NOXIOUS WEED
RISK ASSESSMENT

Klamath National Forest

PROJECT NAME: Mt. Ashland LSR Habitat Restoration and Fuels Reduction Project

RANGER DISTRICT: Oak Knoll

COMPARTMENT(S): Cottonwood, Long John, Cow, Sterling, Hungry

Prepared by: _____ Date: _____

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I. Introduction

The Klamath National Forest has placed a high priority on management of noxious weeds, which includes reducing management related introduction and spread of noxious weeds on the Forest (USDA 2001). The purpose of this document is to evaluate the Mt. Ashland LSR Habitat Restoration and Fuels Reduction Project in sufficient detail to determine its effects on noxious weed species. This Risk Assessment follows the standards established in the Forest Service Manual direction (USDA 1995).

A. Location Information

The Mt. Ashland LSR Habitat Restoration and Fuels Reduction Project encompasses all, or portions of the Cottonwood, Long John, Cow, Sterling, and Hungry compartments of the Oak Knoll Ranger District, Klamath National Forest. These compartments are located within the Beaver Analysis Watershed. The project area is north of the Klamath River, and just south of the Siskiyou Crest in the vicinity of Mt. Ashland. The project area lies in the watersheds of Grouse, Beaver, and Long John Creeks. This Risk Assessment analyzes the effects of the proposed project upon noxious weed species within the project area boundaries.

The legal description is:
Willamette Meridian: T40S R1W S.25, 26, 34, 35, 36; T40S R1E Sec. 29, 30, 31, 32; T41S R1W Sec. 1, 2, 3, 10, 11, 12, 13, 14; T41S R1E Sec. 5,6,7,8,18; and T41S R2W S. 5, 6, 7, 8, 17, 18. Mt. Diablo Meridian: T48N R9W S. 13 and 24; and T48N R8W S. 15, 16, 17, 20, 21, 22, and 28.

For a map of the proposed project area, see the *Mt. Ashland LSR Habitat Restoration and Fuels Reduction Project DEIS* (USDA 2007).

B. Noxious Weed List

The California Department of Food and Agriculture (CDFA, 2005), and the Siskiyou County Department of Agriculture manage weeds by use of the same list and risk rating criteria. There are approximately 30 known species of State and County listed noxious and invasive weeds within the Klamath National Forest. The State and County listing process was developed primarily to address agricultural concerns. The California Invasive Plant Council (Cal-IPC) identifies species that may threaten forest and rangeland ecosystems in their *California Invasive Plant Inventory* (Cal-IPC, 2006).

The Klamath National Forest Noxious Weed List (Appendix A) includes high priority plants from the State and County lists that are known or expected to occur on the Klamath National Forest. Based on inventories and current understanding of species' ranges, a total of twenty-four high priority weeds are on the *Klamath National Forest Noxious Weed List*. This list is used for resource management and decision-making, and is subject to change to reflect new information.

II. Current Management Direction

Forest Service Manua1 (FSM) 2080 Noxious Weed Management (USDA 1995) includes a policy statement calling for a risk assessment for noxious weeds to be completed for every project. Specifically, the manual states:

2081.03 -Policy. When any ground disturbing action or activity is proposed, determine the risk of introducing or spreading noxious weeds associated with the proposed action.

1. For projects having moderate to high risk of introducing or spreading noxious weeds, the project decision document must identify noxious weed control measures that must be undertaken during project implementation.

2. Use contract and permit clauses to prevent the introduction or spread of noxious weeds by contractors and permittees. For example, where determined to be appropriate, use clauses requiring contractors or permittees to clean their equipment prior to entering National Forest System lands.

2081.2 -Prevention and Control Measures. Determine the factors that favour the establishment and spread of noxious weeds and design management practices or prescriptions to reduce the risk of infestation or spread of noxious weeds.

Where funds and other resources do not permit undertaking all desired measures, address and schedule noxious weed prevention and control in the following order:

1. First Priority: Prevent the introduction of new invaders,
2. Second Priority: Conduct early treatment of new infestations, and
3. Third Priority: Contain and control established infestations.

III. Description Of Proposed Action

A. Proposed Action

Alternative 2 was designed to meet the purpose and need for action. It will treat 4,706 acres in 256 stands as described below. Activity fuels will be treated in all stands. Road actions consist of maintenance, year-round closures, decommissioning, designating existing unauthorized roads as National Forest System roads, and the construction of temporary spur roads. Some landings will be constructed but existing landings will be used wherever possible. Refer to the Draft EIS for more complete descriptions of project activities and maps.

Restoration Silvicultural Treatments

- Variable density thinning of trees larger than nine inches in diameter at breast height (DBH) on 2589 acres in 158 stands.
- Small diameter thinning of trees 9 inches DBH and below on 408 acres in 16 stands.

Defensible Fuel Profile Zone

- Variable density thinning of trees larger than nine inches DBH on 1286 acres in 49 stands as part of a defensible fuels profile zone along upper slopes and ridges.

Associated Activities

- Weeding and cleaning of understory trees in a subset of the 3,875 acres and 207 stands identified for variable density thinning above (weeding and cleaning will occur as needed on a stand by stand basis).

Restoration Support Actions

- Helicopter systems to remove trees on 1071 acres in 65stands.
- Skyline systems to remove tress on 1602 acres in 75 stands.
- Ground-based equipment systems to remove trees on 1202 acres in 67 stands.

- An estimated 7 existing landings will be used and may be enlarged to accommodate processing of small trees for bio-mass utilization; landing size will not exceed 0.5 acre for each ground-based landing or 1 acre for each helicopter landing.
- An estimated 15 new ground-based system landings, 14 skyline system landings and 11 helicopter landings will be constructed. No new landings will be constructed within Riparian Reserves. Ground-based and skyline landings will be up to a 0.5 acre in size, helicopter landings will be up to 1 acre in size. The total acreage disturbed by landing construction will not exceed 25 acres.
- Landings will be hydrologically restored post-project. If it is determined by an earth scientist that special erosion control measures are needed, they will be implemented on a site by site basis.

Fuels Reduction Treatments

- Whole-tree Removal on slopes less than 45% on 1202 acres in 67 stands.
- Mastication to reduce activity and natural fuels on 809 acres in 51 stands; mastication combined with handpile/burn on 436 acres in 15 stands.
- Hand-pile and burn to reduce activity and natural fuels on 980 acres in 76 stands; handpile and burn followed by underburning on 979 acres in 42 stands.
- Underburning to reduce activity and natural fuels on 1502 acres in 72 stands. Additional underburning will occur outside of stand boundaries to riparian features.
- Underburning to reduce natural fuel build-up in two stands on 120 acres.
- Thinning out small trees and burning piled material to reduce ladder and surface fuels within riparian reserves on 303 acres in 31 stands.

Restoration Support Road Actions

- Change from open to year-round closure:

Road Segment:	**Miles:**
40S09	3.05
40S10 segment	0.82
40S13A	1.72
40S15A	2.20
40S16A	1.01
41S13	0.50
Total Miles:	*9.30*

- Decommission System roads:

Road Segment:	**Miles:**
40S20	.49

- Existing Unauthorized roads put on the System:

Road Segment:	**Miles:**
40S06.2	1.98
40S16.1 segment	0.23
40S16.6	0.12
41S15.1 segment	0.10
Total Miles:	*2.43*

- Existing Unauthorized roads used for the Project: opened, used, hydrologically stabilized and closed:

Road Segment:	**Miles:**
40S09.1A	0.77

40S09.1A1	0.11
40S09.2	0.18
40S12.1	0.15
40S13.1	0.42
40S13.2	0.08
40S14.1	0.12
40S14.2	1.14
40S16.1 segment	0.10
40S16.5 segment	0.04
40S16.5B	0.17
40S20.1	0.47
40S20.1A	0.76
41S07.3	0.80
41S09A.1	0.21
41S10.2	0.07
41S10.3	0.14
41S15.1 segment	0.19
41S15.3	0.73
41S15.3A	0.53
48N30A.1	0.18
48N37.1	0.64
Total Miles:	***8.00***

New Spur Road Construction: construct, use, decommission.

Road Segment:	**Miles:**
T206A	0.27
T206B	0.07
T207	0.43
T216	0.14
T228A	0.19
T228B	0.19
T232	0.06
T235	0.29
T254	0.73
T264	0.11
T266	0.14
T277A	0.16
T300	0.12
T317	0.82
T317	0.31
T320A	0.39
T320B	0.43
T320C	0.36
T374	0.14
T380	0.45
T383	0.2
T401	0.86
Total Miles:	***6.86***

B. Resource Protection Measures

Mitigation for weed species of concern has been designed into the proposed action. These measures are designed to prevent the introduction of new weed species locations into the project area as a result of the project activities.

1) C Provision C6.36 Equipment Cleaning, (5/01), will be included in the contract whenever heavy equipment is used to treat fuels, and in the timber sale contract.
2) Wherever seed and/or straw is used to restore areas of ground disturbance, certified weed free seed and straw will be specified in the contract.

IV. Existing Environment

A. Inventory and Mapping

Invasive Plant Inventory, Monitoring, and Mapping Protocol (NRIS) is being implemented on the Klamath National Forest. The Forest Noxious Weed Database was used for information on noxious weed sites that are currently mapped within or adjacent to the project area. Inventory in the project area was conducted in 2002 by the Forest Noxious Weed program, and in 2005 during TES plant surveys. Surveyors were trained in the identification of the target species. Surveys were timed to correspond with the season in which the species could be most readily identified.

No listed noxious weed populations are currently known from within the project area boundary. The closest population is known from approximately ¾ mile outside the project area boundary.

SPECIES FOUND	POPULATION LOCATION	LEGAL LOCATION
Yellow starthistle	Outside project area boundary, near intersection Hungry and Beaver Creeks.	T48N R8W Sec. 28

B. Species Accounts

Yellow starthistle – *Centaurea solstitialis* – CESO3

This annual species in the Aster family was introduced from Europe. It produces numerous seed heads that produce seed in the fall, and new plants germinate in the spring and flower in the summer. It requires moderately warm, exposed or disturbed areas where there is little competition from other species. It does not readily invade shady, forested, or wet areas. Human activities are the primary mechanisms for the long-distance movement of yellow starthistle seed. Seed is primarily transported by vehicles and road construction/maintenance equipment and by contaminated hay and straw. Seed is transported in lesser amounts over short to medium distances by animals and humans by seed that clings to fur and clothing. Seed is not readily wind dispersed. (Bossard et.al. 2000)

V. Effects Of The Alternatives

A. Interactions Important to Risk Assessment Analysis

The following risk assessment was developed to standardize the process for determining the risk of introducing or spreading noxious weeds associated with a project. For projects having a moderate to high risk of introducing or spreading noxious weeds, the project decision document must identify noxious weed control measures that must be undertaken during project implementation (FSM 2081.03).

Table 1: Risk Assessment by Factor

Factors	Components	Variations	Risk
1. Known Noxious Weeds	***Yellow star thistle is not present within project area or immediately adjacent. Yellow starthistle present ~ ¾ mi. outside project area.***	**None present, none adjacent →** None present, weeds adjacent along access routes → Weeds present, and adjacent →	**Low risk** Moderate risk High risk
2. Habitat Vulnerability	***Forested habitat, no recent disturbance, high plant & soil cover, shade.***	**High cover, low disturbance →** Moderate cover, disturbance → Open uninfested habitat and/or high previous disturbance→	**Low risk** Moderate risk High risk
3. Non-project dependent Vectors	***Moderate existing roads and some livestock use.***	Minimal current vectors → **Moderate current vectors →** Abundant current vectors →	Low risk **Moderate risk** High risk
4. Habitat Alteration Expected as a result of Project	***Thinning prescriptions, underburns, and handpiling retain cover. Temporary road construction.***	Low disturbance; minimal shade and duff removal → **Moderate disturbance, shade and duff removal →** High ground disturbance, shade and duff removal →	Low risk **Moderate risk** High risk
5. Increased Vectors as a result of Project Implementation	***Temporary road construction; project crew related traffic, road closure and decommissioning.***	**No access improvement; minimal project-related traffic →** Minimal road construction; short-term traffic increase → Road or facility construction →	**Low risk** Moderate risk High risk

Analyzing Weed Response to Proposed Project

The narrative below is an expansion of the table above, analysing each factor in relation to the proposed project to derive an assessment of the level of risk. The factors in the table are evaluated individually as well as cumulatively. For example, if no weeds are present in the

project area but weeds are adjacent and the habitat is not considered vulnerable to establishment (e.g. forest), then the overall rating would be low. If the habitat in this scenario was vulnerable (e.g. grassland or disturbed) the overall rating would be moderate to high depending on how the other factors rated out

1. ***Known Noxious Weeds Present:*** There are currently no known weed populations within the project area boundary. One species, yellow starthistle, is currently known to occur along an access road leading to the proposed project areas. It is approximately ¾ mile from the project area boundary. There are no weed populations known in the vicinity of the proposed road activities. The lack of seed sources within the project area boundary or immediately adjacent along access roads poses a **low** risk for noxious weed infestation from local sources. There is a low potential for seed to be transported by vehicles along roads from the closest known sites outside the project area.

2. ***Habitat vulnerability:*** There has been no recent habitat disturbance within the project area. The current plant cover is composed of a heavily forested mixed conifer or Douglas fir forest. This habitat type is typically less susceptible to noxious weed infestation than more open types. The high canopy cover and heavy duff layer prevents the easy introduction of noxious weeds. This represents a **low** risk level.

3. ***Non-project Dependant Vectors:*** Non-project related vectors considered in this assessment include the potential transfer of seed by wind, vehicle use of the existing roads and the spread of seed by livestock use of the area. Seed can be transferred from infested areas to non-infested areas by wind, vehicles equipment using the roads (most often in the tire tread), and in animal's fur and digestive tracts. Starthistle seed however, does not spread more than a maximum of 16 ft. by wind (Brossard et. al. 2000). There are many roads within the project area; however the level of use of these roads by vehicles is light. Livestock use does occur within the units. Seed can be spread by animals' fur short distances. These vectors combined pose a **moderate** risk of introducing noxious weeds from outside the project area into the project site.

4. ***Habitat Alteration Expected as a Result of Project Implementation:***

Overstory thinning prescriptions: The openings created under dense canopies from the proposed thinning prescriptions are not likely to be subjected to invasion by weeds due to the preservation of shade and duff levels which inhibits germination of starthistle seeds. It is expected that a fully stocked timber stand will remain after timber harvest. Starthistle does not invade or persist in areas with moderate to high vegetative cover. Tractor timber harvest can create openings that are vulnerable to invasion by weeds and the risk is greater in these units than those that will use helicopter or cable harvest systems.
Understory thinning prescriptions: Thinning of small diameter understory trees will have little effect on the spread of noxious weeds. The remaining small diameter trees combined with the overstory layer will create shading levels adequate to suppress the introduction of new noxious weeds.
Shaded fuel breaks: Fuel breaks have the potential to create habitat conditions in which noxious weeds can invade and spread. A recent study in California (Merriam 2006) found that the rate of weed introduction was greatest in fuel breaks constructed by bulldozers and in which all vegetation was removed. The rate of weed introduction was lowest in fuel breaks in which overstory canopy was retained (thinning or shaded fuel breaks) and in which a fuel break was not constructed by removing all duff and litter down to bare mineral soil. In this

project, the defensible fuel profile zones (DFPZ) will be constructed by thinning from below, and ground fuels will be treated by methods that retain adequate litter, duff, and coarse woody debris levels to meet soil protection standards. Noxious weeds are not likely to become introduced from outside the project area into these areas.
Fuel treatments: Fuel treatments can have an effect on the introduction of noxious weeds (Merriam 2004). Studies have found that canopy cover is an important factor in the establishment of non-native plant species (Rejmanek 1989). All the proposed treatment units will retain adequate overstory, understory, shrub and forb layers and area likely to suppress noxious weed invasions. Fuel treatments that handpile and underburn fuels treatment methods pose a low risk since the treatment prescriptions are designed to retain adequate soil cover to prevent erosion. Retaining adequate soil cover will reduce the likelihood that new infestations can occur. Mastication fuel treatment methods cause greater levels of ground disturbance which is generally offset by the greater mulch levels created by masticated material on the soil surface, which can reduce the germination of invasive species which require open, disturbed ground.
Road construction activities: Construction of temporary roads causes the greatest habitat alteration that can allow invasion by weeds. Decommissioning these roads afterwards, and permanently closing or decommissioning other roads is likely to offset the increase in risk from the temporary road construction.

Overall, there will be a moderate amount of habitat alteration within the project area, primarily in the tractor harvest units and temporary road construction areas, and there will be a **moderate** risk of invasion by weeds.

5. *Increased Vectors as a Result of Project Implementation:* New temporary road construction is planned in this project. New road construction is one of the primary contributors to noxious weed invasion (D'Antonio et al. 1999). These roads will be decommissioned after use, however. Quickly decommissioning roads, seeding with native grasses, and mulching with weed-free straw will reduce the likelihood that the new temporary roads will become vectors for noxious weed spread. Most introduced noxious weeds do not compete well in the presence of heavy mulch layers and where natives quickly establish vegetative cover. The temporary increase of vehicle and equipment traffic due to workers necessary for the project will be short-term.

Almost 10 miles of road within the project area will be changed to year-round closure, or permanently closed by decommissioning. This will reduce the amount of roads vulnerable to weed invasions. There will an overall short-term increase in vectors due to temporary road construction, and a long-term decrease. Overall, his represents a **low** risk for the introduction of noxious weeds.

6. *Project Mitigation Measures:*
Inventory – Has been completed.
Prevention –
A) Include C Provision C6.36 Equipment Cleaning, (5/01), in the contract whenever heavy equipment is used to treat fuels, and in the timber sale contract.
B) Wherever seed and/or straw is used to restore areas of ground disturbance, certified weed free seed and straw should be specified in the contract.
Control – None currently required.
Monitoring – The project area should be monitored, as part of the Forest noxious weed program, for 3 years after the project is completed or as long as it takes the vegetation to recover from the disturbance (as measured by ground duff cover and forb and shrub layer cover).

7. *Anticipated Weed Response to the Project* – There is a low risk of introduction of noxious weeds into the project area.

8. *Overall level of risk for the project:* When project mitigation measures are applied, the overall level of risk for the project is **low**. Utilization of the equipment washing C-clause will ensure that new weeds are not introduced into the project area by equipment. Using weed free seed and straw will also prevent the introduction of new weed populations.

The project area will retain a fully stocked timber stand after completion of the project. The high level of shading and the retention of duff and litter levels sufficient to meet Best Management Practices for ground cover will prevent the easy introduction of weeds into areas with ground disturbance.

Monitoring of the project area will ensure that any noxious weeds that may be introduced into the area can be quickly controlled by hand pulling methods.

B. Effects of the No Action Alternative (Alternative 1)

In this alternative, current management plans would continue to guide management of the project area. No commercial thinning, fuels reduction activities, pre-commercial thinning or roadwork would be implemented to accomplish project objectives. Stand development and fuel dynamics currently occurring in the project area will continue. The effects to noxious weeds in this alternative are related to the increased risk of wildfire that would result from the No Action alternative. Excess fuel levels would not be reduced in this alternative.

There is a higher risk of noxious weed invasion from the effects of a stand replacing wildfire that could reduce the level of live canopy cover and ground cover levels. Because the one known site of a noxious weed is located ~ ¾ mile outside the project boundary, this increased risk would still be low. Yellow starthistle is not likely to be transported this distance in the event of a wildfire. There is an overall **low risk** of noxious weed introduction and spread from this alternative.

C. Effects of the Proposed Action Alternative (Alternative 2)

In this alternative, adequate overstory and understory vegetative cover and ground cover levels will be retained to minimize the risk of noxious weed introduction and spread within the project area. Mitigation measures to reduce the introduction of weed seeds on equipment and straw will be incorporated into project contracts. Overall, there will be a **low risk** of noxious weed introduction and spread from this alternative.

D. Effects of Alternative 4

In this alternative, the effects to noxious weeds will be the same as that from Alternative 2.

E. Effects of Alternative 5

In this alternative, the effects to noxious weeds will be the same as that from Alternative 2.

References

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USDA, Forest Service (USFS). October 22, 2001. Prepared by Ken Coop and Anne Yost. *Noxious and Invasive Weeds Program Strategy, Northern Province.* USFS, Shasta-Trinity and Klamath National Forests. Redding and Yreka, California.

USDA Forest Service 2007. *Mt. Ashland LSR Habitat Restoration and Fuels Reduction Project Draft Environmental Impact Statement*. Supervisor's Office, Klamath National Forest, Yreka, CA. 2007.

APPENDIX A
Klamath National Forest Noxious Weed List

Scientific Name (Jepson 1993)	Plants Code	Common Name(s)	CDFA Rating *	Cal-IPC Rating*	Family
Acroptilon repens (L.) DC.	ACRE3	Russian knapweed	B	Moderate	Asteraceae
Cardaria draba (L.) Desv.	CADR	Heart-podded hoary cress, Whitetop	B	Moderate	Brassicaceae
Cardaria chalapensis (L.) Hand.-Maz	CACH10	Lens-podded Whitetop	B	Moderate ♦	Brassicaceae
Carduus nutans L.	CANU4	Musk thistle	A	Moderate	Asteraceae
Carduus pycnocephalus L.	CAPY2	Italian thistle Plumeless Italian thistle	C	Moderate	Asteraceae
Centaurea diffusa Lam.	CEDI3	Diffuse knapweed, white knapweed	A	Moderate	Asteraceae
Centaurea maculosa Lam.	CEMA4	Spotted knapweed	A	High	Asteraceae
Centaurea x pratensis Thuill.	CEPR2	Meadow knapweed	A	Moderate ♦	Asteraceae
Centaurea solstitialis L.	CESO3	Yellow starthistle	C	High	Asteraceae
Centaurea squarrosa Wild.	CESQ	Squarrose knapweed	A	Moderate	Asteraceae
Chondrilla juncea L.	CHJU	Rush skeleton weed, hogbite	A	Moderate	Asteraceae
Cirsium arvense (L.) Scop.	CIAR4	Canada thistle	B	Moderate	Asteraceae
Cynoglossum officinale L.	CYOF	Houndstongue	Q	Moderate	Boraginaceae
Cytisus scoparius (L.) Link.	CYSC4	Scotch broom	C	High	Fabaceae
Euphorbia esula L.	EUES	Leafy spurge	A	High ♦	Euphorbiaceae
Genista monspessulana (L.) L. Johnson	GEMO2	French broom	C	High	Fabaceae
Hypericum perforatum L.	HYPE	Klamath weed, St. John's wort	C	Moderate	Hypericaceae
Isatis tinctoria L.	ISTI	Dyer's woad, Marlahan mustard	B	Moderate	Brassicaceae
Lepidium latifolium L.	LELA2	Perenn. pepperweed, tall whitetop	B	High	Brassicaceae
Linaria dalmatica (L.) P. Mill ssp. *dalmatica*	LIDAD	Dalmation toadflax	A	Moderate	Schropulariaceae
Lythrum salicaria L.	LYSA2	Purple Loosestrife	B	High	Lythraceae
Onopordum acanthium L.	ONAC	Scotch thistle, Cottonthistle	A	High	Asteraceae
Onopordum tauricum Willd.	ONTA	Taurian thistle, Bull cottonthistle	A	None	Asteraceae
Salvia aethiopis L.	SAAE	Mediterranean sage	B	Limited	Lamiaceae

APPENDIX A

Pest Ratings:
California Dept. of Food and Agriculture (CDFA):

A: Eradication, containment, or entry refusal at State level.
B: Species more widespread. County Ag. Commissioner discretion on eradication, containment or control.
C: Species very widespread. County Ag. Commissioner discretion on eradication, containment or control.
Q: Rating as "A" is pending at the State or County level.

California Invasive Plant Council (Cal-IPC):

High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive but their ecological impacts are minor on a state-wide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

♦ = Alert

References:

California Department of Food and Ag; Pest Ratings of Noxious Weed Species, 2004, from Website:
http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-pestrating.htm
Cal-IPC; California Invasive Plant Inventory, February, 2006.
The Jepson Manual, 1993; University of California Press, James Hickman, Editor