unevenaged**

**Fire safe vegetation
management**

**Fire ecology. These forests evolved with
regular fire.**

Understand Forest History

Pre 1849

1849-1938

1938 to now

The future?



Courtesy Rig Currie

Insect and disease: Sudden Oak Death, and much more...



..sustainable forests Cumulative impacts are complex and permanent



What do we do to sustain the San Geronimo Valley forests and sustain communities?



**PROTECTING
FAMILIES AND FISH!**

SGVSTEWARDS.ORG

Wildland Urban Interface “WUI”: *added complexity*

mimic natural processes and take a long term view

manage tree diseases

SOD and new gold spotted oak borer is moving north!

neighbors’ concerns about *your* trees

excavation & utilities



Wildland Urban Interface “WUI”: *added complexity*

Landscaping enhances property values

Create and enhance views

Create habitat that invites birds and wildlife to your home

Reduce outdoor irrigation needs

Garden to minimize chemicals and

Protect “external” wildlife habitat corridors



Wildland Urban Interface “WUI”: *added complexity*

Be Firesafe: Calfire says 100 ft and sometimes more!

Hazard trees, managing “stands” of trees to withstand winds

Landscape with natives & planting trees, shrubs and perennials

Watering under oak trees and other conflicts with natives

Protecting your trees’ roots and below ground fauna.

Avoid invasive plants





**Maintain healthy
trees around
houses & seek advice**

**Understand
Unevenaged forests.**

**Shade tolerance
New trees, old trees**

Maintain canopy layers ... avoid “ladder fuels” in high hazard areas



Reduce and plan for runoff from roads



Maintain riparian buffers along all watercourses



Landscape to increase stormwater infiltration

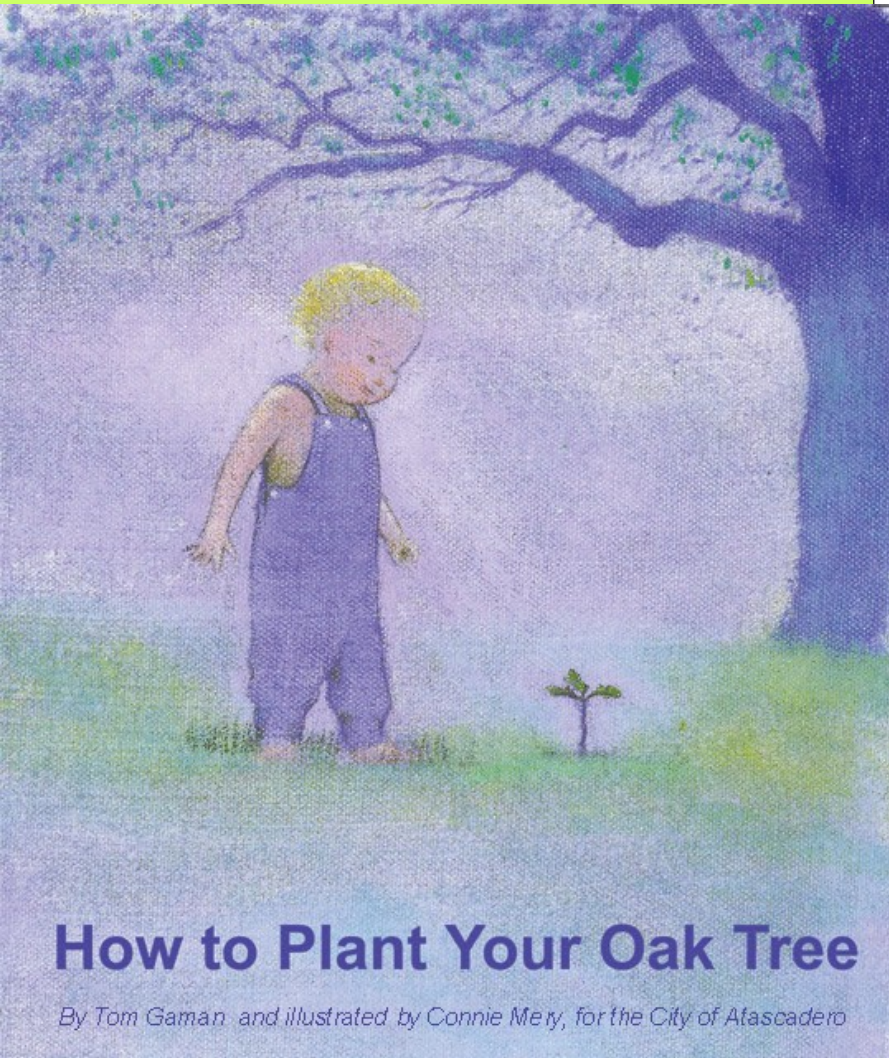




Adaptive Management



Plant the right tree or shrub



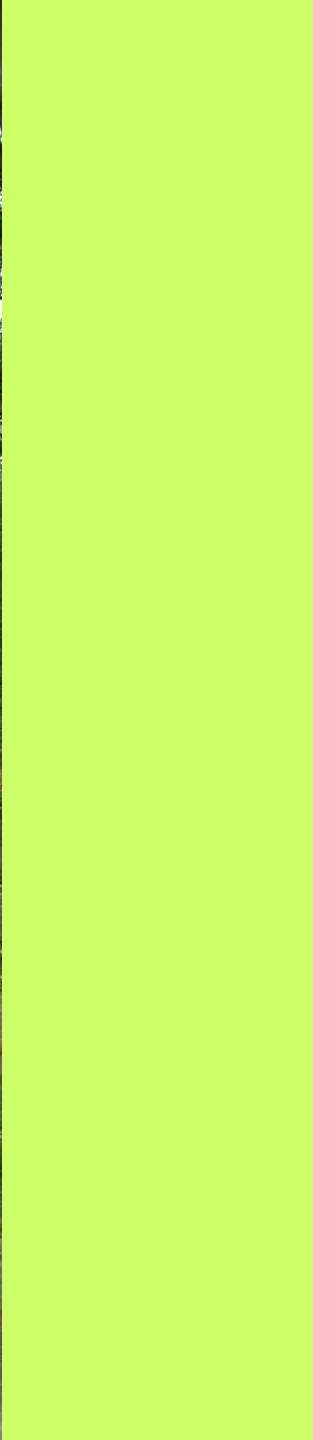
How to Plant Your Oak Tree

By Tom Gaman and illustrated by Connie Mery, for the City of Atascadero

in the right place so it will thrive.



We were brought here by the Atascadero Native Tree Association to become part of a new generation of native trees in Atascadero, and now we're yours! I am a valleyoak/blue oak, grown from an Atascadero acorn. I was grown in a nursery and I am one or two years old. Corny here came from an oak tree in Atascadero this year.



Buckeye



Madrone



Oregon ash (native to Langunitas Creek watershed)





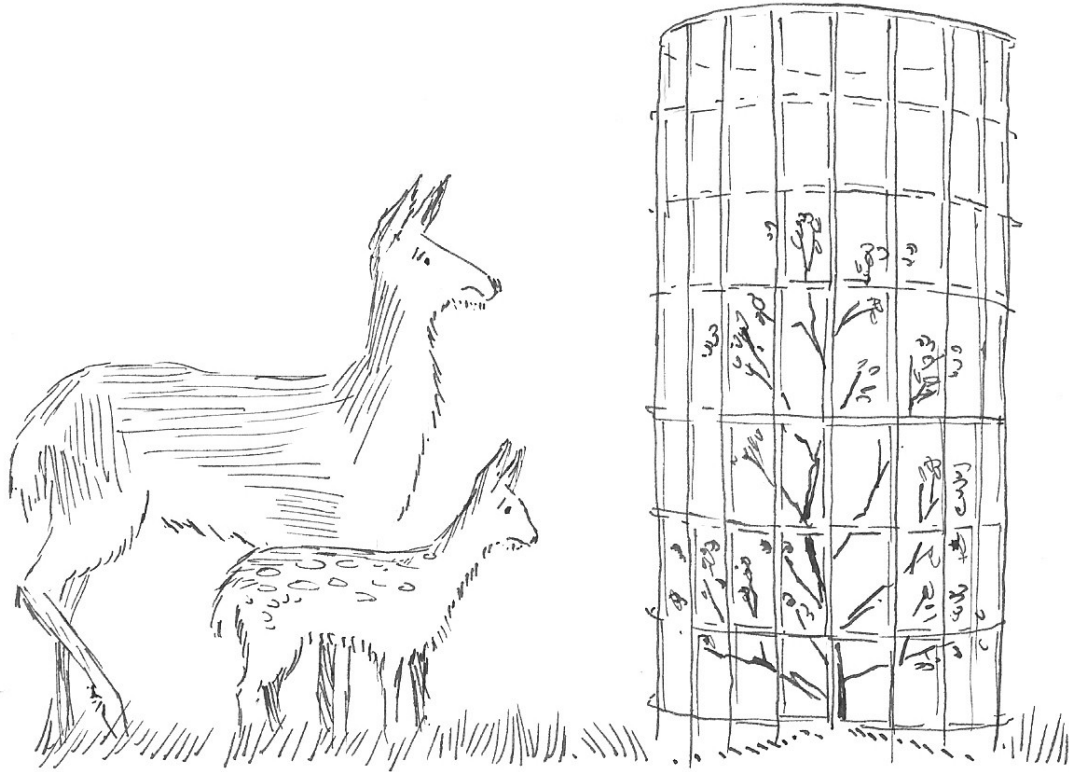
28.10.2008



Plant Coffeeberry Marin manzanita Ceanothus or native ground cover uva ursi



Protection and care are vital for young seedlings and saplings



I'll need protection from deer, dogs, and other critters: if you put a little fence around me, that would be great. The 3 inch mulch will keep the soil loose and make it easy for you to pull up weeds around me.— please keep me weed-free.



**Protect and
enjoy
your forest**

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Cumulative effects



Reduce runoff

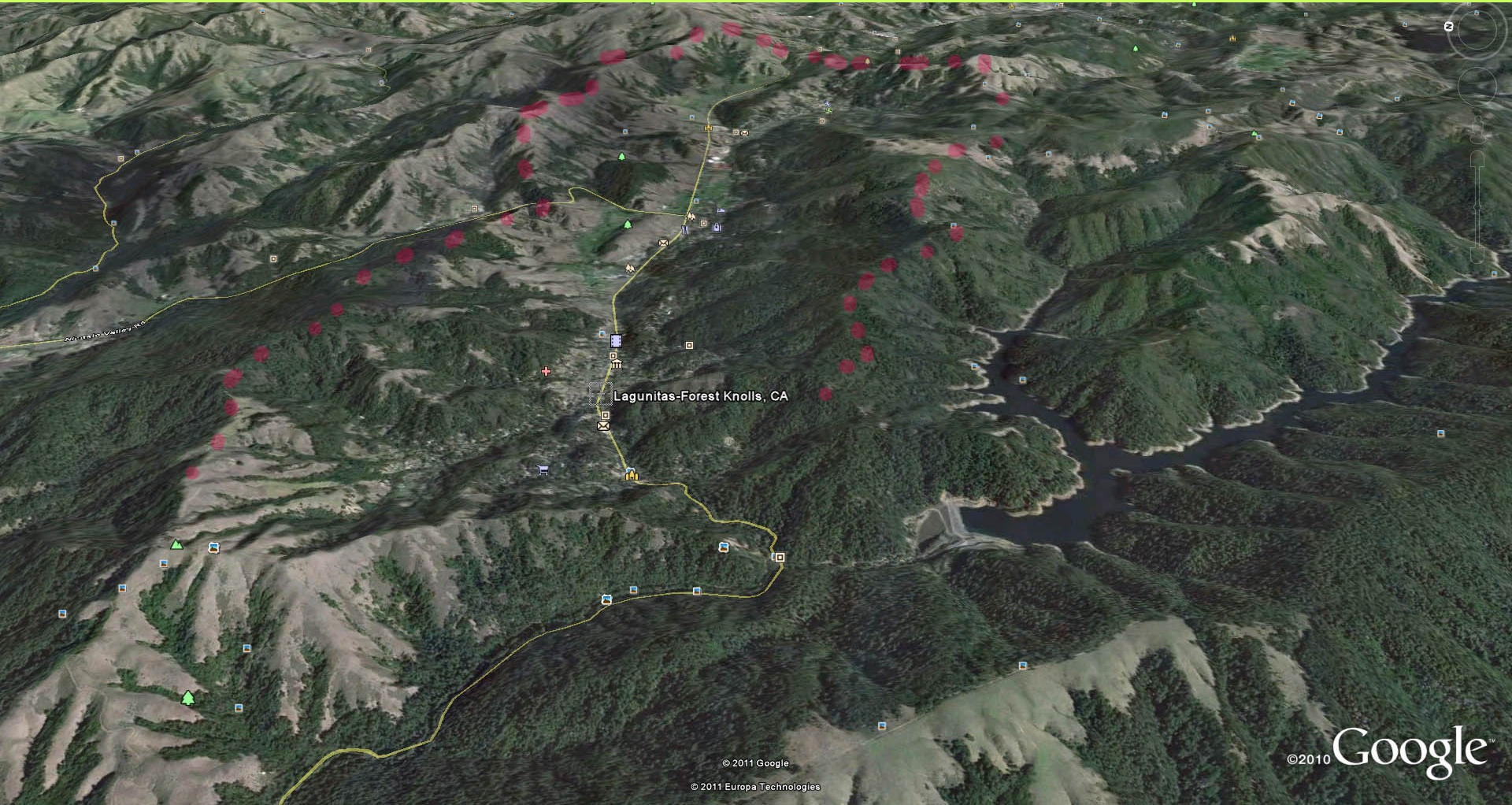








The watershed



...sustainable forests... Maintain and protect biodiversity



....Sustainable forests
Forest products
Habitat
Trees for the future

Silviculture (the growing of trees)
“manage” the forest
*evenaged?
*unevenaged

Lands of HRC in 2007



28: 21.2.2 S.JPG



29: 21.2.2 W.JPG



30: 21.2.3 N.JPG



31: 21.2.3 S.JPG



32: 21.2.4 N.JPG



33: 21.2.4 S.JPG



34: 21.2.5 N.JPG



35: 21.2.5 S.JPG



36: 21-3.1N.JPG