



WILDLAND RESOURCE
MANAGERS

P.O. Box 102
Round Mountain, CA 96084
530.472.3437

Mr. Frank Lehmann
Lehmann and Associates
1212 south Street, Suite B
Redding, CA 96001

May 24, 2012

Hello Frank,

From the discussions with the County and RBF last week it appears that the County was not aware of the extensive botanical survey that was completed for the Chatham Ranch property in the spring of 2005. The survey was completed and reported by our firm as one of the initial studies for the property after the preliminary biological review was done for the former owners. The survey was done by WRM associate botanist Charles "Bud" Adamson with my assistance. Prior to his retirement, Bud was the Shasta Trinity National Forest botanist, soil scientist, and ecologist and supervised compilation of the forest's sensitive plant population lists. Bud has worked as an WRM associated botanist and soil scientist since 1998. Enclosed herein is Bud's final report of the botanical survey for Chatham Ranch as the project area was defined in 2005. This information should be helpful for the County's environmental evaluation work.

Yours respectfully,

A handwritten signature in cursive script that reads 'Steven J. Kerns'.

Steven J. Kerns, Principal
Enclosure

Botanical Survey of Chatham Ranch – April 11, 2005

Area 1: Open Blue Oak/Grassland

Group/Family	Common Name	Botanical Name	Remarks
Trees	Blue Oak Digger Pine	Quercus douglassii Pinus sabiniana	
Shrubs/Vines	Chaparral Honeysuckle Poison Oak	Lonicera interrupta Toxicodendron diversilobum	
Forbs			
Borage Family	-----	Plagiobothrys greenei	Limited to wet inclusions
Borage Family	-----	Plagiobothrys shastensis	General habitat.
Buttercup Family	Western Buttercup	Ranunculus occidentalis	
Carrot Family	Bur-chervil	Anthriscus caucalis	
Carrot Family	Foothill Lomatium	Lomatium utriculatum	
Evening Primrose	Slender Clarkia	Clarkia gracilis ssp gracilis	
Geranium Family	Long-billed Filaree	Erodium botrys	
Geranium Family	Carolina Geranium	Geranium carolinianum	
Lily Family	Paper Onion	Allium amplexans	
Lily Family	Blue Dicks	Dichelostemma capitatum	
Lily Family	White Brodiaea	Tritelia hyacinthina	
Lily Family	Death Cammas	Zygadenus venosus	
Madder Family	Goose Grass	Galium aparine	
Madder Family	Climbing Bedstraw	Galium porrigens	
Madder Family	Field Madder	Sherardia arvensis	
Meadowfoam Family	White Meadowfoam	Limnanthes alba ssp alba	Limited to wet inclusions.
Mustard Family	Wild Radish	Raphanus sativa	
Mustard Family	Spokepod	Thysanocarpus radians	
Pea Family	Valley Sky Lupine	Lupinus nanus	Probably <i>Lupinus bicolor</i> (smaller look-a-like also present).
Pea Family	Shamrock	Trifolium dubium	
Pea Family	Spanish Lotus	Lotus purshianus	
Pea Family	Rose Clover	Trifolium hirtum	
Pea Family	Crimson Clover	Trifolium incarnatum	
Pea Family	Balloon Clover	Trifolium depauperatum	
Pea Family	Tomcat Clover	Trifolium wildenovii	
Pea Family	Spring Vetch	Vicia sativa ssp nigra	
Pea Family	Winter Vetch	Vicia villosa ssp varia	
Pink Family	Grass Pink	Petrorhagia dubia	
Plantain Family	Dwarf Plantain	Plantago erecta	
Primrose Family	Henderson's Shooting Star	Dodocatheon hendersonii	
Snapdragon Family	Valley Tassels	Castilleja attenuata	
Snapdragon Family	Monkey Flower	Mimulus guttatus	Limited to wet inclusions.
Snapdragon Family	Indian Warrior	Pedicularis densiflora	
Snapdragon Family	Butter and eggs	Triphysaria eriantha	
Sunflower Family	Wooly Fishhooks	Ancistrocarphus filagineus	
Sunflower Family	Fremont's Tidy Tips	Layia fremontii	Limited to wet inclusions.
Sunflower Family	Fremont's Tidy Tips	Microseris elegans	
Sunflower Family	Old Man of Spring	Senecio vulgaris	
Sunflower	Hawkbit	Leontodon taraxacoides	
Waterleaf Family	Meadow Nemophila	Nemophila pedunculata	

Botanical Survey of Chatham Ranch – April 11, 2005

Area 2: Open herbaceous area dominated by wet depressions

Group/ Family	Common Name	Botanical Name	Remarks
Trees	Blue Oak Digger Pine	Quercus douglasii Pinus sabiniana	Border of opening Border of opening
Forbs			
Borage Family	-----	Plagiobothrys fulvus	According to Jepson's: No particular moisture regime. Wet sites, grassland-woodland. Moist sites in grassland.
Borage Family	-----	Plagiobothrys greenii	
Borage Family	-----	Plagiobothrys scriptus	Moist sites in grassland.
Carrot Family	Bur-chervil	Anthriscus caucalis	
Carrot Family	Foothill Lomatium	Lomatium utriculatum	Moist sites in grassland.
Geranium Family	Long-billed Filaree	Erodium botrys	
Lily Family	Blue Dicks	Dichelostemma capitatum	Moist sites in grassland.
Lily Family	White Brodiaea	Tritelia hyacinthina	
Lily Family	Death Cammas	Zygadenus venosus	Moist sites in grassland.
Madder Family	Goose Grass	Galium aparine	
Meadowfoam Family	White Meadowfoam	Limnanthes alba ssp alba	Moist sites in grassland.
Mustard Family	Spokepod	Thysanocarpus radians	
Pea Family	Balloon Clover	Trifolium depauperatum	Moist sites in grassland.
Pea Family	Rose Clover	Trifolium hirtum	
Pea Family	Tomcat Clover	Trifolium wildenovii	Moist sites in grassland.
Pea Family	Winter Vetch	Vicia villosa ssp varia	
Pea Family	Miniature Lotus	Lotus micranthus	Moist sites in grassland.
Pea Family	Spanish Lotus	Lotus purshianus	
Phlox Family	-----	Eriastrum sapphirinum	Moist sites in grassland.
Poppy Family	Frying Pans	Eschscholzia lobbii	
Snapdragon Family	Valley Tassels	Castilleja attenuata	Moist sites in grassland.
Snapdragon Family	Butter and Eggs	Tryphysaria eriantha	
Snapdragon Family	Primrose Monkey Flower	Mimulus primuloides ssp linearifolius	Moist sites in grassland.
Sunflower Family	Gold Fields	Lasthenia californica	
Sunflower Family	Fremont's Tidy Tips	Layia fremontii	Moist sites in grassland.
Sunflower Family	-----	Microseris elegans	
Sunflower Family	Old Man of Spring	Senecio vulgaris	Moist sites in grassland.
Sunflower Family	Hawkbit	Leontodon taraxacoides	
Grasses			
	European Hair Grass	Aira caryophyllea	Dominant grass species
	Sweet Vernal Grass	Anthraxanthum adoratium	
	Soft Chess	Bromus hordeaceus	
	Foxtail Chess	Bromus madritensis ssp. rubens	
	Small Quaking Grass	Briza minor	
	Annual Hair Grass	Deschampsia danthonioides	

Only saw remains of last year?

Botanical Survey of Chatham Ranch – April 11, 2005

Area 3: Extensive treeless herbaceous opening (quite uniform vegetation distribution)

Group/Family	Common Name	Botanical Name	Remarks
Forbs			
Geranium Family	Long-billed Filaree	<i>Erodium botrys</i>	
Madder Family	Field Madder	<i>Sherardia arvensis</i>	
Mustard Family	Peppergrass	<i>Lepidium nitidum</i>	
Mustard Family	Wild Radish	<i>Raphanus sativa</i>	
Mustard Family	Spokepod	<i>Thysanocarpus radians</i>	
Pea Family	Miniature Lupine	<i>Lupinus bicolor</i>	
Pea Family	Valley Sky Lupine	<i>Lupinus nanus</i>	
Pea Family	Shamrock	<i>Trifolium dubium</i>	
Pea Family	Rose Clover	<i>Trifolium hirtum</i>	
Pea Family	Subterranean Clover	<i>Trifolium subterraneanum</i>	
Pea Family	Miniature Lotus	<i>Lotus micranthus</i>	
Pea Family	Spanish Lotus	<i>Lotus purshianus</i>	
Plantain Family	Dwarf Plantain	<i>Plantago erecta</i>	
Poppy Family	Frying Pans	<i>Eschscholzia lobbii</i>	
Snapdragon Family	Valley Tassels	<i>Castilleja attenuata</i>	
Snapdragon Family	Butter and Eggs	<i>Triphysaria eriantha</i>	
Sunflower Family	Wooly Fishhooks	<i>Ancistrocarphus filagineus</i>	
Sunflower Family	-----	<i>Microseris elegans</i>	
Grasses			
	European Hair Grass	<i>Aira caryophylla</i>	Dominant grass species
	Sweet Vernal Grass	<i>Anthroxanthum odoratum</i>	
	Soft Chess	<i>Bromus hordeaceus</i>	
	Rattail Fescue	<i>Vulpia myuros</i>	
	Hedgehog Dogtail	<i>Cynosurus echinatus</i>	
Grass-like monocot			
	A dwarf Rush (< 3" high)	<i>Juncus capitatus</i>	

Botanical Survey of Chatham Ranch – April 11, 2005

Area 4: Blue Oak Woodland

Group/Family	Common Name	Botanical Name	Remarks
Trees	Blue Oak Interior Live Oak	Quercus douglasii Quercus wislizenii	
Shrubs/Vines	Chaparral Honeysuckle Poison Oak	Lonicera interrupta Toxicodendron diversilobum	
Forbs			
Borage Family	-----	Plagiobothrys shastensis	
Buttercup Family	Western Buttercup	Ranunculus occidentalis	
Buttercup Family	Yellowtinge Larkspur	Delphinium decorum	
Carrot Family	Bur-chevil	Anthriscus caucalis	
Carrot Family	Foothill Lomatium	Lomatium utriculatum	
Carrot Family	Venus' Needle	Scandix pectin-veneris	
Geranium Family	Long-billed Filaree	Erodium botrys	
Geranium Family	Carolina Geranium	Geranium carolinianum	
Lily Family	Blue Dicks	Dichelostemma capitatum	
Lily Family	Death Cammas	Zygadenus venosus	
Madder Family	Field Madder	Sherardia arvensis	
Mallow Family	Checker-Bloom	Sidalcea malviflora	
Mustard Family	Wild Radish	Raphanus sativa	
Mustard Family	Spokepod	Thysanocarpus radians	
Pea Family	Valley Sky Lupine	Lupinus nanus	
Pea Family	Miniature Lotus	Lotus micranthus	
Pea Family	Balloon Clover	Trifolium depauperatum	
Pea Family	Shamrock	Trifolium dubium	
Pea Family	-----	Trifolium gracilentum	
Pea Family	Rose Clover	Trifolium hirtum	
Pea Family	Tomcat Clover	Trifolium wildenovii	
Pea Family	Spring Vetch	Vicia sativa ssp nigra	
Phlox Family	True Baby Stars	Linanthus bicolor	
Pink Family	Mouse-ear Chickweed	Cerastium glomeratum	
Plantain Family	Dwarf Plantain	Plantago erecta	
Snapdragon Family	Valley Tassels	Castilleja attenuata	
Snapdragon Family	Monkey Flower	Mimulus guttatus	
Snapdragon Family	Indian Warrior	Pedicularis densiflora	Limited to wet swales (drainage channels).
Sunflower Family	-----	Microseris elegans	
Valerian Family	Long-spurred Plectritis	Plectritis ciliosa ssp ciliosa	
Grasses			
	European Hair Grass	Aira caryophyllea	
	Sweet Vernal Grass	Anthroxanthum odoratum	
	Slender Wild Oat	Avena barbata	
	Small Quaking Grass	Briza minor	
	Hedgehog Dogtail	Cynosurus echinatus	
	Rattail Fescue	Vulpia myuros	

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Area 5: Riparian Corridor adjacent Clough Creek

Group/Family	Common Name	Botanical Name	Remarks
A. Typical Riparian Species most prevalent and representative of corridor			
Trees	Fremont Cottonwood Narrow-leaved Willow Arroyo Willow	Populus fremontii Salix exiqa Salix lasiolepis	
Shrubs/Vines	Himalayan Blackberry	Rubus discolor	
Forbs			
Borage Family	-----	Plagiobothrys austinae	Dominant.
Borage Family	-----	Plagiobothrys greenii	
Buckwheat Family	Willow Dock	Rumex salicifolius	No flowers yet.
Buttercup Family	Prickleseed Buttercup	Ranunculus muricatus	Prominent.
Evening Primrose Family	-----	Epilobium species?	No flowers yet.
Meadowfoam Family	White Meadowfoam	Limnanthes alba ssp. alba	
Mustard Family	American Winter Cress	Barbarea orthoceras	
Mustard Family	Early Winter Cress	Barbarea verna	
Pea Family	Subterranean Clover	Trifolium subterraneum	Atypical flowering. Some question on identification.
Pea Family	Variable Clover	Trifolium variegatum	There are 5 phases. This is probably in Phase 2.
Snapdragon Family	Seep-spring Monkey Flower	Mimulus guttatus	
Snapdragon Family	Primrose Monkey Flower	Mimulus primuloides ssp. linearifolius	Very small and inconspicuous.
Grasses	Annual Hair Grass	Deschampsia danthonioides	Dominant grass bordering stream.
	A Spikerush	Eleocharis species?	No inflorescence yet Currently partially submerged.
B. Plants Adapted to Variable Habitats that are Intermingled and Associated with Riparian Species in Streamside Corridor on moist and wet soils.			
Group/Family	Common Name	Botanical Name	Remarks
Forbs			
Borage Family	Popcorn Flower	Plagiobothrys nothoulrus	
Geranium Family	Long-billed Filaree	Erodium botrys	
Mustard Family	Peppergrass	Lepidium nitidum var nitidum	
Mustard Family	Spokepod	Thysanocarpus radians	
Pea Family	Shamrock	Trifolium dubium	
Pea Family	Rose Clover	Trifolium hirtum	
Pea Family	Tomcat Clover	Trifolium wildenovii	
Pink Family	Grass Pinks	Petrorhagia dubia	
Plantain Family	Dwarf Plantain	Plantago erecta	
Poppy Family	Fying Pans	Eschscholzia lobbii	
Sunflower Family	-----	Microseris elegans	
Grasses			
	European Hair Grass	Aira caryophyllea	
	Slender Wild Oats	Avena barbata	
	Small Quaking Grass	Briza minor	
	Soft Chess	Bromus hordeaceus	

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Area 6: Treeless herbaceous opening

Group/Family	Common Name	Botanical Name	Remarks
Forbs			
Geranium Family	Long-billed Filaree	Erodium botrys	May also be Lupinus bicolor. First occurrence noted.
Lily Family	White Brodiaea	Tritelia hyacinthina	
Lily Family	Death Cammas	Zygadenus venosus	
Pea Family	Valley Sky Lupine	Lupinus nanus	
Pea Family	Spanish Lotus	Lotus purshianus	
Pea Family	Balloon Clover	Trifolium depauperatum	
Pea Family	Shamrock	Trifolium dubium	
Pea Family	Rose Clover	Trifolium hirtum	
Pea Family	-----	Trifolium microdon	
Pink Family	Grass Pinks	Petrorhagia dubia	
Plantain Family	Dwarf Plantain	Plantago erecta	
Poppy Family	Frying Pans	Eschscholzia lobbii	
Snapdragon Family	Valley Tassels	Castilleja attenuata	
Snapdragon Family	Butter and Eggs	Triphysaria eriantha	
Sunflower Family	Hawkbit	Leontodon taraxacoides	
Sunflower Family	-----	Microseris elegans	
Grasses			
	European Hair Grass	Aira caryophyllea	
	Sweet Vernal Grass	Anthroxanthum odoratum	
	Slender Wild Oats	Avena barbata	
	Small Quaking Grass	Briza minor	
	Ripgut Brome	Bromus diandrus	
	Soft Chess	Bromus hordeaceus	
	Foxtail Chess	Bromus madritensis rubra	
	Italian Rye	Lolium multiflorum	
	Medusa Head	Taeniatherum caput-medusa	
Grass-like			
	A Dwarf Rush	Juncus capitatus	< 3" high associated with Vernal Pools

Botanical Survey of Chatham Ranch – April 11, 2005

Area 7: Oak Woodland on upper slope of canyon

(Better drained and vernal drier surface soils than **Areas 1-6**)

Group/Family	Common Name	Botanical Name	Remarks
Trees	Blue Oak Interior Live Oak	Quercus douglasii Quercus wislizenii	
Shrubs/Vines	Common Manzanita Buckbrush Western Redbud Yerbasanta Pitcher Sage Chaparral Honeysuckle Poison Oak	Arctostophylos manzanita Ceanothus cuneatus Cercis occidentalis Eriodictyon californicum Lepechinia calycina Lonicera interrupta Toxicodendron diversilobum	Sub shrub. Aromatic. Not yet flowering, therefore identity not affirmed.
Forbs	Bur-chervil Venus Needle Slender Clarkia Long-billed Filaree Carolina Geranium Wild Hyacinth Hartweg's Odontostomum Death Cammas Goose Grass An annual Cherckerbloom Hill Lotus Spanish Lotus Shamrock Rose Clover Tomcat Clover Spring Vetch Grass Pinks Dwarf Plantain Valley Tassles Wooly Sunflower Wooly Fishhooks Milk Thistle ----- Gray Mule Ears	Anthriscus caucalis Scandix pectin-veneris Clarkia gracilis ssp gracilis Erodium botrys Geranium carolinianum Dichelostemma multiflorum Odontostomum hartwegii Zygadenus venosus Galium aparine Sidalcea hartwegii Lotus humistratus Lotus purshinanus Trifolium dubium Trifolium hirtum Trifolium wildenovii Vicia sativa ssp nigra Petrorhagia dubia Plantago erecta Castilleja attenuata Eriophyllum lanatum Ancistrocarphus filagineus Silybum marianum Microseris elegans Wyethia helenioides	
Grasses	European Hair Grass Slender Wild Oats Ripgut Brome Soft Chess Foxtail Brome Hedgehog Dogtail Rye Rattail Fescue	Aira caryophyllea Avena barbata Bromus diandrus Bromus hordeaceus Bromus madratensis rubra Cynosurus echinatus Secale cereale Vulpia myuros	A very stunted specimen

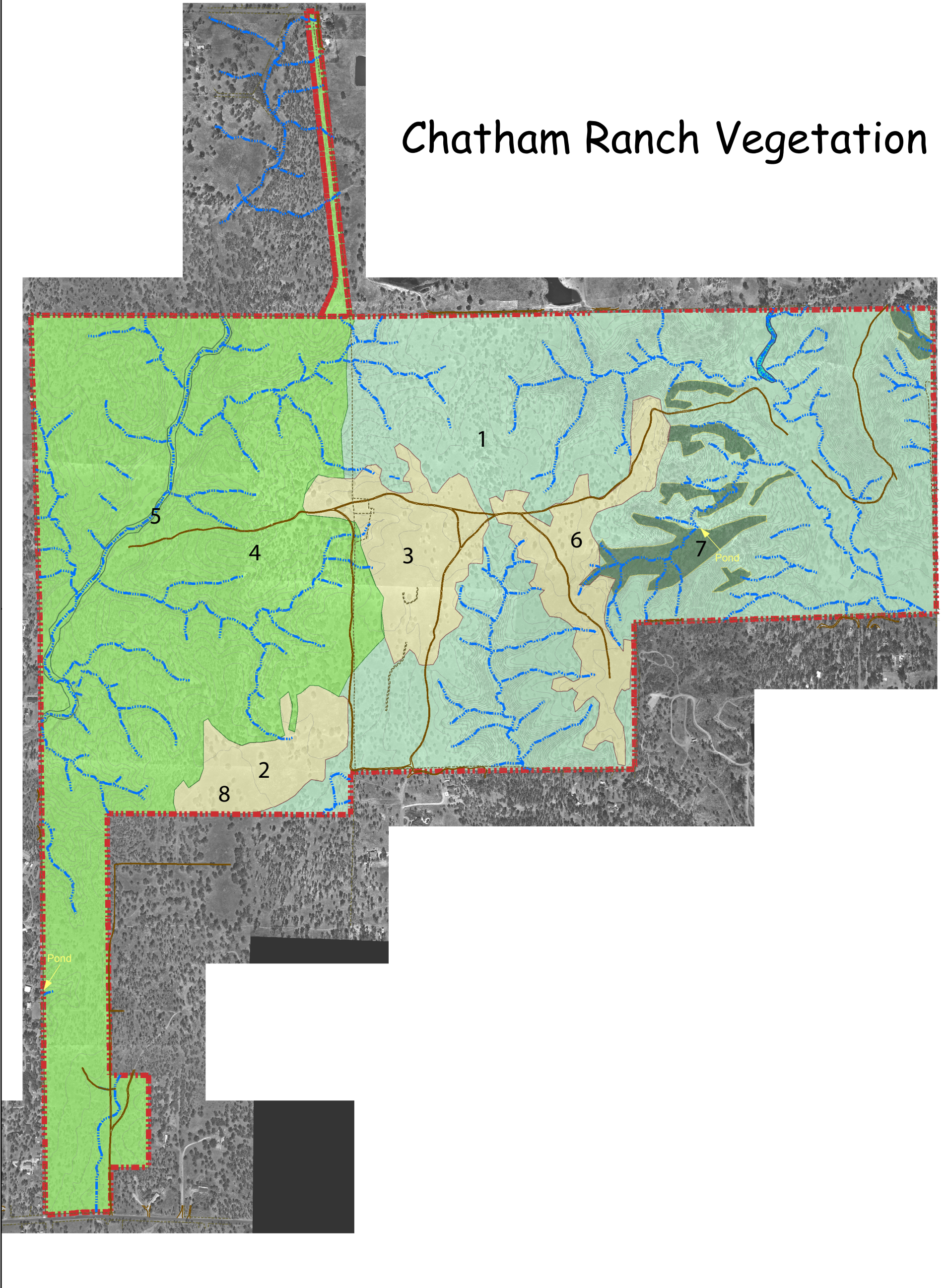
Botanical Survey of Chatham Ranch – April 11, 2005

Wet Lands

Group/Family	Common Name	Botanical Name	Remarks
A. Indicator plants noted at a specific point in an ephemeral drainage (Species normally limited to vernal wet soils)			
Forbs			
Borage Family	----	Plagiobothrys bracteatus	Other possible spp listed in C. Probably Phase 5 ¹ Also in permanently wet areas
Pea Family	----	Trifolium variegatum	
Snapdragon Family	Seep-spring Monkey Flower	Mimulus guttatus	
Grasses			
	Annual Hair Grass	Deschampsia danthonioides	A common species on moist to drying edges of streams and ponds and vernal meadows of low areas.
B. Species with broader adaptation that are frequently associated with moist soils and noted at the above site.			
Forbs			
Lily Family	White Brodiaea	Tritelia hyacinthina	<u>Habitat noted in Jepson's:</u> Most commonly on vernal wet grassland. No particular affinity to moisture noted in Jepson's, but seem to be found on vernal moist clay soils.
Poppy family	Frying Pans	Eschscholzia lobbia	
Grasses			
	Small Quaking Grass	Briza minor	Shaded or moist sites
C. Additional Wetland Species noted at other sites in project area.			
*Noted in drainage similar to A. Other listed species may also occur in this habitat			
Forbs			
Borage Family	----	Plagiobothrys austinae	Wet banks of Clough Creek. Drainage with running water in Area 1 . Same location as above and Vernal Pool in Area 2 . Inconspicuous tiny Monkey Flower with single terminal flower/stem. Noted in samples from Clough Creek and Area 2 vernal depression. In vernal wet areas in Areas 3 and 6 .
*Borage Family	----	Plagiobothrys greenii	
*Meadowfoam Family	White Meadowfoam	Limnathus alba ssp alba	
Snapdragon Family	Primrose Monkey Flower	Mimulus primuloides	
Grass-like	Small dwarf Rush	Juncus capitatus	

¹ *Trifolium variegatum*: most variable of California clovers, thus divided into five phases. Phase 2 limited to sites with permanently wet or inundated soils, but the local specimens keyed best to Phase 5, which is normally adapted to somewhat drier conditions. However the local plants appear to be limited to vernal wet habitats.

Chatham Ranch Vegetation



Field Work and Project Management
by Wildland Resource Managers
Steven J. Kerns
Principal and Certified Wildlife Biologist



GIS and Cartography
rkBARON GEOvisuals
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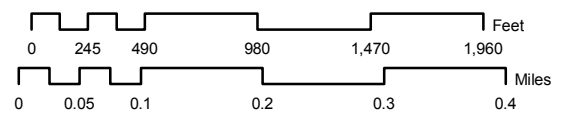
LEGEND

- | | |
|------------------|--------------------|
| Project Boundary | Annual Grassland |
| Dirt Road | Blue Oak Grassland |
| Fence | Blue Oak Woodland |
| Stream | Interior Live Oak |
| Contours | Riparian |

Projection: California State Plane, ZONE 1, NAD 83



1 inch = 833 feet



Sources:
Wildland Resource Managers
Lehmann & Assoc. Consulting