

Nature Reserve of Orange County (NROC)
Technical Advisory Committee (TAC)
Minutes of Special Session

Date: May 25, 2006
Time: 1:00 p.m.
Location: Irvine Ranch Water District
15600 Sand Canyon Avenue
Multipurpose Room
Irvine, CA

Meeting was started at 1:00 p.m. by committee chair Milan Mitrovich.

The following members of the TAC were present at the meeting:

Trish Smith, The Nature Conservancy
Jon Keeley, UC Los Angeles
Allan Schoenherr, Fullerton College
Kathy Keane, Biological Consultant
Will Miller, US Fish and Wildlife Service
Brad Henderson, California Department of Fish and Game
Sharon Heider, City of Irvine
Milan Mitrovich, Nature Reserve of Orange County
Lyn McAfee, Nature Reserve of Orange County

No members of the TAC were absent.

The following invited guests of the TAC were present:

George Ewan, Orange County Fire Authority
Gordon Martin, US Forest Service
Brian Shelton, California Department of Fish and Game
CJ Fotheringham, UC Los Angeles
Rick Halsey, Chaparral Institute
Lisa Markovchick-Nicholls, San Diego State University
Albert Lucero, County of Orange

The purpose of the special session was to identify issues, strategies, and partnerships necessary to develop a management plan for protection of the Sierra Peak population of Tecate Cypress. The following is an outline of the ideas presented during the special session meeting. Meeting was adjourned at 4:00 p.m.

Fire History

The geographic area occupied by the Sierra Peak population of Tecate Cypress (*Cupressus forbesii*) was burned in wildfires occurring in 1911, 1948, 1967, 1982, 2002, and 2006. Because the entire stand was not burned in each fire, fire history varies across the stand. Based on the information available, over the last century approximately 50% of the stand has burned at intervals of 37, 19, and 35 years; 40% of the stand has burned at intervals of 37, 19, 15, and 20 years; 5% of the stand has burned at intervals of 37, 19, 15, and 24 years; and 5% is estimated to have escaped wildfire by being located in strategic areas (i.e. areas of bare rock) known not to carry fire well. Following the most recent fire, the Sierra Fire of winter 2006, the estimated age of approximately 95% of the entire Sierra Peak population of Tecate Cypress is 4 years or less.

Conservation Concern

The Sierra Peak population is of conservation concern because Tecate Cypress are obligate seeders (i.e. recovery of a population following wildfire occurs only from seed), requiring fire intervals of at least 30 years to allow for production of a seed bank large enough for full replacement of a burned stand to occur. Fires occurring at shorter time intervals result in lower levels of recruitment, leading to diminishment of the size of the stand, and eventual extinction of the population. Historic fire interval has already likely caused the stand to be diminished in size and with the frequency of wildfire increasing within southern California due to human activity, the likelihood that wildfire will once again burn the stand over the next 20 to 30 years is very high.

Tecate Cypress Management Plan

A multi-agency/landowner management plan for the Tecate Cypress is considered necessary to identify strategies that can be implemented to either minimize the threat of repeat fire or aid in stand recovery following a wildfire event. The success of the plan will require development of inter-agency partnerships, and the support and participation of the public. Basic tenets of the proposed plan as discussed at the special session meeting of the TAC follow.

1) Map Existing Conditions

We have a poor understanding of the current distribution of Tecate Cypress. No information exists describing the distribution of trees by size class. Existing maps of the geographic distribution of the stand (developed in the middle 1980s and early 1990's) show large disagreements and do not include known satellite populations. Mapping of the existing conditions (specifically the present-day distribution of trees by size class) will help identify important refugia for the population, and likely involve use of aerial photos, Landsat imagery, as well as onsite surveys. Mapping of the proportion of trees burned in the Sierra Fire with cones will also add to our understanding of the level recruitment to expect following the most recent fire.

2) Develop Tactical Fire Plan

Working directly with fire fighting professionals, an independent contractor or Nature Reserve personnel will develop a draft tactical fire plan for the area inhabited by Tecate Cypress. Draft is to be reviewed by ecologists, as well as representatives of local landowners. Development of the plan will likely require multiple site visits by resource ecologists and fire-fighting personnel. Mapping of the fuel distribution within the planning area is considered essential for taking a threat based perspective in development of the plan. Given opportunities and strategies for fighting fire differ considerably depending on weather conditions (i.e. wind speed and direction, and humidity level) the plan will need to identify the specific strategies for use under normal onshore conditions and the strategies for use under Santa Ana conditions.

An approved plan might include: establishment of fire breaks along highway 241 and continued use of breaks along highway 91; fuel modification at strategic locations on the perimeter and within the stand; description and designation of local anchor points (to be used by firefighting personnel) within or adjacent to the stand; discussion of specific fire fighting techniques to be used (e.g. where and when is the use of backfires and/or bulldozers is permitted); placement of onsite signage indicating the stand is of conservation value; and improvement of stand accessibility.

Following completion of the plan it will be necessary to: secure agreements between local landowners and fire-fighting personnel to complete pre-suppression work identified within plan; get the plan disseminated to all local fire fighting agencies (Orange County Fire Authority, California Department of Fire, US Forest Service); and working directly with fire fighters located at the future Mountain Park development site (as they will likely be first responders in the case that a fire threatens the stand).

3) Increase Security

Minimize the amount of human traffic within wildland areas during extreme fire danger weather conditions (i.e. Santa Ana Winds) by denying public access to these areas at these times. Increase the frequency of patrols on trails and roads during extreme fire danger weather conditions (note: all historic fires that impacted the Tecate Cypress population occurred during Santa Ana Wind conditions).

Develop a communication network between security agents for each of the major landowners (Department of Fish and Game, State Parks, US Forest Service, and The Irvine Company) present within the planning area (this effort is considered important for improving security through coordinating patrols and shortening incident response times).

Establish a group of trained volunteers to be a presence at entry points into wildlands during extreme fire danger weather. Volunteers are to observe and record human entry into wildlands, reporting any observed illegal entry or activity to the security agents. Volunteers are not to confront people suspected of illegal activity but instead notify contacts within the established security network. A greater human presence, with high

visibility will likely minimize chance of arson, accidental ignition of wildfires from illegal campfires, illegal use of motorbikes or other all-terrain vehicles, or the presence of disoriented hikers/hunters. Volunteers will also be able to provide an early warning if a fire does start during observational periods.

4) Development of Seed Bank

Development of a seed bank for the preservation of genetic plant material will require that seeds are collected from the cones of mature trees located in areas (e.g. cliff faces and drainages) that escaped being burned in the last series of wildfires that occurred within region over the last 30 years. Collected seeds can be stored at facilities run by the Zoological Society of San Diego to ensure preservation of genetic material unique to the Sierra Peak population [see Truesdale and McClenaghan (1998) for a description of the genetic diversity present within the stand]. Because the life span of seeds is unknown and seeds might lose their viability after 5, 10, or 15 years, new seeds will be required to be deposited in the bank at intervals that ensure seed viability is maintained.

Development of a living seed bank will require the use of collected seeds to establish multiple groves of Tecate Cypress in developed and/or manicured landscapes of the county. Agreements with local landowners will be required to allow for establishment of the groves. Collected seeds will need to be provided to contracted local nurseries (e.g. Tree of Life) or an onsite (i.e. Nature Reserve) greenhouse or nursery to allow for the production of seedlings for use in establishment of groves. Tecate Cypresses are known to grow well under controlled conditions, needing little water and general maintenance once seedlings become established, suggesting the amount of resources needed to maintain a grove once established will be small.

Possible locations for the groves include the proposed landscape areas of the Great Park, public space within the planned Mountain Park Development, and existing areas within Irvine Regional Park. Placement of signage in high profile areas associated with the groves will likely contribute significantly to community education, raising awareness about the conservation issues associated with protecting Tecate Cypress and other sensitive plant communities from the threat of repeat wildfire occurring at short time intervals (i.e. less than 30 years).

Establishment of groves will allow for establishment of a living seed bank (note: seeds are protected by cones that remain in the canopy of trees until opened by heat) to be used as insurance in case the Tecate Cypress stand is burned multiple times within a short time interval and natural recruitment is very low. Following a short fire interval, seeds collected from off-site groves would be dispersed strategically (to minimize competition with conspecifics and maximize dispersal into known refugia) within the historic range of the Tecate Cypress Stand.