

Vegetation Management Suggestions for Rodeo Lagoon

Foredunes

There is very little native vegetation remaining in this area, due to years of trampling by visitors, dogs and probably army use. A low impact post and cable fence will be installed, stretching from the south end of the footbridge, south across the dunes, to the bluff on the south end of the beach. This would limit access to the west shore of the lagoon and protect the sensitive dune plants.

Once protected from trampling impacts, the main threat to the vegetation will be the invasive ice plant. This can be removed by manual pulling, and placed in a dumpster for removal from the site. The native dune grass (*Elymus mollis*) is evident in two small patches, and to a limited extent, interspersed within the ice plant. Ocean District has had a great deal of success transplanting dune grass rhizomes from established patches of dune grass to new areas. Other dune species will be propagated in the nursery from seed or cuttings.

1. Remove hottentot fig (ice plant), and other exotics.
=\$3500 (1 week manual pulling)
2. Plant dunes with native dune species, especially dune grass.
=\$3500 (1 week transplanting, seed collection, and outplanting)
3. Procure and install protective fencing.
=\$800 cable & clamps
=\$440 posts
=\$3500 (1 week crew time for installation)

Along North Shore

This area has been heavily impacted by visitor use and regular mowing, resulting in the invasion by non-native plants such as ice plant, fennel, oxalis, and kikuyu grass, and the suppression of native plants such as rush, blue wildrye, and coastal scrub species. The exotic trees in the area shade out native species that prefer full sun, and may cause changes in soil chemistry. Once the picnic tables are removed and the non-native species are controlled, the area can be revegetated with native plants.

1. Remove ice plant, kikuyu grass, oxalis, fennel, pea. Cut down exotic trees (myoporum, cypress, pine, pittosporum, casurina).
=\$7000 (2 weeks of manual and chainsaw removal)
2. Plant scrub and grassland species.
=\$1000 (1000 plants in tubes/\$1 each, propagated in-park)
3. Remove picnic tables and park bench.
4. Cease mowing, allow rushes and perennial grasses to establish.

Riprap Area on Northeast Shore

The broken concrete riprap will be removed by heavy equipment, according to Steve's plan. Revegetation will follow, consisting mainly of willow staking, with some outplanting of nursery-grown natives.

1. Remove riprap and regrade according to Steve's plan.
2. Stake the area with willow cuttings taken from the Rodeo Lagoon area.
=\$3500 (1 week crew time to collect cuttings and plant)
3. Enhance diversity with other freshwater species.
=\$500 (500 plants in tubes/\$1 each, propagated in-park)

South Shore of Lagoon and Above

The road from the willows to the beach will be removed, recontoured and revegetated. The trail will be rerouted above the lagoon, near the Nike Site. Plants in the way of this alignment should be salvaged and used to revegetate the obliterated road. Seed collected from the area can be used in addition to salvaged plants. Currently, the main threat to the native plant communities in this area is from invasive non-native plants.

1. Cut down cypress, acacia and eucalyptus trees. Remove fennel, german ivy, mustard, french broom, thistle, and ice plant.
=\$7000 (2 weeks of crew time for manual and chainsaw removal)
2. Revegetate road from willows to beach after removal (approximately 16,000 sq. ft.).
=\$10,500 (3 weeks of seed collection, plant salvage and seeding and planting.)

Bluffs on Southwest Corner of Lagoon

The dense infestation of ice plant in this area obscures the existence of what is thought of as a rare plant community: Central Dune Scrub. The priority in this area, once protection is installed and the road is obliterated, is the removal of ice plant and revegetation with native species.

1. Remove ice plant.
=\$3500 (1 week crew time for manual removal)
2. Install erosion control.
=\$500 (for 10 rolls of Curlex, this is a guess)
3. Plant with bluff species.
=\$2000 (2000 plants in leach tubes/\$1 per plant, propagated in-park)
=\$3500 (1 week seed collection and outplanting)
=TOTAL FOR PROJECT LABOR AND MATERIALS = \$50,740

RODEO LAGOON PLANT LIST

BEACH AREA ON WEST SIDE AND SOUTHWEST CORNER OF LAGOON Beach veg.

NATIVE GRASS

Distichlis spicata saltgrass

NATIVE FORBS

<i>Abronia latifolia</i>	yellow sand verbena
<i>Ambrosia chamissonis</i>	
var. <i>bipinnatisecta</i>	silver beachweed
<i>Angelica tomentosa</i>	
var. <i>hendersonii</i>	no common name
<i>Calystegia soldanella</i>	beach morning glory
<i>Carpobrotus chilense</i>	sea fig
<i>Eleocharis macrostachya</i>	spike rush
<i>Erigeron glaucus</i>	seaside daisy
<i>Eryngium armatum</i>	no common name
<i>Frankenia grandifolia</i>	no common name
<i>Helenium puberulum</i>	sneezeweed
<i>Heliotropium curassavicum</i>	
var. <i>oculatum</i>	heliotrope
<i>Heracleum maximum</i>	cow parsnip
<i>Jaumea carnosa</i>	no common name
<i>Potentilla egedii</i>	
var. <i>grandis</i>	no common name
<i>Salicornia virginica</i>	pickleweed
<i>Scirpus cernuus</i>	bulrush

NATIVE SHRUB

<i>Eriophyllum staechadifolium</i>	
var. <i>artemisiaeefolium</i>	lizard tail

NON-NATIVE FORBS

<i>Cakile maritima</i>	sea rocket
<i>Carpobrotus edule</i>	hottentot fig
<i>Cotula coronopifolia</i>	brass buttons
<i>Plantago coronopus</i>	plantain
<i>Tetragonia tetragonioides</i>	New Zealand spinach

RODEO LAGOON PLANT LIST

NORTH AND EAST BANKS OF LAGOON Salt marsh type vegetation.

NATIVE GRASSES

Distichlis spicata	saltgrass
X Elymus glaucus	blue wild rye
X Melica californica	melicgrass
X Stipa lepidota	needle grass

NATIVE FORBS

✓ Oenanthë sarmentosa	water parsley
Achillea millefolium	yarrow
Ambrosia chamissonis	silver beachweed
Anaphalis margaritacea	pearly everlasting
✓ Calystegia purpurata	morning glory
✓ Carex obnupta	sedge
✓ Cyperus eragrostis	no common name
Eleocharis macrostachya	spike rush
Equisetum arvense	common horsetail
✓ Equisetum telmateia	
var. braunii	giant horsetail
Erigeron glaucus	seaside daisy
Eschscholzia californica	California poppy
Frankenia granifolia	no common name
✓ Gnaphalium purpureum	cudweed
Jaumea carnosa	no common name
Juncus leseurii	rush
Juncus patens	rush
Madia sativa	tarweed
Marah fabaceus	manroot
Helenium puberulum	sneezeweed
✓ Polygonum punctatum	water smartweed
Polygonum sp.	no common name
Potentilla egedii	
var. grandis	no common name
✓ Pteridium aquilinum	
var. pubescens	western bracken
Rubus ursinus	California blackberry
✓ Rumex californicus	dock
✓ Rumex occidentalis	
var. procerus	dock
✓ Ruppia maritima	widgeon grass
✓ Scirpus pungens	three-square
Scrophularia californica	bee-plant
✓ Sisyrinchium bellum	blue-eyed grass
✓ Solanum douglasii	Douglas nightshade
Stachys rigida	
var. quercetorum	hedge nettle
Typha latifolia	cattail

NORTH AND EAST BANKS OF LAGOON, NATIVE FORBS, CONTINUED

✓ <i>Urtica californica</i>	nettle
✓ <i>Veronica americana</i>	American brooklime
<i>Vicia gigantea</i>	vetch

NATIVE SHRUBS

<i>Artemisia californica</i>	California sagebrush
<i>Baccharis pilularis</i>	
✓ <i>var. consanguinea</i>	coyote brush
<i>Eriophyllum staechadifolium</i>	
<i>var. artemisiaefolium</i>	lizard tail
<i>Heteromeles arbutifolia</i>	toyon
<i>Lonicera involucrata</i>	twinberry
✓ <i>Lupinus propinquus</i>	lupine
<i>Mimulus aurantiacus</i>	bush monkeyflower
<i>Mimulus guttatus</i>	monkeyflower
✓ <i>Rhododendron occidentale</i>	western azalea
<i>Rosa californica</i>	California rose
<i>Toxicodendron diversilobum</i>	poison oak
✓ <i>Symphoricarpos rivularis</i>	snowberry

NATIVE TREES

✓ <i>Myrica californica</i>	wax myrtle
✓ <i>Salix lasiandra</i>	yellow willow
<i>Salix lasiolepis</i>	arroyo willow

NON-NATIVE GRASSES

✓ <i>Avena barbata</i>	slim oats
✓ <i>Briza maxima</i>	rattlesnake grass
<i>Bromus diandrus</i>	ripgut brome
✓ <i>Bromus mollis</i>	soft chess
<i>Festuca arundinacea</i>	tall fescue
<i>Lolium multiflorum</i>	Italian ryegrass
<i>Lolium perenne</i>	perennial ryegrass
✓ <i>Phalaris minor</i>	Canarygrass
<i>Polypogon monspeliensis</i>	rabbitfoot grass

NON-NATIVE FORBS

<i>Anagalis arvensis</i>	scarlet pimpernel
✓ <i>Brassica geniculata</i>	summer mustard
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carpobrotus edule</i>	hottentot fig
✓ <i>Chasmanthe aethiopica</i>	no common name
<i>Conium maculatum</i>	poison hemlock
<i>Erodium cicutarium</i>	red stem filaree
<i>Foeniculum vulgare</i>	sweet fennel
<i>Galium aparine</i>	bedstraw

NORTH AND EAST BANKS OF LAGOON, NON-NATIVE FORBS, CONTINUED

Geranium dissectum	cranesbill
Gnaphalium luteo-album	cudweed
Hypochoeris radicata	hairy cat's ear
Iris sp.	no common name
Lepidium strictum	pepper grass
Lotus corniculatus	bird's foot trefoil
Malva nicaeensis	mallow
Matricaria matricarioides	pineapple weed
Medicago polymorpha	
var. brevispina	bur clover
Medicago polymorpha	
var. polymorpha	bur clover
Melilotus indicus	sweet clover
Nasturtium officinale	water-cress
Oxalis pes-caprae	Bermuda buttercup
Picris echioides	bristly ox-tongue
Plantago coronopus	plantain
Plantago lanceolata	ribwort
Raphanus sativus	radish
Rumex acetosella	sheep sorrel
Rumex crispus	curly dock
Rumex pulcher	fiddle dock
Senecio mikanioides	German ivy
Silybum marianum	milk thistle
Sonchus oleraceus	sow thistle
Spergularia rubra	sand spurrey
Vicia angustifolia	vetch
Zantedeschia aethiopica	common calla

NON-NATIVE SHRUBS

Cotoneaster sp.	no common name
Genista monspessulanus	French broom

NON-NATIVE TREES

Casuarina stricta	she-oak
Cupressus macrocarpa	Monterey cypress

RODEO LAGOON PLANT LIST

SOUTH SLOPE ABOVE LAGOON Wet and dry coastal scrub.

NATIVE GRASSES

✓ *Elymus pacificus* no common name

NATIVE FORBS

<i>Achillea millefolium</i>	yarrow
✓ <i>Allium dichlamydeum</i>	coast onion
✓ <i>Allocarya bracteata</i>	no common name
✓ <i>Agoseris grandiflora</i>	mountain dandelion
<i>Anaphalis margaritacea</i>	pearly everlasting
<i>Angelica tomentosa</i>	
var. <i>hendersonii</i>	no common name
<i>Artemisia douglasiana</i>	California mugwort
✓ <i>Aster radulinus</i>	broad-leaf aster
<i>Calystegia purpurata</i>	morning glory
<i>Castilleja wightii</i>	Indian paintbrush
✓ <i>Cerastrium arvense</i>	no common name
<i>Chlorogalum pmeridianum</i>	soap plant
✓ <i>Cryptantha leiocarpa</i>	white forget-me-not
<i>Dichelostemma capitatum</i>	blue dicks
✓ <i>Dryopteris arguta</i>	coast wood fern
<i>Dudleya farinosa</i>	sea lettuce
<i>Erigeron glaucus</i>	seaside daisy
<i>Eriogonum nudum</i>	nude buckwheat
<i>Eschscholzia californica</i>	California poppy
<i>Heracleum maximum</i>	cow parsnip
✓ <i>Lotus formosissimus</i>	coast lotus
✓ <i>Madia exigua</i>	tarweed
<i>Madia sativa</i>	tarweed
<i>Marah fabaceus</i>	manroot
<i>Navarretia squarrosa</i>	skunkweed
✓ <i>Oxalis pilosa</i>	wood sorrel
<i>Polystichum munitum</i>	western sword fern
<i>Potentilla glandulosa</i>	sticky cinquefoil
✓ <i>Prunella vulgaris</i>	
var. <i>atropurpurea</i>	self-heal
<i>Pteridium aquilinum</i>	
var. <i>pubescens</i>	western bracken fern
<i>Ranunculus californicus</i>	California buttercup
<i>Rubus ursinus</i>	California blackberry
<i>Sanicula crassicaulis</i>	pacific sanicle
<i>Satureja douglasii</i>	yerba buena
<i>Scrophularia californica</i>	bee plant
<i>Sisyrinchium bellum</i>	blue-eyed grass
<i>Solanum douglasii</i>	Douglas nightshade
✓ <i>Soliva sessilis</i>	no common name
<i>Stachys chamissonis</i>	hedge nettle

SOUTH SLOPE ABOVE LAGOON, NATIVE FORBS, CONTINUED

Stachys rigida	
var. quercetorum	hedge nettle
Toxicodendron diversilobum	poison oak
✓Trifolium tridentatum	tomcat clover

NATIVE SHRUBS

Artemisia californica	California sagebrush
Baccharis pilularis	
var. consanguinea	coyote brush
Eriophyllum staechadifolium	
var. artemisiaefolium	lizard tail
Lonicera involucrata	twinberry
Lupinus propinquus	lupine
Mimulus aurantiacus	bush monkeyflower
Ribes sanguineum	
✓var. glutinosum	pink flowering currant
Rosa californica	California rose

NATIVE TREES

Aesculus californica	California buckeye
✓Cornus californica	creek dogwood
Myrica californica	wax myrtle
Salix lasiolepis	arroyo willow
✓Sambucus callicarpa	red elderberry

NON-NATIVE GRASSES

Briza maxima	rattlesnake grass
Bromus mollis	soft chess
Cortaderia jubata	pampas grass
Festuca arundinacea	tall fescue
✓Holcus lanatus	velvet grass
Lolium multiflorum	Italian ryegrass

NON-NATIVE FORBS

Anagallis arvensis	scarlet pimpernel
Brassica geniculata	summer mustard
Carduus pycnocephalus	Italian thistle
Carpobrotus edule	hottentot fig
✓Cerastium viscosum	mouse-ear chickweed
Conium maculatum	poison hemlock
Cotula coronopifolia	brass buttons
✓Erechtites arguta	fireweed
✓Erechtites minima	fireweed
Erodium cicutarium	red stem filaree
✓Euphorbia peplus	petty spurge
Foeniculum vulgare	sweet fennel

SOUTH SLOPE ABOVE LAGOON, NON-NATIVE FORBS, CONTINUED

Galium aparine	bedstraw
Geranium dissectum	cranesbill
Gnaphalium purpureum	cudweed
Hypochoeris radicata	hairy cat's ear
Lotus corniculatus	bird's foot trefoil
Matricaria matricarioides	pineapple weed
Medicago polymorpha	
var. brevispina	bur clover
Melilotus indicus	sweet clover
Oxalis pes-caprae	Bermuda buttercup
Picris echioides	bristly ox-tongue
Plantago coronopus	plantain
Plantago lanceolata	ribwort
Rumex acetosella	sheep sorrel
Rumex crispus	curly dock
Senecio mikanioides	German ivy
Silene gallica	windmill pink
✓Spergularia arvensis	spurrey
Spergularia rubra	sand spurrey
✓Trifolium dubium	shamrock
Vicia sativa	vetch

NON-NATIVE TREES

Cupressus macrocarpa	Monterey cypress
Eucalyptus globulus	blue gum

RODEO LAGOON PLANT LIST

BANKS AROUND UPPER POND Areas of abundant freshwater (pond/marsh).

NATIVE GRASSES

✓ <i>Danthonia californica</i>	California oatgrass
✓ <i>Deschampsia elongata</i>	hairgrass
✓ <i>Deschampsia holciformis</i>	hairgrass
<i>Elymus glaucus</i>	blue wild rye
✓ <i>Festuca idahoensis</i>	Idaho fescue
<i>Hordeum brachyantherum</i>	Meadow barley
✓ <i>Stipa pulchra</i>	purple needlegrass

NATIVE FORBS

<i>Achillea millefolium</i>	yarrow
✓ <i>Agoseris heterophylla</i>	dandelion
<i>Anaphalis margaritacea</i>	pearly everlasting
<i>Athyrium filix-femina</i>	
var. <i>cyclosorum</i>	common lady fern
<i>Calystegia purpurata</i>	morning glory
✓ <i>Cardamine oligosperma</i>	bitter-cress
✓ <i>Carex globosa</i>	sedge
<i>Carex obnupta</i>	sedge
<i>Carpobrotus chilense</i>	sea fig
<i>Cyperus eragrostis</i>	no common name
✓ <i>Epilobium halleanum</i>	willow herb
<i>Epilobium watsonii</i>	
✓ var. <i>franciscanum</i>	willow herb
<i>Erigeron glaucus</i>	seaside daisy
<i>Equisetum arvense</i>	common horsetail
<i>Eschscholzia californica</i>	California poppy
✓ <i>Galium tinctorium</i>	bedstraw
<i>Gnaphalium chilense</i>	cudweed
<i>Gnaphalium purpureum</i>	cudweed
<i>Helenium puberulum</i>	sneezeweed
<i>Heracleum maximum</i>	cow parsnip
✓ <i>Hydrocotyl ranunculoides</i>	marsh pennywort
✓ <i>Juncus effusus</i>	rush
<i>Juncus leseurii</i>	rush
<i>Juncus patens</i>	rush
<i>Nasturtium officinale</i>	water cress
<i>Oenanthe sarmentosa</i>	water parsley
<i>Polystichum munitum</i>	western sword fern
<i>Potentilla egedii</i>	
var. <i>grandis</i>	cinquefoil
<i>Pteridium aquilinum</i>	
var. <i>pubescens</i>	western bracken fern
<i>Rubus ursinus</i>	California blackberry
✓ <i>Rumex fueginus</i>	dock
<i>Scirpus cernuus</i>	bulrush
✓ <i>Scirpus microcarpus</i>	bulrush

BANKS AROUND UPPER POND, NATIVE FORBS, CONTINTUED:

Scirpus pungens	three square
Solanum douglasii	Douglas nightshade
✓Solidago occidentalis	goldenrod
Toxicodendron diversilobum	poison oak
Triteleia (Brodiaea) laxa	Ithuriel's spear
Typha latifolia	cattail
Veronica americana	American brookline
Vicia gigantea	vetch
✓Woodwardia fimbriata	western chain fern
Wyethia angustifolia	narrow leaf mule's ears

NATIVE SHRUBS

Baccharis pilularis	
var. consanguinea	coyote brush
Eriophyllum staechadifolium	
var. artemisiaefolium	lizard tail
Heteromeles arbutifolia	toyon
✓Lonicera involucrata	twinberry
✓Lupinus nanus	sky lupine
Lupinus propinquus	lupine
Mimulus aurantiacus	bush monkeyflower
Mimulus guttatus	monkeyflower
Rhamnus californica	coffeeberry
Rhododendron occidentale	western azalea
Ribes sanguineum	
var. glutinosum	pink flowering currant
Rosa californica	California rose
Scrophularia californica	bee plant

NATIVE TREES

Myrica californica	wax myrtle
Salix lasiandra	yellow willow
Sambucus callicarpa	red elderberry

NATIVE AQUATIC PLANTS

✓Lemna sp.	duckweed
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NON-NATIVE GRASSES

Aira caryophylllea	silver hair grass
Avena barbata	slim oat
Briza maxima	rattlesnake grass
Bromus diandrus	ripgut brome
Bromus mollis	soft chess
Festuca arundinacea	tall fescue
Festuca arundinacea x	
Lolium perenne	festulolium

BANKS AROUND UPPER POND, NON-NATIVE GRASSES, CONTINUED

✓Festuca myuros	fescue
Holcus lanatus	velvet grass
✓Hordeum depressum	no common name
Hordeum leporinum	farmer's foxtail
Lolium multiflorum	Italian ryegrass
Phalaris aquatica	harding grass
Poa annua	annual bluegrass

NON-NATIVE FORBS

Anagallis arvensis	scarlet pimpernel
✓Arctotheca calendula	capeweed
Brassica geniculata	summer mustard
Carduus pycnocephalus	Italian thistle
Chasmanthe aethiopica	no common name
Conium maculatum	poison hemlock
✓Cotula australis	brass buttons
✓Dipsacus fullonum	teasel
✓Dipsacus sativus	Fuller's teasel
Erechtites minima	fireweed
Erodium botrys	broad-leaf filaree
Erodium cicutarium	red stem filaree
✓Erodium moschatum	white stem filaree
Filago gallica	no common name
Foeniculum vulgare	sweet fennel
Galium aparine	bedstraw
Galium spurium	
✓var. echinospermum	cleavers
Geranium dissectum	cranesbill
✓Hypochoeris glabra	smooth cat's ear
Hypochoeris radicata	hairy cat's ear
✓Ludwigia uruguayensis	no common name
Matricaria matricarioides	pineapple weed
✓Medicago arabica	spotted medic
Medicago polymorpha	
var. brevispina	bur clover
Melilotus indicus	sweet clover
✓Lathyrus latifolius	eversasting pea
✓Paronychia franciscana	no common name
Picris echioides	bristly ox-tongue
Plantago coronopus	plantain
Plantago lanceolata	ribwort
✓Polycarpon tetraphyllum	no common name
Raphanum sativus	radish
✓Rubus procerus	himalaya berry
Rumex acetosella	sheep sorrel
Rumex crispus	curly dock
Silybum marianum	milk thistle
Sonchus asper	sow thistle
Spergularia rubra	sand spurrey
Trifolium dubium	shamrock
✓Trifolium repens	white clover

BANKS AOUND UPPER POND, NON-NATIVE FORBS, CONTINUED

<i>Vicia sativa</i>	vetch
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NON-NATIVE SHRUBS

<i>Cotoneaster</i> sp.	no common name
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<i>Myoporum</i> sp.	no common name
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<i>Ulex europaeus</i>	gorse
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NON-NATIVE TREE

<i>Cupressus macrocarpa</i>	Monterey cypress
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RODEO LAGOON PLANT LIST

INVASIVE NON-NATIVE PLANTS of SPECIAL CONCERN

Arctotheca calendula	cape weed
Brassica geniculata	summer mustard
Cakile maritima	sea rocket
Carduus pycnocephalus	Italian thistle
Carpobrotus edule	hottentot fig
Cirsium vulgare	bull thistle
Conium maculatum	poison hemlock
Cupressus macrocarpa	Monterey cypress
Cotoneaster sp.	no common name
Dipsacus sp.	teasel
Eucalyptus globulus	blue gum
Foeniculum vulgare	sweet fennel
Genista monspessulana	French broom
Lathyrus latifolius	everlasting pea
Oxalis pes-caprae	Bermuda buttercup
Raphanus sativus	radish
Rubus procerus	Himalaya-berry
Senecio mikanioides	German ivy
Silybum marianum	milk thistle
Ulex europaeus	gorse
Vicia sp.	vetch
Zantedeschia aethiopica	common calla