



Kik

Wakace?

Hooma?

?eepe?

Hune ?

Keela?

Polluk

?Olleh

Pooso?

?əltik





From Source to Sink



LOS VAQUEROS WATERSHED
NO TRESPASSING
WITHOUT CCWD PERMIT
PROTECTED DRINKING WATER



CONTRA COSTA
WATER DISTRICT

VIOLATORS WILL BE CITED (861 PC)





Bay Delta Conservation Plan

Covered Species

Table 1-1. BDCP Covered Species

No.	Common Name	Scientific Name	Status (Fed/State/CNPS)
Fish (11 species)			
1	delta smelt*	<i>Hypomesus transpacificus</i>	T/E/-
2	longfin smelt*	<i>Spirinchus thaleichthys</i>	C/T/-
3	Chinook salmon, Sacramento River winter-run ESU*	<i>Oncorhynchus tshawytscha</i>	E/E/-
4	Chinook salmon, Central Valley spring-run ESU*	<i>Oncorhynchus tshawytscha</i>	T/T/-
5	Chinook salmon, Central Valley fall- and late fall-run ESU*	<i>Oncorhynchus tshawytscha</i>	-/SSC/-
6	Steelhead, Central Valley DPS*	<i>Oncorhynchus mykiss</i>	T/-/-
7	Sacramento splittail*	<i>Pogonichthys macrolepidotus</i>	-/SSC/-
8	green sturgeon, southern DPS*	<i>Acipenser medirostris</i>	T/SSC/-
9	white sturgeon*	<i>Acipenser transmontanus</i>	-/-/-
10	Pacific lamprey*	<i>Entosphenus tridentatus</i>	-/-/-
11	river lamprey*	<i>Lampetra ayresii</i>	-/-/-
Mammals (5 species)			
12	riparian brush rabbit*	<i>Sylvilagus bachmani riparius</i>	E/E/-
13	riparian woodrat (San Joaquin Valley)*	<i>Neotoma fuscipes riparia</i>	E/SSC/-
14	salt marsh harvest mouse*	<i>Reithrodontomys raviventris</i>	E/E, FP/-
15	San Joaquin kit fox*	<i>Vulpes macrotis mutica</i>	E/T/-
16	Suisun shrew*	<i>Sorex ornatus sinuosus</i>	-/SSC/-
Birds (11 species)			
17	California black rail*	<i>Laterallus jamaicensis coturniculus</i>	-/T, FP/-
18	California clapper rail*	<i>Rallus longirostris obsoletus</i>	E/E, FP/-
19	greater sandhill crane*	<i>Grus canadensis tabida</i>	-/T, FP/-
20	least Bell's vireo*	<i>Vireo bellii pusillus</i>	E/E/-
21	Suisun song sparrow*	<i>Melospiza melodia maxillaries</i>	-/SSC/-
22	Swainson's hawk*	<i>Buteo swainsoni</i>	-/T/-
23	tricolored blackbird*	<i>Agelaius tricolor</i>	-/SSC/-
24	western burrowing owl*	<i>Athene cunicularia hypugaea</i>	-/SSC/-
25	western yellow-billed cuckoo*	<i>Coccyzus americanus occidentalis</i>	C/E/-
26	white-tailed kite*	<i>Elanus leucurus</i>	-/FP/-
27	yellow-breasted chat*	<i>Icteria virens</i>	-/SSC/-
Reptiles (2 species)			
28	giant garter snake*	<i>Thamnophis gigas</i>	T/T/-
29	western pond turtle*	<i>Actinemys marmorata</i>	-/SSC/-

No.	Common Name	Scientific Name	Status (Fed/State/CNPS)
Amphibians (2 species)			
30	California red-legged frog*	<i>Rana draytonii</i>	T/SSC/-
31	California tiger salamander (Central Valley DPS)*	<i>Ambystoma californiense</i>	T/T/-
Invertebrates (7 species)			
32	California linderiella*	<i>Linderiella occidentalis</i>	-/-/-
33	conservancy fairy shrimp*	<i>Branchinecta conservacion</i>	E/-/-
34	longhorn fairy shrimp*	<i>Branchinecta longiantenna</i>	E/-/-
35	midvalley fairy shrimp*	<i>Branchinecta mesoallensis</i>	-/-/-
36	valley elderberry longhorn beetle*	<i>Desmocerus californicus dimorphus</i>	T/-/-
37	vernal pool fairy shrimp*	<i>Branchinecta lynchi</i>	T/-/-
38	vernal pool tadpole shrimp*	<i>Lepidurus packardii</i>	E/-/-
Plants (18 species)			
39	alkali milk-vetch*	<i>Astragalus tener</i> var. <i>tener</i>	-/-/1B
40	Boggs Lake hedge-hyssop*	<i>Gratiola heterosepala</i>	-/E/1B
41	Brittlescale*	<i>Atriplex depressa</i>	-/-/1B
42	Carquinez goldenbush*	<i>Isocoma arguta</i>	-/-/1B
43	Delta button celery*	<i>Eryngium racemosum</i>	-/E/1B
44	Delta mudwort*	<i>Limosella subulata</i>	-/-/2
45	Delta tule pea*	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	-/-/1B
46	dwarf downingia*	<i>Downingia pusilla</i>	-/-/2
47	Heartscale*	<i>Atriplex cordulata</i>	-/-/1B
48	Heckard's peppergrass*	<i>Lepidium latipes</i> var. <i>heckardii</i>	-/-/1B
49	Legenere*	<i>Legenere limosa</i>	-/-/1B
50	Mason's lilaeopsis*	<i>Lilaeopsis masonii</i>	-/R/1B
51	San Joaquin spearscale*	<i>Atriplex joaquiniana</i>	-/-/1B
52	side-flowering skullcap*	<i>Scutellaria lateriflora</i>	-/-/2
53	slough thistle*	<i>Cirsium crassicaule</i>	-/-/1B
54	soft bird's-beak*	<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	E/R/1B
55	Suisun Marsh aster*	<i>Symphyotrichum lentum</i>	-/-/1B
56	Suisun thistle*	<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	E/-/1B









“...for many parts of the world, in aiming to restore to a “pristine” or “natural” state, managers both ignore prior human impact and deny indigenous human societies their rightful place as effective ecosystem managers.”

— Hobbs et al. 2011.



24 2012

Cultural Burning In California





- Key Issues

Settlement has led to a disconnect between people and landscape

Limits continuance of cultural practices

Reduces the transfer of traditional knowledge

Leads to unhealthy landscapes and people



What and How to Implement

- Environmental change is constant
 - Can't recreate the past
 - Can implement the keystone process
- 'Intervention Ecology' Hobbs et al. 2011
- Understand and read the parameters
 - Soils
 - Vegetation
 - Climate
 - Social
 - Political

- Identify a vision for the future and appropriate scales
- Identify the goals for the given burn(s)
 - How, where, when, why, what
- Identify success criteria
 - Rightful Numbers
 - Can you live there?

Miwko? Waali? 28 July



Miwko? Waali? 28 July



Aurukun 6 August



Aurukun 6 August



Partnerships

Implement Culturally Objective Burning

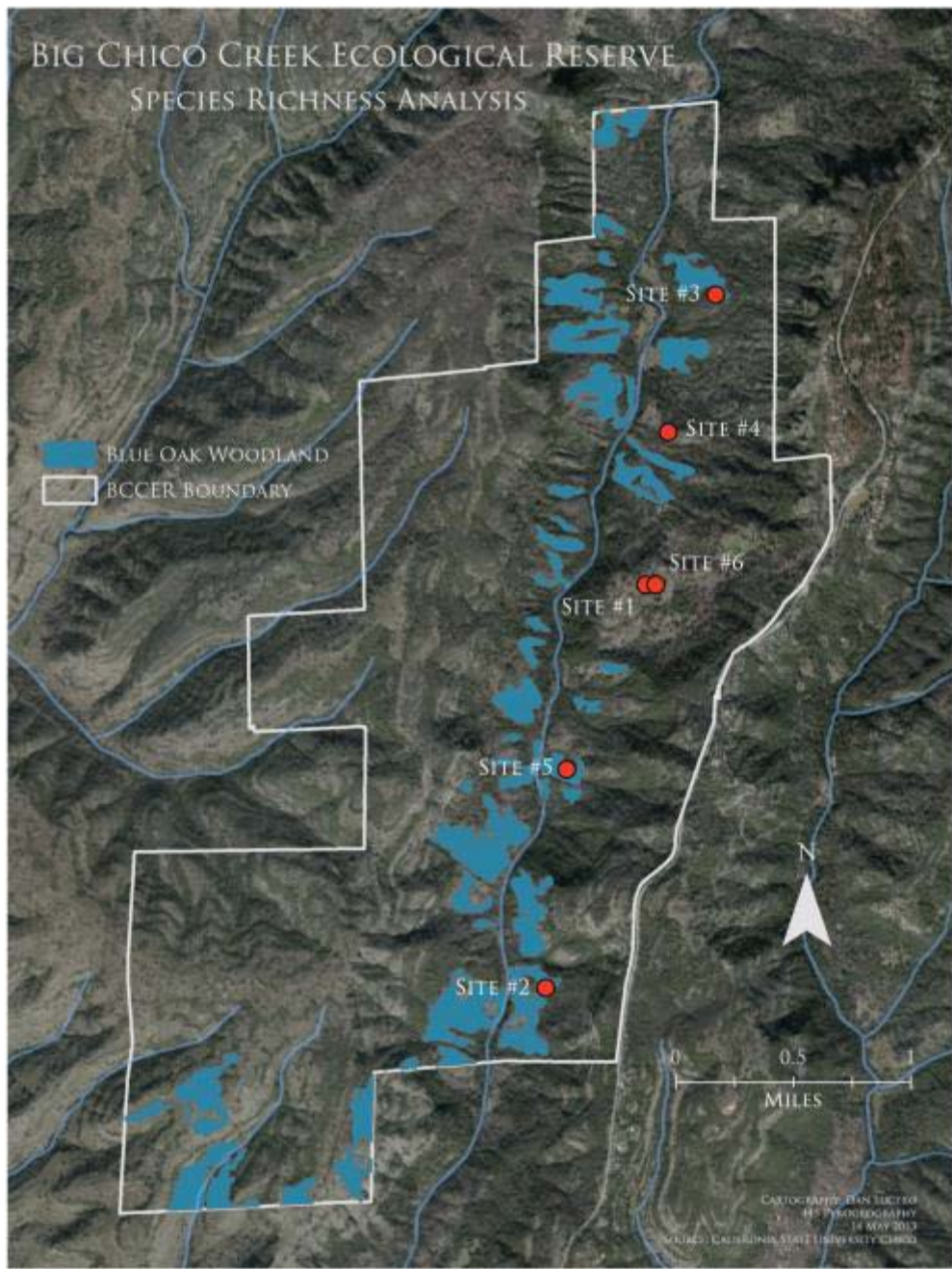
Research/Mo
nitoring

Training/Le
arning

Blue Oak Woodlands: Big Chico Creek Ecological Reserve

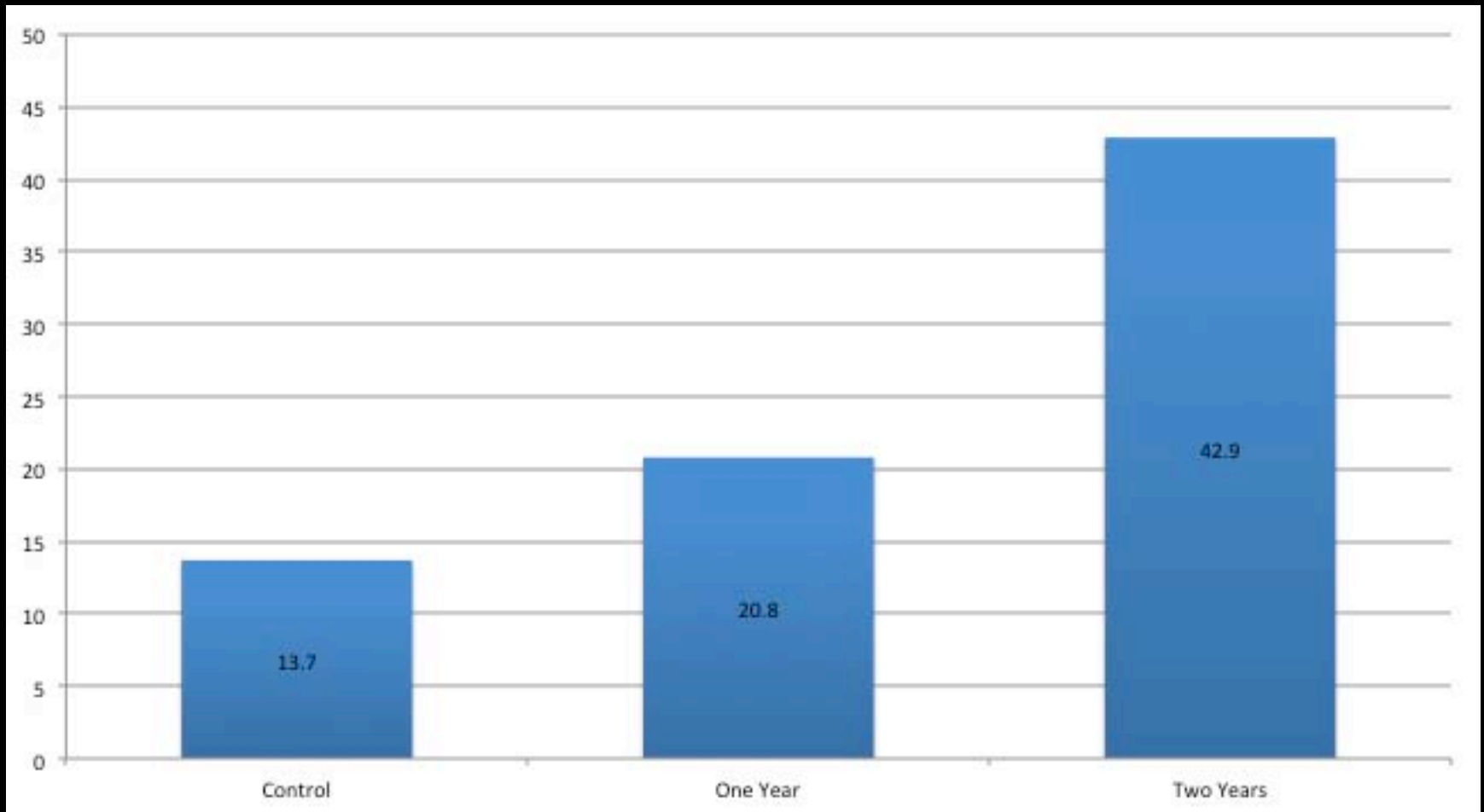


BIG CHICO CREEK ECOLOGICAL RESERVE SPECIES RICHNESS ANALYSIS





Proportion Native Cover



Meadow Restoration

Big Chico Creek Ecological Reserve





Valley Oak Woodlands: Cosumnes River Preserve



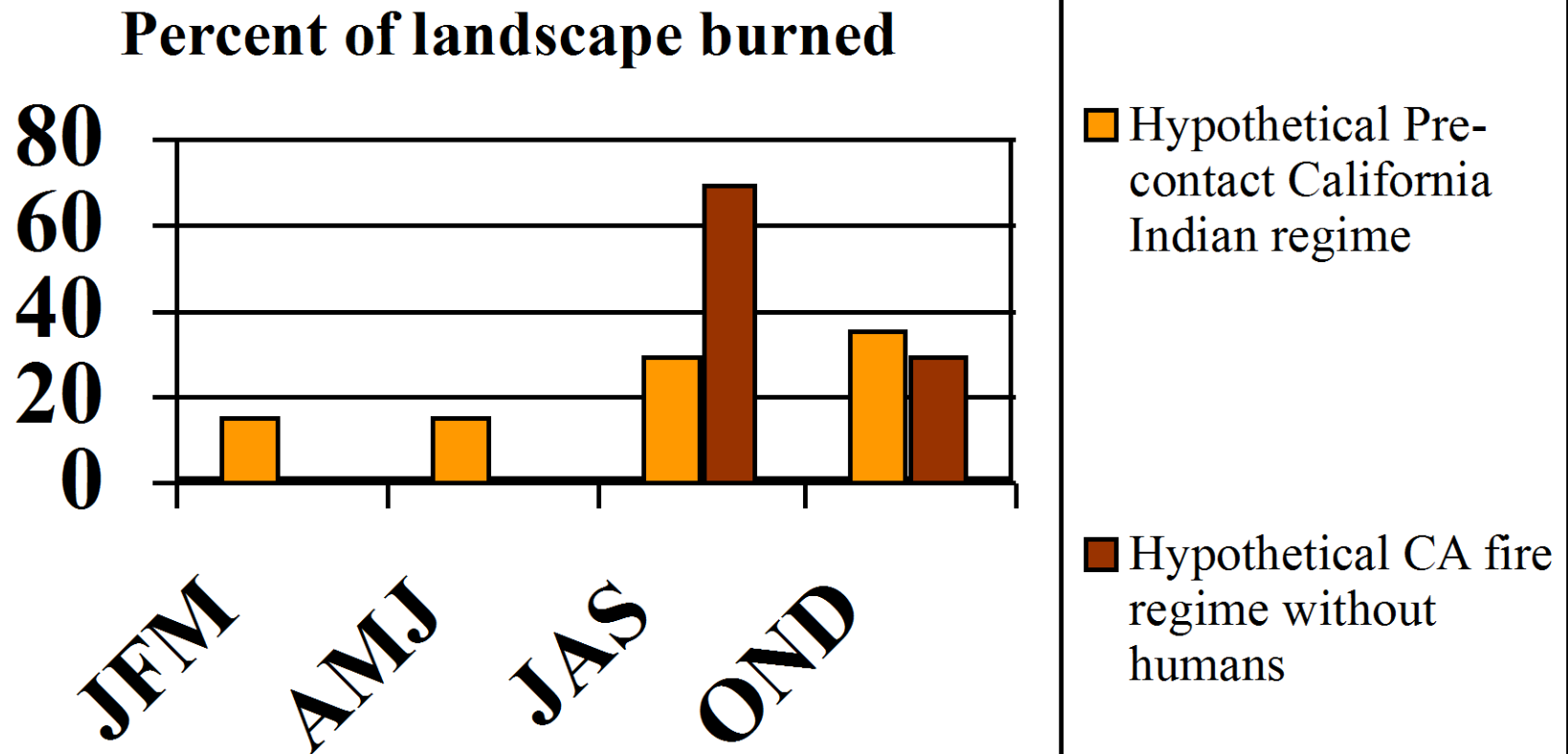
Native Species and Cultural Uses

Common Name	Botanical	Family	Food	Medicine	Fiber
Box elder	<i>Acer negundo</i>	Aceraceae			
Pipevine	<i>Aristolochia californica</i>	Aristolochiaceae		X	
Mugwort	<i>Artemisia douglasiana</i>	Asteraceae		X	
Narrow leaf milkweed	<i>Asclepias fascicularis</i>	Apocynaceae		X	X
Santa Barbara sedge	<i>Carex barbarae</i>	Cyperaceae			X
Field sedge	<i>Carex praegracilis</i>	Cyperaceae			
Wavy-leaf soap plant	<i>Chlorogalum pomeridianum</i>	Agavaceae	X	X	X
Twining Brodea	<i>Dichelostemma volubile</i>	Liliaceae	X		
Oregon Ash	<i>Fraxinus latifolia</i>	Oleaceae			X
Annual sunflower	<i>Helianthus annuus</i>	Asteraceae	X		
Black walnut	<i>Jugulans californica</i>	Juglandaceae	X	X	X
Creeping wild rye	<i>Leymus triticoides</i>	Poaceae	X	X	X
Valley Oak	<i>Quercus lobata</i>	Fagaceae	X	X	X
Mexican elderberry	<i>Sambucus mexicana</i>	Adoxaceae	X	X	X
Poison oak	<i>Toxicodendron diversilobum</i>	Anacardiaceae			
Itherial's spear	<i>Triteleia laxa</i>	Liliaceae	X		





Seasonal Regime Shift



Policy and Management Tool

Traditional Gathering Policy –
“The policy... promotes
ecosystem health and utilizes
traditional management
practices...”



Self Determination PL 93-638
(BIA)

