

Prevention of Exotic Invasive Species Introduction

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*Making a Difference
for California*

The seal of the University of California is visible in the background of the yellow box. It features a central figure holding a book and a torch, surrounded by the text 'THE UNIVERSITY OF CALIFORNIA' and the motto 'EUREKA' at the top.

Alien/exotic, invasive noxious plant species are:

- Native of another continent, often Europe or Asia; natural enemies not present here
- Very competitive with other plant species
- Efficient at reproduction
- Very difficult to control
- Well adapted to a wide range of environments

How Invasive Weeds are Introduced and Spread

- Animals and birds
- Humans – on boots, clothing, tires
- Wind and water
- Escaped ornamental plants
- On equipment – vehicles, dozers, etc.
- In materials – gravel, straw, etc.

Animals and Birds

- On fur
- In droppings



Wind and Water

Sesbania seed pods can float
in streams for 10 days !



Escaped Ornamentals



Dalmatian toadflax



Scotch broom



Moved by Humans

- Clothing
- Boots
- Tires/equipment
- Relocating plants



Vulnerable to invasion: Land Disturbing Projects

- Building construction
- Road construction and improvements



Land Disturbing Projects

- Landscaping
- Fire prevention
 - Fuels reduction
 - Fire breaks
 - Defensible space



Land Disturbing Projects

What makes these projects vulnerable to invasive weed infestations?

- Seed “bank” –waiting for optimal conditions
- Bare ground – invasives love open areas
- Seeds/plant parts moved by equipment

Prevention Best Management Practices for Transportation and Utility Corridors



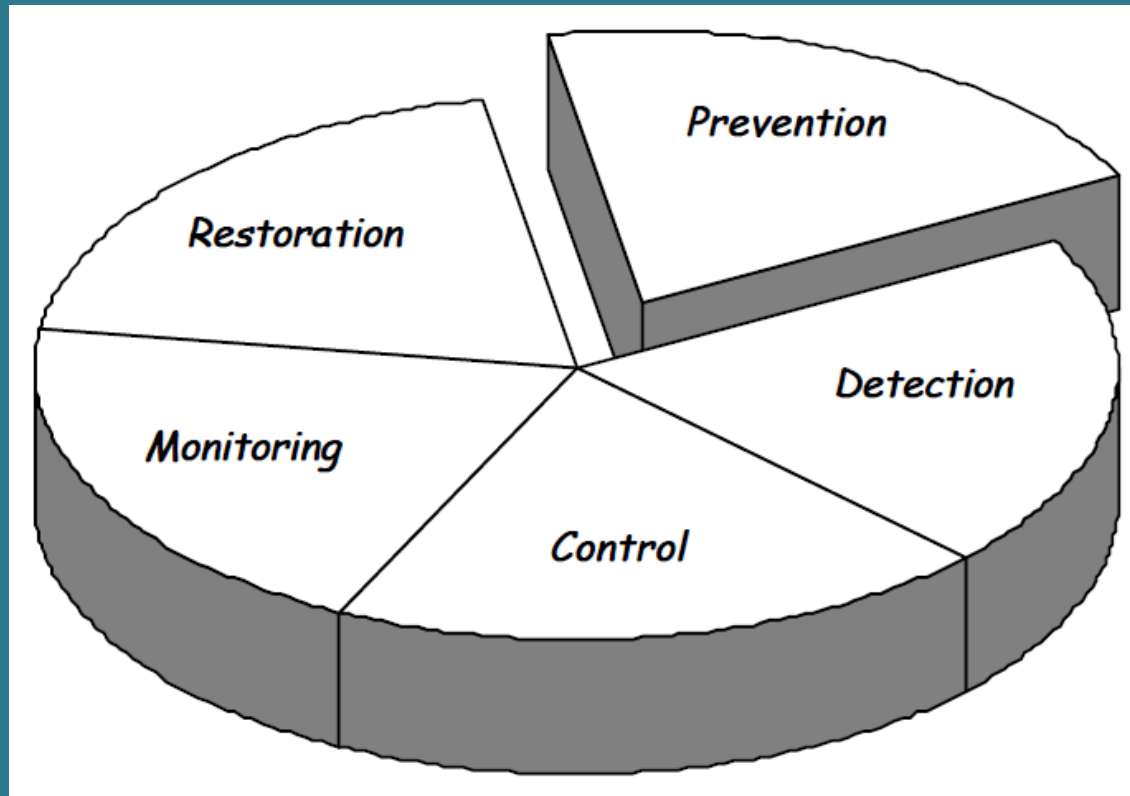
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Prevention

Our first line of defense



Prevention BMPs

Goal: To prevent accidental introduction and spread of invasive plants

Preventing the Spread of Invasive Plants:



Best Management Practices
for Land Managers

California Invasive Plant Council

Two Prevention BMP Manuals:

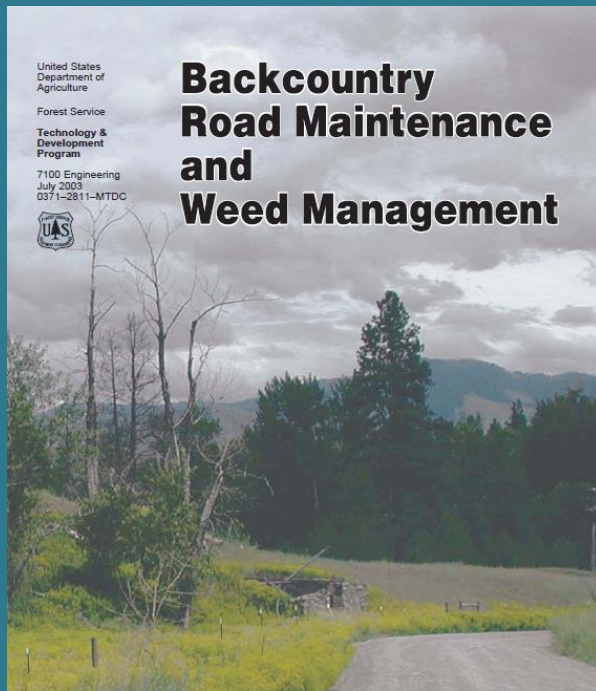
1. for Land Managers
2. for Transportation and Utility Corridors

Why Transportation and Utility Corridors?

1. Vehicles, equipment, people and animals can inadvertently spread invasive plant parts and seeds.
2. Construction and maintenance activities can create suitable conditions for invasive plants
3. Established populations can be sources of invasive plant spread



BMP Manual Development



1. Gathered reference documents.
2. Compiled existing BMPs.
3. Invited and engaged our Technical Team.
4. Review and edit.

Prevention BMP Manual

Section I

Introduction

Prioritization
for BMPs

Pre-Activity
Assessment

Section II

Manual
Chapters

BMP
Statements

Considerations

Section III

Checklists

BMPs by
Activity &
Phase

Inspection &
Cleaning
Checklist

Prevention BMPs

for Transportation and Utility Corridors

Manual Chapters: Activities

1. General BMPs
2. Planning
3. Materials Management
4. Vegetation Management
5. Soil Disturbance
6. Revegetation and Landscaping
7. Routine Maintenance and Facility Inspection

General BMPs

1. Training
2. Early detection
3. Scheduling
4. Cleaning
5. Minimize disturbance
6. Monitoring



Training for staff

General BMPs – Ch. 1

GN3: Schedule activities to minimize potential for introduction and spread of invasive plants.

- a. Consider the timing of invasive plant control efforts; determine whether planned efforts should occur before, during or after the activity based on the plant life cycle.
 - When feasible, schedule land-disturbing activities to occur before invasive plants set seeds to minimize spreading seeds of invasive plants. Keep in mind that seeds may be present in the soil.
 - Consider invasive plant reproductive biology and response to fire when planning prescribed burns.
 - Coordinate the timing of maintenance activities and weed control activities when feasible. For example, delay blading roads until two weeks after herbicide application and delay spraying after blading until vegetative regrowth has occurred.

GN 7: Clean tools, equipment and vehicles before entering a work site

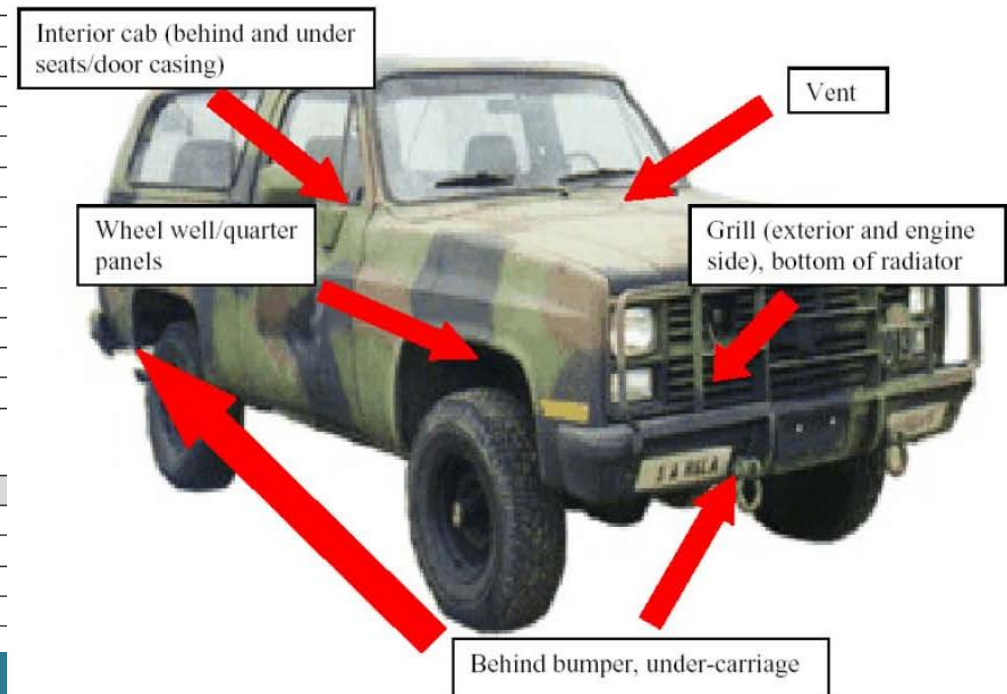
Checklist C. Inspection and Cleaning Checklist

Clothing and Gear:

Check for soil, seeds, and plant material	Inspected	Cleaned
1. Hats		
2. Hoods		
3. Collars		
4. Clothing folds or flaps		
5. Ventilation openings		
6. Pockets		
7. Zippers		
8. Straps or Velcro grips		
9. Belts or Buckles		
10. Buttons, fasteners, and rivets		
11. Laces or ties		
12. Gloves		
13. Pant cuffs		
14. Socks		

Boots or Shoes:

Check for soil, seeds, and plant material	Inspected	Cleaned
1. Shoelaces or ties		
2. Straps or Velcro grips		
3. Shoe tongues		
4. Treads		



Prevention Guidelines

- Locate and use weed-free equipment staging areas
- Start in non-infested area and then move to infested areas



Prevention Guidelines

- Inspect and remove plant parts from equipment before leaving an infested site



Equipment inspection training at El Dorado Irrigation

Ch. 2 - Planning

1. Prevention policy
2. Risk evaluation
3. Integration of BMPs
4. Coordination
5. Site assessment
6. Monitoring plans



Document invasive plants

http://calweedmapper.calflora.org

1. Data
2. Management Opportunities
3. Commenting & updating
4. Modeling potential spread

home | maps | how to | spatial data | plant profiles | about | contact

CalWeedMapper BETA

Map the Spread
CalWeedMapper provides a dynamic tool for mapping invasive plant distribution at the landscape level using expert knowledge. [Learn more about how to use the maps >>](#)

Submit Spatial Data
Contribute your GIS or observation data to Calflora for plant occurrences. [Learn more about submitting spatial data and how our systems work together >>](#)

News and Events

- » 20th Annual Cal-IPC Symposium
- » We're in Beta! Send us feedback.
- » Strategic Planning Meetings

CalWeedMapper enables natural resource managers, scientists and others to:

- ✓ **Create** maps and reports of invasive plant distribution
- ✓ **Identify** management opportunities in a county, WMA or region
- ✓ **Update** species distribution data

go to maps >>

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Ch. 3 - Materials Management



Vectors = hay, nursery materials, soil, mulch, gravel
USE WEED-FREE MATERIALS

Prevention Guidelines

- Use weed-free materials - fill, gravel, sand, mulch, straw, etc.



Weed-Free Forage and Straw Suppliers - California

Disclaimer: These suppliers provide certified weed free forage and straw inspected and certified by local County Agricultural Commissioners.
Please contact Wendy West 530.621.5533 or wkwest@ucdavis.edu, if omissions are noted.

CALIFORNIA (Alphabetized by County)					December 2011
Alameda	Phone	Street	City	Zip	Product
Bay Area Hay & Feed	925-389-6005	101 N. Greenville Rd	Livermore	94550	alfalfa cubes/pellets
EJ Cattle & Feed Supply	925-960-9074	7900 Carneal Rd	Livermore	94551	alfalfa cubes/pellets
Livermore Feed & Farm	925-447-4203	3170 Fourth St	Livermore	94550	alfalfa cubes/pellets
Rancher's Outlet	209-245-6631	6980 Hwy 16	Plymouth	95669	alfalfa cubes/pellets
Western Saddlery	800-833-5085	7038 Commerce Cir	Pleasanton	94588	alfalfa cubes/pellets
Amador					
Feed Barn	209-223-2809	11261 Prospect Dr	Jackson	95642	alfalfa cubes/pellets
Butte					
Big D's Hay & Feed Barn	530-534-9026	42 She-Yo Ln	Oroville	95966	alfalfa cubes/pellets
Kumbak Ranch Feed	530-679-1011	5690 La Porte Rd	Bangor	95914	alfalfa cubes/pellets
Northern Star Mills	530-342-7661	510 Esplanade	Chico	95926	alfalfa cubes/pellets
Skyview Feed & Pet	530-877-1019	677 Birch St	Paradise	95969	alfalfa cubes/pellets
Calaveras					
Country Feed & More	209-754-9100	833 G Hwy 49	San Andreas	95249	alfalfa cubes/pellets
McDillard's Feed	209-785-8000	3566 Spangler Ln #1	Copperopolis	95228	alfalfa cubes/pellets
Spence Ranch Feed & Supply	209-736-4310	1291 N Hwy 49	Altaville	95221	alfalfa cubes/pellets

California at www.cal-ipc.org – Prevention Page
 Nevada at http://agri.nv.gov/Plant/Noxious_Weeds/Noxious_Weeds_Home/



CERTIFIED WEED FREE GRAVEL

What is certified weed free gravel?

It is gravel, sand, rock or top soil that has been mined and provided from a pit or other source that is free of any viable plants of any of the weed species listed on either Nevada's or the Federal Noxious Weed Lists. These pits were visually inspected to ensure compliance with the Nevada Department of Agriculture's and North American Weed Management Association's (NAWMA) standards.

What gravel products can be certified?

- Sand
- Gravel
- Rock
- Top Soil

How can you get your gravel materials or piles certified?

Contact the Nevada Department of Agriculture. The first inspection can take place during the warm seasons. If the pit is clean after the first inspection then the pit must be inspected again as determined by the state inspector. If the pit contains some weeds that needed to be addressed, then the pit may require another inspection after 60 days to ensure no propagative parts are viable

Contact Information

Jamie Greer
Weed Free Certification Program
Coordinator
775-353-3640
jgreer@agri.nv.gov



LINKS FOR ADDITIONAL INFORMATION

[Certified Weed Free Program Overview](#)

[Nevada's Certified Weed Free](#)

Ch. 4 - Vegetation Management



Don't be a vector!

Ch. 5 - Soil Disturbance



Implement erosion control practices.

Ch. 6 Revegetation and Landscaping



Revegetate and/or mulch disturbed soils as soon as possible.



Ch. 7 - Routine Maintenance and Inspection of Facilities



Monitor for BMP effectiveness

BMP Checklists by Activity

Checklist B: Routine Vegetation Maintenance							
BMP #	BMP Statements	Management	Project Management	Supervisors	Crews	Completed	Comments
VM1	Schedule vegetation management activities to maximize the effectiveness of control efforts and minimize introduction and spread of invasive plants.						
RM1	Identify prevention priorities with resource, facility, or corridor managers prior to starting work.						
VM2	Develop a mowing policy to minimize the introduction and spread of invasive plants.						
RM6	Develop brush control policy along access roads to minimize the introduction and spread of invasive plants.						
GN1	Provide prevention training and appropriate invasive plant identification resources to staff and contractors prior to starting work.						
RM5	Carry portable cleaning tools that can be used without water.						
GN6	Plan travel routes to avoid areas infested with invasive plants.						
RM3	Identify travel direction and cleaning locations prior to starting work.						
RM2	Document invasive plant findings and communicate to resource or facility managers.						
RM4	Designate lay-down and staging areas outside of infested areas prior to starting work.						
GN4	Designate specific areas for cleaning tools, vehicles, equipment, clothing and gear.						
GN5	Designate waste disposal areas for invasive plant materials and contain invasive plant materials during transport.						
GN7	Clean tools, equipment, vehicles and animals to remove soil, seeds and plant parts before transporting materials and before entering and leaving worksites.						

Prevention is the key!

- Protect agriculture
- Protect recreational areas
- Protect land values
- Protect wildlife habitat and plant diversity
- Decrease threats from fire

Resources:

California Invasive Plant Council
www.cal-ipc.org
Prevention Section

Lake Tahoe Basin Weed Coordinating Group
www.tahoeinvasiveweeds.org

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