



PCR's 2008 report ("Driftwood Properties biological resources/ESHA assessment") apparently has two purposes. One is to present the results of a number of useful biological studies that have been conducted on or near the property. The other is to erect straw men<sup>1</sup> and then knock them down. I will comment on the latter first.

### Straw Man Number 1 (PCR 2008)

"In a memorandum to the CCC Ventura staff, dated March 25, 2003...Dr. Dixon expanded on [the definition of environmentally sensitive habitat area contained in Section 30107.5 of the California Coastal Act]." and "[T]he applicability of Dr. Dixon's expanded tests for ESHA determination is logical for the study area due to the plant and wildlife resources they share [with the Santa Monica Mountains] within the same floristic province and Mediterranean ecosystem."

In fact, there has been no "expansion" of the definition of ESHA that was provided by the legislature in the Coastal Act. The tests for ESHA are:

- (1) Are the species or habitats in an area rare?
- (2) Are the species or habitats in an area especially valuable because of their special nature or role in the ecosystem?
- (3) Could the area be easily disturbed or degraded by human activities and developments?

In my 2003 memorandum, I provided examples of rarity, special nature, and important roles in the ecosystem, especially as they apply to the situation in the Santa Monica Mountains. With regard to their applicability to the Driftwood study area, since these tests are applicable throughout the Coastal Zone, they are certainly applicable there.

What is different in the Santa Monica Mountains is that some community types that are relatively common in California (e.g., chamise chaparral) meet the definition of ESHA by virtue of their especially valuable role in the Santa Monica Mountains ecosystem - an unusually large, unusually complex, and unusually pristine ecosystem that is unique in the Coastal Zone. As PCR points out, in my 2003 memorandum I stressed the need for site-specific biological assessments in order to make an ESHA determination. As is the case for Driftwood, Commission staff generally do not conduct those biological studies, but rather rely on the site-specific data provided by others, typically consultants such as PCR (cf. Dixon (2007)).

### Straw Man Number 2 (PCR 2008)

PCR suggests that I (Dixon 2007) applied a "deterministic," "linear recovery model," and made "broadly applicable generalizations." PCR then concludes that, "Under

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<sup>1</sup> "a weak or imaginary opposition (as an argument or adversary) set up only to be easily confuted" (Merriam-Webster Collegiate Dictionary). "A straw man argument can be a successful [rhetorical](#) technique (that is, it may succeed in persuading people) but it carries little or no real evidential weight, because the opponent's actual argument has not been refuted" (Wikipedia).

Dr. Dixon's assumptions, [the athletic fields at Pepperdine University] should be considered ESHA today because he claims they will recover to coastal sage scrub."

In fact, I did not make reference to Pepperdine University or any developed area or any disturbed habitat other than Driftwood and similar parcels within the southern maritime chaparral of Laguna Beach. Nor did I make broad generalizations that could be applied to disparate geographic areas or habitat types. I (Dixon 2007) wrote the following: "If left undisturbed, it is reasonable to expect that the [Driftwood] site would eventually again support a maritime chaparral community since such a successional sequence has been observed at other disturbed sites." and "When southern maritime chaparral is disturbed, the early colonizers are generally exotic grasses and other weeds followed by coastal sage scrub species. With time, the coastal sage scrub is expected to be replaced by maritime chaparral, which is considered the climax community. Based on observations of recovery on nearby sites, the process could take 30 years or longer (Fred Roberts, personal communication to J. Dixon, April 13, 2007)." I did not apply a particular theory of community succession to this area. Rather, I attempted to describe a pattern of vegetative change following disturbance to southern maritime chaparral<sup>2</sup> that had been empirically observed elsewhere in the local area. In response to my query regarding the likely habitat that would develop in the absence of additional disturbance, based on his experience in the area Mr. Roberts<sup>3</sup> thought that the graded area at Driftwood "...would almost certainly re-establish as a form of Diegan coastal sage scrub, perhaps<sup>4</sup> followed by chaparral, or a mixture of both. However it would be a very long process. Based on recovery on nearby sites it could be a 30-year long process or more on a site like that."<sup>5</sup>

Postulating absurd consequences arising from a point-of-view of PCR's own invention does not advance the discussion of this complex subject. However, in case PCR's extreme hypothetical arose from a lack of clarity in my earlier memorandum, I will restate my understanding of these issues. I have never recommended that any particular area should be considered ESHA simply because it has the potential to develop sensitive habitat attributes in the future. I evaluate habitat as it currently exists, except in the limited circumstance where the habitat has been degraded by human activities without the benefit of a required permit. The Driftwood site potentially falls

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<sup>2</sup> This pattern is implicit in the opinion of the Department of Fish and Game (Tippets 2001) that, "...past and ongoing clearance of vegetation on much of the previously-graded portion of the site has prevented the establishment of mature coastal sage scrub and southern maritime chaparral." Similarly, the U.S. Fish and Wildlife Service (Evans 2001) opined that "[T]he CSS onsite is likely an early successional stage resulting from prior disturbance, and would later give way to southern maritime chaparral..." LSA Associates (2000) stated that a primarily grassland habitat with low cover of coastal sage scrub species is generally considered an early successional stage of coastal sage scrub, occurs on the more disturbed parts of Driftwood and "indicates a gradual transition towards a climax community such as chaparral."

<sup>3</sup> Mr. Roberts is a botanist that has been monitoring maritime chaparral in the Laguna Beach area since 1982. As a biologist for the U.S. Fish and Wildlife Service he was the principal author of the Final Rule designating big leaf crownbeard (*Verbesina dissita*) as a "threatened" species under the federal Endangered Species Act.

<sup>4</sup> In retrospect, I should have included this caveat in my summary of the likely trajectory of community change at Driftwood and emphasized Mr. Robert's greater certainty of at least coastal sage scrub developing. Practically, there is little difference since coastal sage scrub also meets the definition of ESHA in this area that is occupied by the coastal California gnatcatcher.

<sup>5</sup> As discussed below, after severe shrub clearance in about 1970, aerial photographic evidence suggests that it required 30 to 40 years for the hills above the Driftwood site to recover.

within this category. Based on the standards in the Coastal Act, the habitat was ESHA when the property was initially graded, and the evidence suggests it would now be ESHA had the vegetation not been cleared repeatedly over the years. If the vegetation removal was conducted without a permit, the area should be considered ESHA regardless of its current degraded condition. If the vegetation removal was done legally, then the issue is moot and the site should be evaluated based on its current condition. In any event, whether the Driftwood site with its particular history of disturbance would in the fullness of time support coastal sage scrub, southern maritime chaparral, or be dominated by the exotic fountain grass is a legitimate question that I will address below in the context of the biological studies that have been conducted.

### Vegetative Changes On and Near the Driftwood Property

The location of the driftwood site relative to local topography is shown in Figure 1. A 1931 aerial photograph (Figure 2) shows the Driftwood property to be covered with vegetation that appears similar in pattern to the surrounding hillsides. The whole area was probably a mosaic of the vegetation types that are present in the area today, including southern maritime chaparral, ceanothus chaparral, toyon-sumac chaparral and coastal sage scrub (Fred Roberts, personal communication). The Driftwood property was graded in the early 1960s and the change in topography and reduction in vegetation is obvious in a 1964 aerial photograph (Figure 3). However, the adjacent natural hillside was more-or-less uniformly covered with shrubby vegetation. Sometime between 1964 and 1970 most of the shrubs and trees were removed from the lower slopes of the hills facing the ocean in the Hobo-Aliso portion of Laguna Beach, presumably for fire safety. In a 1970 aerial photograph (Figure 4) there is an abrupt roughly linear ecotone caused by shrub removal from Hobo Canyon to at least the ridge above the Aliso Creek Inn and Golf Course. Portions of the upper tier of the graded pads on the Driftwood property adjacent to the open space may also have been cleared at this time. In a 1977 aerial photograph (Figure 5), the lower portion of the hillside is still relatively bare in the cleared area. The vegetation on the Driftwood pads appears to have increased in abundance but the character of that vegetation cannot be ascertained from the aerial photographs. A 1986 aerial photograph (Figure 6) shows continuing recovery on the hillside, but the graded pads on the Driftwood property appear to have recently been cleared again. By 1993 large shrubs were much more abundant on the hillside (Figure 7) and by 2007 the native vegetation on the hillside had mostly recovered and again supports coastal sage scrub and southern maritime chaparral species (Figure 8). There was not a similar increase in large shrubs and small trees on the Driftwood property between 1977 and 2007. This may be partly a result of differences in substrate resulting from the early grading, but it is probably largely due to repeated disturbance in the form of vegetation removal. Since the signatures of herbaceous vegetation and coastal sage scrub are not distinct in these aerial images, one cannot determine how the character of the vegetation changed over time on the Driftwood Property. For this purpose, ground-level, oblique photographs and personal observations are more useful, but limited in extent.

Although local residents assert that there has been periodic vegetation removal for many years, the first clear evidence of which I am aware is a report of unpermitted grading in 1994. Following up a citizen's complaint of bulldozers clearing the land, City of Laguna Beach Inspector John Gustafson made a site visit on June 19, 1994 and found evidence of "grading or brush removal." Much of the property was again scraped in 1999 or shortly before<sup>6</sup> as evidenced by photographs provided in Tettemer (1999). Inexplicably, PCR (2008, p. 34) asserts that "[d]uring the nine-year period from 1999 to the present, it is our understanding that the graded lots area has not undergone vegetation scraping or mowing of any kind. It is a certainty that no vegetation disturbance has taken place on the graded portion of the study area since the Applicant acquired the property in late 2004." Yet, on the very next page, PCR states that "...the site has been used as a fuel break for years" and during a site visit on July 2, 2008 biologists from Glenn Lukos Associates explained that much of the graded area was cleared of vegetation by goats or by the use of weed wackers, machetes, and chain saws in fall 2007 (see attached field notes). The small size of coastal sage scrub plants and the woody debris under limbed laurel sumac in areas that were not cleared in 2007 suggests that some clearing may also have taken place between 1999 and 2007.

PCR (2008) asserts that the historic (1962) grading changed the soil characteristics such that the area cannot support southern maritime chaparral species, including crownbeard, and only a "limited patch of coastal sage scrub." This hypothesis is not consistent with empirical observations. The extreme southwestern portion of the property (beyond the chain link fence surrounding a retention basin) supports a relatively high quality stand of coastal sage scrub dominated by California sagebrush (Figure 9 & Attachment A, Area 8). Presumably this is the "limited patch" of coastal sage scrub referred to by PCR. However, there are other areas that support coastal sage scrub species<sup>7</sup>, but that appear to have been more frequently disturbed (e.g, Areas Areas 6, 7, & 7A in Attachment A). For example, Figure 10 shows the area to the east of the chain link fence in 1999 after it had been scraped to bare ground and again in 2006. The photographs were taken from different locations, but the fence can be used as a spatial referent. Most of the shrubs that have recruited are coastal sage scrub species (Attachment A, Area 7A). Were this area and other similar areas to the northeast left undisturbed, they would probably support stands of coastal sage scrub similar to that on the southwestern edge of the property. That soil is not limiting is also suggested by the fact the coastal sage scrub species (and very few non-natives) are growing in the retention basin (Figure 11), which was more severely scraped than surrounding areas and has poor gravelly soil. Species that are commonly found in chaparral are also found scattered in the frequently disturbed areas. These include big pod ceanothus (*Ceanothus megacarpus*), red berry (*Rhamnus crocea*), black sage

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<sup>6</sup> Local residents observed bulldozers scraping vegetation on more than one occasion between 1996 and 1999 (Dan and Penny Elia, personal communication to J. Dixon on July 12, 2008). Photographs taken on June 11, 1999 (Tettemer 1999) show pads mostly bare (rocks are visible on the surface). Had this occurred prior to the previous winter rains, one would expect to see ruderal vegetation.

<sup>7</sup> The significant variability in the vegetation on the site is not reflected in PCR's (2008) vegetation mapping. Areas with high quality coastal sage scrub, areas with developing coastal sage scrub, and areas dominated by non-native grasses are all lumped under the designation "Disturbed/Barren/Sagebrush Buckwheat Scrub," the floristics of which are not described in the text. This coarse categorization does not provide an accurate description of the vegetation that is present.

(*Salvia mellifera*), and crownbeard (*Verbisina dissita*). PCR (2008) argues that crownbeard germinate and begin to grow but do not persist on the site. They go on to say that those crown beard plants that germinated "...remained stunted, unable to persist due to lack of suitable soil and 'nurse' conditions provided by mature chaparral species." In fact, crownbeard has been observed on the site at least since the mid-1990s (F. Roberts, personal communication to J. Dixon on July 12, 2008) but apparently was first mapped in 2000 by LSA. In Spring 2008, it was mapped a second time (PCR 2008). The species has apparently been present on the property for at least ten years, so in that sense it is "persistent." However, it could be that on different occasions different ephemeral individuals or clones are observed and that particular plants have short life spans and are not "persistent." Such an *ad hoc* hypothesis is possible, although not a very parsimonious explanation. The fact remains that no one has marked individuals or clones and followed them over time, so there simply are no data to support PCR's speculation that crownbeard is "unable to persist." I do not know if the crownbeard that grow in the area that was graded in the early 1960s are as fit as those found in nearby undisturbed native habitats, but they are sufficiently robust to grow and flower with or without "nursery" overstory plants (Figure 12).

With regard to Environmentally Sensitive Habitat Areas as defined in the Coastal Act, there is apparently agreement that most of the slopes within the property boundaries are maritime chaparral, "very high value" under the City's General Plan, and meet the definition of ESHA (PCR 2008). Nearly all the vegetation surrounding the property boundaries was mapped as "Very High Value Habitat" or "Very High Value Habitat/High Value Habitat" by Michael Brandman and Associates (2002). The area was remapped by biologist Dave Bramlet (Almanza & Bramlet 2003) who found most of the surrounding area to be "Very High Habitat Value" and designated the coastal sage scrub at the southwest end of the property as "High Value Habitat."

After visiting the site, examining photographs from several years, and reading the various biological reports that are available, it is still my recommendation (cf. Dixon 2007) that, under current conditions, all areas of maritime chaparral and the coastal sage scrub at the southwest end of the property meet the definition of ESHA in the Coastal Act because they are rare habitats, have the important ecosystem function of supporting rare species (e.g., crownbeard, rufus-crowned sparrow, and California gnatcatcher), and are easily degraded by human activities. In my 2007 memorandum, I also recommended that the entire graded portion of the site be considered degraded ESHA. That recommendation was based on evidence that the original vegetation was maritime chaparral and coastal sage scrub, that if left undisturbed the site would transition to coastal sage scrub and maritime chaparral, and, implicitly, that there was no evidence that the repeated disturbance that prevented the reestablishment of ESHA was legally permitted. After visiting the site, I am more convinced that the site would now support coastal sage scrub and probably maritime chaparral had it not been repeatedly disturbed following the initial grading. PCR (2008) asserts that "...succession is toward fountain grass and not chaparral or coastal sage scrub." This is clearly not the case for the whole area. However, those pads that have been repeatedly and recently cleared of vegetation are dominated by fountain grass and other exotic weeds. PCR's claim that "eight or nine years have elapsed since the last habitat clearing" is false. At the least, most of the areas dominated by non-native

grasses and other exotic weeds were cleared in fall 2007. On the other hand, it is certainly true that these areas will never develop a native vegetation community if they are subject to frequent fuel modification in perpetuity.

Figure 1. Location of the Driftwood property (pink polygon). Figure courtesy of Penny Elia.



Figure 2. 1931 aerial photograph of the Hobo-Aliso ridge.



Figure 3. 1964 aerial photograph of the Hobo-Aliso ridge showing the recently graded Driftwood property (indicated by the "D").



Figure 4. 1970 aerial photograph of the Hobo-Aliso ridge showing the Driftwood property and area where vegetation was removed from the hillside leaving an abrupt ecotone where clearing stopped.



Figure 5. 1977 aerial photograph of the Hobo-Aliso ridge and Driftwood property.



Figure 6. 1986 aerial photograph of the Hobo-Aliso ridge and the Driftwood property.



Figure 7. 1993 aerial photograph of the Hobo-Aliso ridge and the Driftwood property.



Figure 8. 2007 aerial photograph of the Hobo-Aliso ridge and the Driftwood property.

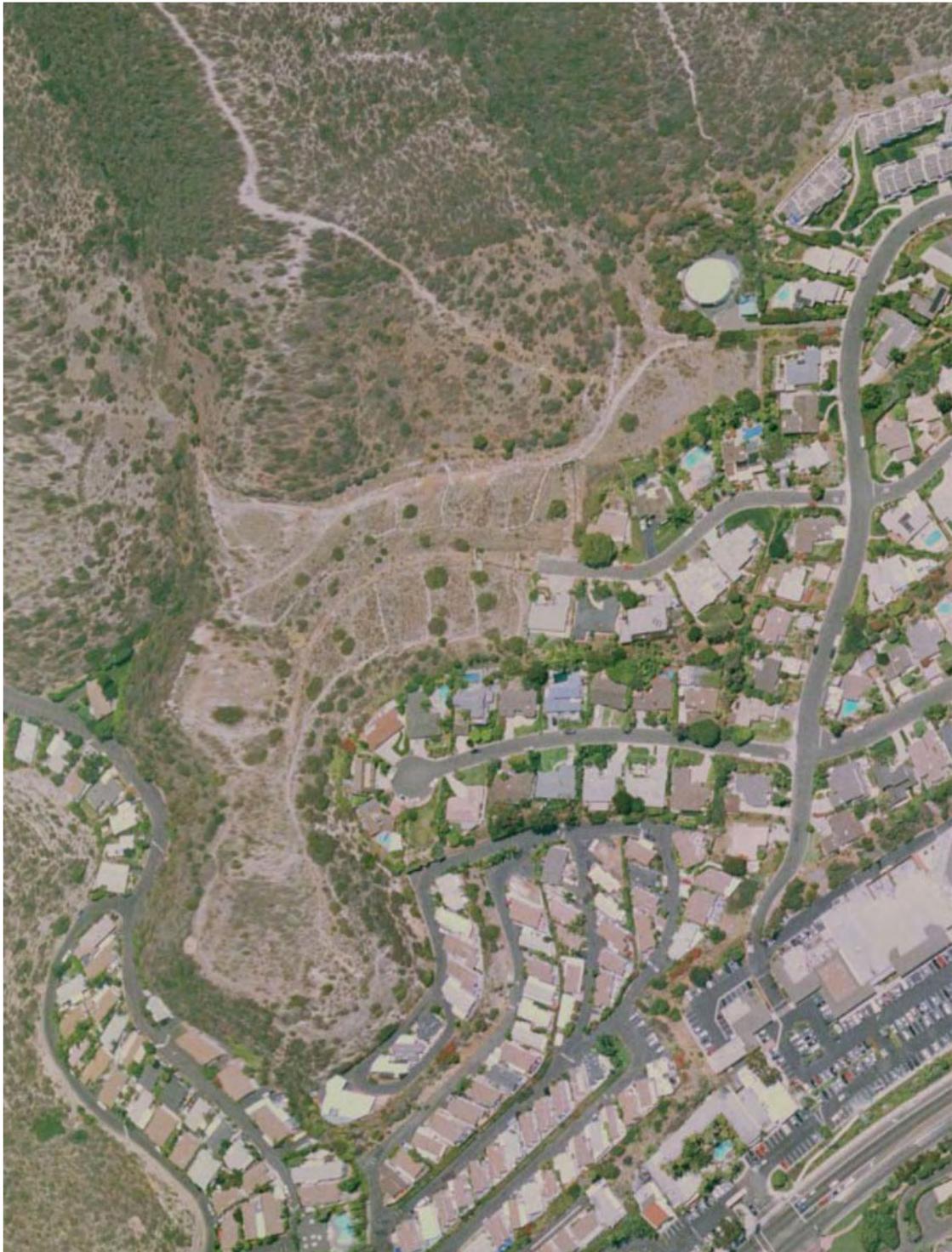


Figure 9. Coastal sage scrub in the southwestern-most portion of the property, west of the fenced retention basin (photographs courtesy of Dan and Penny Elia). This area is dominated by California sagebrush (*Artemisia californica*). Other native species present include *Malacothamnus* sp., *Rhus integrifolia*, *Isocoma menziesii*, *Eriogonum fasciculatum*, *Baccharis pilularis*, *Salvia mellifera*, *Opuntia* sp., *Verbesina dissita* (crownbeard), and *Rhamnus crocea*. Non-native grasses are present in most openings among the shrubs and are prevalent along the edges of the graded pad along a trail, where a few exotic *Acacia* and *Myoporum* are also present. The area is currently dried and brown due to several seasons of drought.



Figure 10. Development of coastal sage scrub following vegetation removal. The area was apparently scraped shortly before the photograph was taken based on the near total lack of vegetation. The photograph is from Tetteimer (1999). The June 30, 1999 date added to the photograph is the date of the report, not the photograph. The picture was probably taken on June 11, 1999, the day of the field assessment. By 2006 many coastal sage scrub species had colonized (photograph courtesy of Dan and Penny Elia). In 2008, most of the herbaceous cover is provided by non-native grasses, whereas most of the shrubs are native coastal sage scrub species, including *Artemisia californica*, *Eriogonum fasciculatum*, *Isocoma menziesii*, *Malosma laurina*, *Salvia mellifera*, *Encelia californica*. Chaparral species are also present, including *Ceanothus megacarpus*, and *Rhamnus crocea*.



Figure 11. Retention basin viewed from the west (photograph courtesy of Dan and Penny Elia). In 2008, the basin was dominated by native shrubs, including *Artemisia californica*, *Eriogonum fasciculatum*, *Malosma laurina*, *Mimulus aurantiacus*, *Rhus integrifolia*, *Malacothamnus* sp., and *Encelia californica*. There was very little cover by non-native species. Around 60% of the ground surface was unvegetated. The disturbance history of the retention basin is not known.



Figure 12. Flowering crownbeard growing near the retention basin without benefit of overstory “nurse” plants (photographs courtesy of Dan and Penny Elia).



ATTACHMENT A

Field Observations from a Site Visit on July 2, 2008

## M E M O R A N D U M

FROM: John Dixon, Ph.D.  
Ecologist

TO: File

SUBJECT: Site visit to the Driftwood property, Laguna Beach, California

DATE: July 12, 2008

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On July 2, 2008 I visited the Driftwood Property with representatives of the Athens Group, PCR, Glenn Lukos Associates, and other Coastal Commission staff. From about 0900 to about 1200, I walked the entire property and examined each graded pad by walking a haphazard zigzag path and noting the type of vegetation that was present and the dominant species. Tony Bomkamp of Glenn Lukos Associates verified species identifications in the field. Thienan Ly provided information on fuel modification activities that took place in October 2007. Tony Bomkamp and Thienan Ly of Glenn Lukos Associates reviewed an early draft of these notes and made minor corrections and additions that are incorporated herein. The areas referenced are shown on a map of the site (Figure 1, below).

*Entry Adjacent to Water Tank*

This area was grazed by goats for fuel suppression in fall 2007. It is now overwhelmingly dominated by non-native grasses and *Crysanthemum coronatum*. Scattered native plants include *Isocoma menziesii*, *Malosma laurina*, *Verbesina dissita*, and *Eriogonum fasciculatum*.

Area 1

This graded pad was grazed by goats for fuel suppression in fall 2007. It is now dominated by non-native grasses and *Chrysanthemum coronatum*, with scattered *Hirschfeldia incana*. *Isocoma menziesii* is scattered among the exotics. Natives on the slope above the graded pad include *Malosma laurina*, *Verbesina dissita*, and *Encelia californica*.

Area 2

This graded pad was grazed by goats for fuel suppression in fall 2007. It is now dominated by non-native grasses, with scattered *Hirschfeldia incana*. Scattered native plants include *Isocoma menziesii* and *Encelia californica*.

### Area 3

This graded pad was grazed by goats for fuel suppression in fall 2007. It is dominated by non-native grasses. The native plants *Isocoma menziesii*, *Encelia californica*, *Artemisia californica* and *Malosma laurina* are present, especially along the base of the slope above the graded pad.

### Area 4

The southern 25% of this graded pad was grazed by goats for fuel suppression in fall 2007. However, the entire pad has a similar disturbed character as Areas 1-3, although native species are more common. It is dominated by non-native grasses, with fountain grass (*Pennisetum setaceum*) prominent. Native plants that are present include *Malosma laurina*, *Lotus scoparius*, *Salvia mellifera*, *Artemisia californica*, *Eriogonum fasciculatum*, and abundant *Isocoma menziesii*. The slope above the graded pad is dominated by *Pennisetum* with scattered *Eriogonum*.

### Area 5

This graded pad was not reported to have been grazed in fall 2007. However, it has a similar disturbed character as Areas 1-3. It is dominated by non-native grasses, with fountain grass (*Pennisetum setaceum*) prominent. Native plants that are present include *Malosma laurina*, several large *Artemisia californica* along the seaward edge of the pad, *Eriogonum fasciculatum*, and *Isocoma menziesii*.

### Area 6

This graded pad was not reported to have been grazed in fall 2007. There is a striking qualitative difference between Areas 1-5 and Area 6. Although *Pennisetum* and other non-native grasses are abundant, native species are much more apparent. Native plants include *Baccharis pilularis*, *Malosma laurina*, *Salvia mellifera*, *Hazardia squarrosa* and locally abundant *Artemisia californica* and *Eriogonum fasciculatum*. *Ceanothus megacarpus* is present at the edge of the seaward slope.

### Area 7

Area 7 is below Area 6 at the base of a steep cut slope. This graded pad was not reported to have been grazed in fall 2007. The greatest ground cover is provided by low-lying non-native grasses. Several species of exotic succulents are also present. However, native species are quite prominent and include *Opuntia* sp., *Eriogonum fasciculatum*, *Artemisia californica*, *Malacothamnus* sp., *Salvia mellifera*, *Rhus integrifolia*, *Baccharis pilularis*, *Ceanothus megacarpus*, and *Verbesina dissita*. Small (c. 15 cm high) *Artemisia californica* are abundant.

### Area 7a

Area 7a is below Area 7 and bounded to the west by the chain link fence surrounding a retention basin. It is at about the same elevation as the lower, seaward strip of graded pads. The southern portions of this area were hand cleared using weed wackers, chainsaws, or machetes in fall 2007. The dominant ground cover is provided by non-native grasses. Native species include *Malosma laurina*, *Artemisia californica*, *Eriogonum fasciculatum*, *Salvia mellifera*, *Isocoma menziesii*, *Encelia californica*, *Ceanothus megacarpus*, and *Rhamnus crocea*. Fairly recent fuel modification throughout the area is suggested by the low height of most of the vegetation and the broken woody debris below the *Malosma laurina*.

### Retention Basin

The retention basin is a graded depression with a standpipe that is connected to a storm drain at the base of the northern slope adjacent to "K" Street. It is surrounded by a chain link fence. The ground surface is gravelly and a small area (probably less than 50 ft<sup>2</sup>) shows evidence of standing water in the form of soil cracks. Around 60% of the ground surface is unvegetated. There is very little cover by non-native species. The basin is dominated by native shrubs, including *Artemisia californica*, *Eriogonum fasciculatum*, *Malosma laurina*, *Mimulus aurantiacus*, *Rhus integrifolia*, *Malacothamnus* sp., and *Encelia californica*.

### Area 8

Area 8 is the western-most portion of the property. It is west of the retention basin. The central portion of this area is dominated by fairly large (30-100 cm high) relatively dense *Artemisia californica*. Other native species present include *Malacothamnus* sp., *Rhus integrifolia*, *Isocoma menziesii*, *Eriogonum fasciculatum*, *Baccharis pilularis*, *Salvia mellifera*, *Opuntia* sp., *Verbesina dissita*, and *Rhamnus crocea*. Non-native grasses fill most openings among the shrubs and are prevalent along the edges of the graded pad along a trail, where a few exotic *Acacia* and *Myoporum* are also present.

### Area 9

Area 9 is southeast of Area 7a and at about the same elevation. It was hand cleared for fuel suppression in fall 2007. It is the uppermost of the series of graded pads generally referred to as the "lower pads." It is dominated by non-native grasses. Scattered native species include *Malosma laurina*, *Artemisia californica*, *Eriogonum fasciculatum*, *Encelia californica*, *Baccharis pilularis*, *Rhus integrifolia*, and *Malacothamnus* sp. The steep hillside separating the upper and lower pads has much bare substrate and scattered *Eriogonum fasciculatum*, *Artemisia californica*, and *Rhamnus crocea*.

### Area 10

This graded pad was hand cleared for fuel suppression in fall 2007. It is now dominated by non-native grasses. Ground cover is nearly 100% false brome (*Brachypodium distachyon*) thatch. Tony Bomkamp identified this grass, which is not included in the species list provided by PCR. Scattered native species include *Isocoma menziesii*, *Encelia californica*, *Malacothamnus* sp., *Eriogonum fasciculatum*. *Malosma laurina* occupies the slope above the pad.

### Area 11

This graded pad was hand cleared for fuel suppression in fall 2007. It is now dominated by non-native grasses. Scattered native species include *Isocoma menziesii* and *Malacothamnus* sp. *Malosma laurina* occupies the slope above the pad.

### Area 12

This graded pad was hand cleared for fuel suppression in fall 2007. It is now overwhelmingly dominated by non-native grasses and *Chysanthemum coronatum*. Scattered native species include *Isocoma menziesii*, and *Malacothamnus* sp. *Rhus integrifolia* and *Malosma laurina* grow on the slope above the pad.

### Area 13

This graded pad was hand cleared for fuel suppression in fall 2007. It is now dominated by non-native grasses and *Chysanthemum coronatum*. Native species that are present include *Malosma laurina*, *Isocoma menziesii*, *Salvia mellifera*, *Encelia californica*, *Eriogonum fasciculatum*, and *Malacothamnus* sp.

Figure 1. Map of the Driftwood Property with numbered areas that correspond to descriptions provided above. The retention basin is not labeled but is the square polygon between areas 7A and 8.

