Natural Hazard Disclosure State

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Background

Civil Code Section 1103(c)(3) requires real estate sellers to inform prospective buyers if a residential property lies within a Very High Fire Hazard Severity Zone (VHFHSZ). After the disastrous firestorm in the Oakland-Berkeley Hills in 1991, the Legislature required CDF to identify VHFHSZ within the LRA and send the resulting information to the affected cities, counties, and fire districts. Within 30 days after receiving a transmittal from the CDF director that identifies VHFHSZ, a local agency shall make the information available for public review. The information shall be presented in a format that is understandable and accessible to the general public, including, but not limited to, maps (Government Code 51178.5).Local agencies were required to designate, by ordinance, VHFHSZ in their jurisdictions following the identification of these areas by CDF, but were exempt from this requirement if they adopted or already had ordinances before December 31, 1992 that were equivalent to or more restrictive than the state standards (Government Code Section 51179). According to Civil Code Section 1103.2(a), the NHD Statement form, disclosure is required for VHFHSZ pursuant to either Section 51178 or Section 51179 of the Government Code. If a local agency with a VHFHSZ identified pursuant to Section 51178 has not designated the zone pursuant to Section 51179, disclosure would still be required, but the defensible space requirements of Section 51182 may not apply unless locally required pursuant to another code.

| NHD Home | CERES Home | Webmaster |

Geologic Hazard Abatement Districts

(From the July 1986 Issue of CALIFORNIA GEOLOGY magazine)

by Robert B. Olshansky

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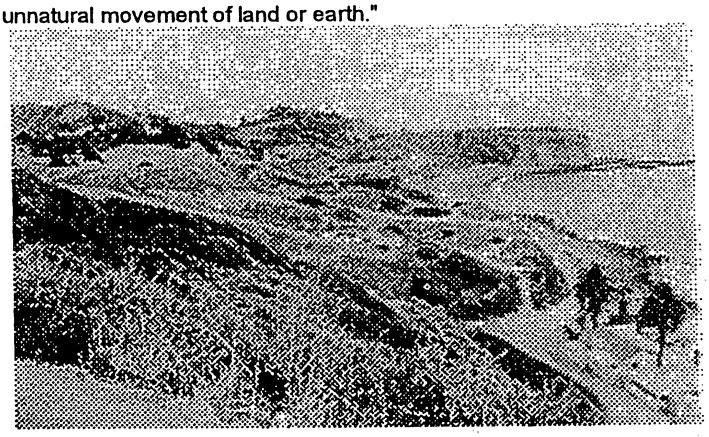
Original reference: Olshansky, Robert B., 1986, Geologic Hazard Abatement Districts: CALIFORNIA GEOLOGY, v. 39, n. 7, p. 158-159.

Geologic Hazard Abatement Districts (GHAD) enabled by the Beverly Act of 1979 (SB 1195), are potentially useful financial mechanisms for reducing hillslope hazards (Kockelman, 1986). The enabling statute, (Division 17 of the Public Resources Code, Sections 26500 - 26654) provides for the formation of local assessment districts for the purpose of prevention, mitigation, abatement, or control of geologic hazards. The Act broadly defines "geologic hazard" as "an actual or threatened landslide, land subsidence, soil erosion, earthquake, or any other natural or unnatural movement of land or earth."



Abalone Cove landslide, Rancho Palos Verdes, Los Angeles County. The toe of the landslide is at the shoreline. The Abalone Cove Landslide Abatement District was formed in January 1981, and was the first district formed after the Beverly Act of 1979. Photo by Martin L. Stout.

A GHAD may be proposed by one of two means: (1) a petition signed by owners of at least 10 percent of the real property in the district, or (2) by resolution of a local legislative body.

PLAN OF CONTROL

A proposal for a GHAD must be accompanied by a "plan of control", prepared by a certified engineering geologist, "which describes in detail a geologic hazard, its location and the area affected thereby, and a plan for the prevention, mitigation, abatement, or control thereof" (Section 26509). The land within a district need not be contiguous; the only requirement is that lands within a GHAD be specially benefited by the proposed construction and that formation of a district is required to ensure the health, safety, and welfare of the residents.

LOCAL DISTRICT ORGANIZATION

The Act requires public hearings prior to district formation. If owners of more than 50 percent of the assessed valuation of the proposed district object to the formation, the legislative body must abandon the proceedings. If there are few objections, the legislative body may form the district, initially appointing five property owners to the board of directors. Thereafter, the district becomes an independent entity with an elected board of directors. A GHAD may issue bonds, purchase and dispose of property, acquire property by eminent domain, levy and collect assessments, sue and be sued, and construct and maintain improvements.

First GHAD

The Beverly Act was originally drafted to allow for the formation of the Abalone Cove Landslide Abatement District in Rancho Palos Verdes, Los Angeles County. The 600-acre Abalone Cove landslide, which began moving in 1978, threatened over 100 homes upon and adjacent to it. It is located immediately west of the well known Portuguese Bend landslide, and probably has a similar mechanism (movement along seaward-dipping bentonitic tuff beds) (Ehlig, 1979).

The district was formed in January 1981 and has financed continued geologic investigation of the slide and installation of mine dewatering wells (Heffler, 1981), which appear to have successfully reduced lateral movement. The Beverly Act provided a mechanism for the Abalone Cove home owners to jointly finance abatement measures. A significant point is that it allowed them to treat the landslide as a single physical entity, irrespective of property boundaries. A companion bill by Senator Beverly provided for liability exemption of local district for actions taken to abate gradual earth movements.

Other Districts

In the six years since enactment of the Beverly Act, not many Geologic Hazard Abatement Districts have formed, though a few have been proposed. A Plan of Control was prepared for a proposed GHAD at Mount Washington (City of Los Angeles) in 1981 (Lung, 1981), but the District was never formed because affected homeowners felt that they could not afford the remedial measures.

In 1982 a second GHAD was formed in Rancho Palos Verdes, encompassing the Klondike Canyon landslide, located immediately to the east of the Portuguese Bend slide (Ehlig, 1982). As with Abalone Cove, this GHAD was formed in order to finance continued investigation, monitoring, and dewatering measures.

Since 1984 the Blakemont Property Owners' Association in Kensington (western Contra Costa County) has been working on formation of a GHAD to include approximately 135 parcels covering 35 to 40 acres. This GHAD would cover an earthflow complex that has been periodically active over the years. During the 1960s an attempt was made to form a drainage improvement district, but this attempt failed. The present effort is in response to damage from January 1982. An engineering geologist is currently preparing a Plan of Control for the GHAD, jointly financed by the Association, public agencies, and a utility district.

The most recent GHAD was formed in June 1985 at Canyon Lakes, a subdivision of over 1000 acres near Danville in Contra Costa County. This District is different because it was formed prior to occupancy of the subdivision and there has not yet been active landsliding. The purpose of the District is to establish a mechanism to pay for regular maintenance of drainage systems, routine reconnaissance, and timely repairs of any slope failures. The subdivision will have several thousand owners when fully developed. The Plan of Control (Proctor, 1985) is a general document, describing the types of activities that the District might perform.

The Canyon Lakes GHAD initially appears to go beyond the original intent of the Beverly Act, which was designed to abate an immediate, existing hazard. However, the Act is ambiguous on this point. According to an informal opinion by the staff consultant to the State Senate Committee on Local Government (Detwiler, 1985) it is indeed possible, under the enabling legislation, to create a one landowner district in which the "threatened landslide" is an event which has a small, but finite, probability of occurring. Thus, it appears that a GHAD may serve a maintenance and prevention function as well as an abatement function. The Act is still unclear, however, regarding how detailed a Plan of Control for a maintenance-oriented district needs to be, and what the legal responsibilities of the initial owner-developer would be to future home owners. Clear guidance is still needed on how to equitably and effectively operate a prevention-oriented GHAD.

SUMMARY

The Geologic Hazard Abatement District is a potentially useful tool to effectively abate a landslide hazard that crosses property boundaries. It is a mechanism that responds to the physical realities of landslides, and allows property owners to cooperate in solving a common problem. It removes much of the stigma of legal liabilities among adjacent landowners and allows them to cooperate rather than litigate. It also provides for a cost-effective solution, requiring only one geotechnical engineering firm and one plan to solve the problems of several landowners. In short, as local communities become aware of the existence of this statute, it is likely that the GHAD, be it for repair of an existing landslide or prevention of an impending one, will become more commonly used throughout the state.

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Back to Top of Page

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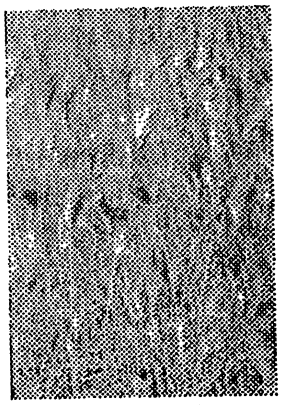
Non-native Grasses & Fires Create Double Jeopardy

Todd Esque and Cecil Schwalbe, Las Vegas, Nevada



Red brome - *Photo by C. Schwalbe*

The Arizona Upland Subdivision of the Sonoran Desert is home to the giant saguaro cactus, a symbol of this desert. In this mostly arid land, above-average seasonal precipitation heralds copious desert wildflowers in both spring and summer; but recently, this occasional exuberant boon of flowers has added a burden of risk to life in the desert.

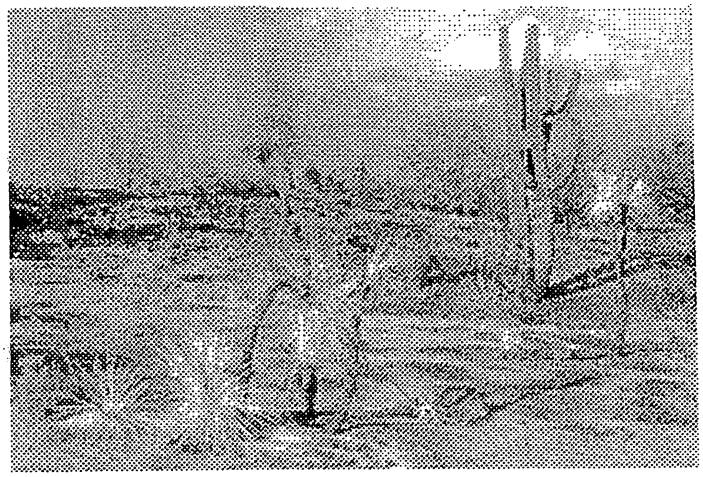
Rains that promote spectacular wildflower displays also increase the production of non-native grasses that act as fine-textured fuels and can carry destructive fires. In some respects, the risk of fire in the Arizona Upland Subdivision of the Sonoran Desert is double that of the Great Basin and Mojave desert habitats, because of the pattern of summer and winter rains that occurs near Tucson.

Sonoran desertscrub after the 1993 fire near Sugarloaf Mountain near Phoenix, Arizona. *Photo by C. Schwalbe*

Winter precipitation in this part of the desert promotes the growth of the non-native red brome, and adequate summer monsoons promote the perennial non-native buffelgrass. Red brome is one of several non-native annual plants invading the Southwestern deserts. These plants originated from the Mediterranean regions of the world. The annuals grow through the winter, bloom in the spring, and then lie dormant as seeds during the rest of the year. But their stems are persistent and can add to fuel loads for 2 to 3 years after the seeds have dropped.

Buffelgrass originated in Africa and relies predominately on warm temperatures and precipitation during the summer monsoonal storms. Both types of grasses cause fires during the parched arid summer weather of June and July. The fires can be caused by lightning storms, accidents, or careless motorists tossing cigarettes out of their cars and igniting the tinder-dry fuels created by these grasses. The results can be devastating and cause lasting changes to desert communities.

Exhibit F



Burned saguaros and yuccas as a result of the 1995 Rio Fire in the Phoenix, Arizona area. *Photo by T. Esque*

because recent educational programs have promoted the benefits of allowing natural fire cycles to manifest themselves in some wildland areas. However, fires do not appear to be a natural part of the saguaro-palo verde plant communities that characterize this desert. In fact, if fire had been a common occurrence in these diverse plant communities, there would be far less expansive stands of saguaros. Both saguaros and the smooth, green-barked palo verde trees suffer great losses when exposed to fire because their thin epidermal layers do not provide protection from excessive temperatures during fires.

In collaboration with the National Park Service and Bureau of Land Management, USGS researchers determined that there are increased risks to the survival of saguaros and tortoises by exposure to the fires caused by non-native grasses. Until recently, buffelgrass was thought to be predominantly a roadside weed. But backcountry surveys show that this grass has spread in remote areas of the Sonoran Desert. Both long-lived denizens of the desert, the saguaro and the desert tortoise can be harmed by fires that result from these grasses.

NPS and USGS-sponsored research has determined that 11 percent of a sample of tortoises died as a direct result of a desert fire. Saguaros also suffered a high degree of mortality. Over the course of five years, more than 20 percent of a sample population of saguaros died. Losses on this scale are considered catastrophic among long-lived species. In fact, the fires that follow invasions by non-native grasses have the ability to change the structure of the deserts. Even less intense fires cause long-lasting changes in the composition and diversity of plant communities.

Researchers are only beginning to understand the changes in Southwestern deserts that result from these plant invasions and fires. The problems of non-native plant invasions, increased fire frequency, and restoration are interrelated, requiring an integrated research program to gain valuable information for managers. New research should focus on fire behavior, fuels management, seed bank ecology, invasive plant control, and the effects of habitat change on the diverse native plant and animal communities in the Arizona Upland Subdivision of the Sonoran Desert.

Policies & Guidelines

Welcome
About CNPS
Native Plants?
Fun Activities
Great Ideas

Action Alerts!
Discussions

CNPS *Inventory* On-line

CNPS *Manual of California Vegetation* On-line

Programs, Etc.
Conservation
Legislation
Newhall
NCCP-HCPs
UC Merced
Education
Plant Science
Local Flora
Rare Plants
Vegetation
Photography
Publications
Fremontia
Bulletin
Policy Archive
State Meetings

Native Plant Conservation Campaign

Local Chapters
Sales & Events
Newsletters
Membership

Kid's Stuff

Photo Gallery

Bookstore

Links...

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Policy on Invasive Exotic Plants

Adopted September 1996

Definitions

Native plant: any plant which is a member of a species which was present at a given site prior to European contact.
Exotic plant: a plant which does not meet this definition of native.
Invasive exotic plant: a plant which is able to proliferate and aggressively alter or displace indigenous biological communities.

Policy

The California Native Plant Society:

- Urges all government agencies, non-governmental organizations, and individuals charged with land management to:
  - adopt and implement invasive exotic plant management policies.
  - coordinate with each other at all levels regarding non-native plant policy formulation and implementation.
  - publicize the need to prevent the spread of invasive exotic plants.
  - stop all introductions of invasive non-native plant species into natural ecosystems which are designed to achieve some other management objective.
  - implement exotic plant control measures in such a manner that native species and natural systems are not adversely impacted.
  - adequately fund the control of invasive exotic species.
- insists that all landscaping, mitigation, restoration, revegetation, and habitat/species recovery monitoring plans include provision for identifying and managing non-native plants and identifying potential for damaging the genetic structure of local native plant communities.
- advocates cooperative efforts to restrict introductions of invasive exotic species from commercial sources, including the agricultural, landscaping, and revegetation industries.
- supports inclusion of information regarding the effects of invasion by exotic plants in environmental or outdoor education programs in schools.
- encourages CNPS chapters to work for adoption and implementation of invasive exotic policies and programs at municipal and county levels and to raise local awareness regarding the problem

many citizen volunteer restoration efforts around the state as a means of habitat preservation, public education, community building, and constituency creation.

Background

The homogenization--blurring of distinctions--of the earth's flora and fauna and subsequent loss of biological diversity, is a problem of global significance which threatens livelihoods and engenders catastrophic ecological change. The threat posed to natural ecosystems by biological pollution--the introduction of non-native plants, animals and other organisms--is rivalled only by that of development. The most aggressive exotic plants are unacceptable in natural areas because they can exclude native plants, degrade, alter or displace natural plant communities, promote faunal change, reduce biological diversity, disrupt ecosystem processes, alter fire frequencies, restrict economic return, reduce recreational values, threaten endangered species and fundamentally alter the unique character and physiognomy of California.

1. With the possible exception of alpine and subalpine habitats, most areas of California contain significant expanses of exotic weeds. To cite but a few of the most egregious examples:
    - Vast areas of coastal dunes are occupied by iceplant (*Carpobrotus edulis*) and European beach grass (*Ammophila arenaria*), usually to the exclusion of any other kind of plant. They deprive other plants of moisture and nutrients scarce in this environment. Their value to wildlife is low. They alter wind patterns that sculpt the dunes and they bind the dunes, preventing the natural disturbance required by some of the native species. Because coastal dunes support biological communities whose plant and animal inhabitants may exist nowhere else, their degradation represents a loss of biological diversity.
    - Many-acre stands of pampas grass (*Cortaderia jubata* and *C. selloana*) and masses of German ivy (*Delairia odorata* , syn. *Senecio mikanioides*) appear discontinuously along the coast from the Oregon border into Baja California. German ivy forms thick blankets which cut off light and air to plants which it covers. Pampas grass is a robust six-foot tall grass with sharp-edged leaves growing from a stout clump. Its aggressive root system outcompetes plants even much larger than itself. Tall plumes, bearing many light seeds rise several feet beyond the leaves, dispersing seed great distances in the wind.
    - About one tenth of California (including ten million acres of rangelands) has been invaded by yellow star thistle (*Centaurea solstitialis*) (Maddox, 1985). The plant is toxic to horses and stout spines render it inedible to sheep and cattle. Aside from its economic impacts, yellow star thistle increases roadside fire

campgrounds, lining trails, and reducing biodiversity.
  - Brooms and gorse (*Cytisus, Genista, Ulex* spp.) have usurped many biological communities in the coast ranges and Sierra foothills: grasslands (including pasture), scrub, coastal prairie, chaparral, and mixed evergreen forest. Brooms are highly flammable and especially common in wildland/urban interfaces. Seeds of all of them may be viable for decades, making reclamation of territory they occupy exceedingly difficult. Their ranges continue to expand.
  - Giant reed grass (*Arundo donax*) and salt cedar (*Tamarix* spp.) have replaced riparian communities, especially in southern California, the Mojave Desert and the San Joaquin Valley. Salt cedar can cause dramatic hydrologic changes, lowering water tables and drying up streams and seeps.
  - Annual grasses (e.g., *Aira, Avena, Bromus, Hordeum, Lolium, Vulpia*) and forbs (e.g., *Vicia* spp., *Cirsium* spp.) have greatly altered the character of the remaining grasslands of California, replacing native bunchgrasses and lessening spring and summer wildflower displays.

2. On federal lands alone, it is estimated that weeds are claiming 4600 acres every day and dominate over 17 million acres in the western United States, (Bureau of Land Management, 1996) with similar expansions occurring in Canada and Mexico.
3. Control of exotic plants is expensive and control expenses continue to escalate as the problem grows. The federal and state departments of agriculture, national and state park systems, and The Nature Conservancy devote large and increasing resources to efforts to control exotic plant species. Hundreds of grassroot groups selectively address the problem in specific areas, but their work is dwarfed by the magnitude of the overall problem.
4. Taxpayers have spent billions of dollars purchasing and protecting wildlands which are now being lost due to invasion by weeds. In many cases these invasions--which will result in permanent, effectively irreversible damage--are allowed to proceed unopposed due to short-term budget considerations.
5. Economic return is reduced in areas dominated by weeds. For example, in addition to the above-cited California grazing lands degraded by the spread of yellow star thistle, a public agency was successfully sued by an adjacent landowner because yellow star thistle invasion rendered the home unsaleable.
6. Logged-over lands are frequently invaded by non-native plants such as pampas grass and brooms, which prevent establishment of seedling trees.
7. Biological control is expensive and time-consuming but is the most cost-effective remedy for controlling some of the most widespread invaders.
8. One thousand and twenty-five species (17 1/2%) of the

plants continue to be introduced to California. Moroccan mustard (*Brassica tournefortii*), introduced into California in the mid-1960s, has spread to cover large areas of the Sonoran and Mojave deserts. Biologists consider it a threat to the desert tortoise. With increased international travel and trade, new accidental and intentional introductions will likely accelerate.

9. Ecosystem function is altered, often irreversibly, by exotic plant invasions. The introduction of Moroccan mustard, red brome (*Bromus madritensis* ssp. *rubens*), cheat grass (*Bromus tectorum*) and other exotic grasses to the Mojave Desert has promoted unnatural fuel conditions and fire cycles which have become self-sustaining. Cheat grass causes similar impacts in rangelands throughout the intermountain west (D'Antonio, 1992). Smooth cordgrass (*Spartina alterniflora*) from eastern North America is changing sedimentation rates in open mud intertidal habitats (Josselyn, 1993). Other exotic plants have dramatic effects on hydrological regimes and nutrient cycling.
10. Non-native plants modify wildlife habitat, altering the species composition, sometimes drastically. Riparian areas, which are crucial breeding and foraging areas for both common and endangered birds, have become dominated by giant reed grass and salt cedar. Many species of birds don't use stands of these species in part because they support few insects, so food supply for insectivorous birds is poor. Studies have shown that native birds prefer native woodlands dominated by oak rather than groves of introduced trees such as Tasmanian blue gum (*Eucalyptus globulus*) (Morrison, 1988).
11. Fire frequencies may be altered by exotic plants, reducing the ability of native plants to prosper and effecting conversion of vegetation type (e.g., from native chaparral to non-native grassland). Post-fire seeding with exotic grasses has been shown to increase the likelihood of premature reburn, thus promoting type conversion. This conversion often can lead to increased erosion. (California Native Plant Society, 1995.)
12. Exotic plants further threaten many already rare or endangered native plants by displacement of habitat: examples include Howell's spineflower (*Chorizanthe howellii*) and other dune endemics, diamond-petalled California poppy (*Eschscholzia rhombipetala*), large-flowered fiddleneck (*Amsinckia grandiflora*), Morro manzanita (*Arctostaphylos morroensis*), San Luis Obispo monardella (*Monardella frutescens*), Nipomo Mesa lupine (*Lupinus nipomoensis*). At least 91 of the plants in *CNPS' Inventory of Rare and Endangered Vascular Plants of California* are threatened by invading exotics (California Native Plant Society, 1994). Growing infestations of non-native species are likely to drive populations of native species so low as to require listing by state or federal agencies. An informal analysis by the California Department of Fish and Game found that 23% of

non-native plants, and another 28% are moderately threatened by them (Keeler-Wolf, 1993).

13. Exotic plants may trap nearly all the energy flowing through the natural systems of the many areas where they have completely displaced indigenous plants, resulting in conversion from one vegetation type to another. This energy, instead of entering the food chain, is channeled into further proliferation by the invading plant, thus energizing the cycle. Land dominated by weeds has low biological value and is of little or no use to human societies. The land's ability to function in a biologically stable way is impaired.

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Dedicated to the preservation of California native flora
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Cont. Letter 172