

Attachment 4.A

Invasive Species Control and Management Plan



This document provides an outline for an Invasive Species Control/Management Plan (ISCP) for the clients of Clearwater Ag Services. The ISCP will be implemented as an integral part of the applicant's Commercial Cannabis Cultivation project.

Listed below are the steps to ensure the goals of this plan are met.

1. Identify the Project Area

The project area is confined to the commercial cannabis project parcel as stated in the CCLUO 55.4.12.16. Invasive Plant Species will be removed from the cultivation site and related infrastructure using techniques described in this document.

2. Identify the Target Species

The staff of Clearwater Ag Services will work with the applicant to identify potential invasive plant species on their parcel using the CAL-IPC Inventory, research documentation as well as color identifying photos. Many non-native plant species are not necessarily invasive species as these plants do not interrupt the natural ecosystem and coexist with native plant species. Invasive species negatively threaten the environment and often displace native plant species. As part of the ISPC, all available resources will be utilized and local knowledge, informational attachments, as well as online access to color identification photos will aid the applicant in continuing the identification of potentially invasive species.

3. Establish a Baseline for Management

This will require a physical survey of the parcel to determine the scope of the invasive species present as well as the abundance of the invasive species identified. A simple mapping of the parcel with detailed locations of (each) potential invasive species will create a comprehensive starting point for management techniques.

4. Determine Control Options for Each Invasive Species Identified

Several control options exist for eradication of invasive species; including Biological, Mechanical and Chemical. At times, it may be necessary to utilize a combination of control techniques to ensure control over a long period of time.

- Biological Eradication could be used as a first line of defense for control of invasive species. The use of competitive planting and creating an environment for native species to thrive will increase the chances of long-term control. In some cases, the reintroduction of native species plants create a host for insects and microorganisms which will feed on the invasive species and/or create an

environment which will discourage new growth of the invasive plant. Many invasive species invade an area of recent disturbance such as soil displacement, by using native grasses and plants as well as natural and weed-free erosion control products, the invasive species will be unable to entrench the exposed soil.

- Mechanical Eradication is the most common short-term option for the eradication of invasive plant species. The removal of many of these invasive plants can be done by hand, such as Scotch Broom; which can be removed most efficiently in the Spring time, as the entire root system can be pulled easily from the soil. Hand pulling can be an ongoing process as invasive plant species, as well as their most common areas, are identified; the growth as well as the population can be more effectively managed when the plants are small. The use of mechanical tools such as weed whackers, tractors and cutting tools may be required to eradicate some species such as the Himalayan Blackberry, which is common in our area and cannot be effectively or completely removed by hand.
- Chemical Eradication will be considered a last resort, if it will be considered at all, as most of our applicant's commercial cannabis projects use organic and natural growing techniques that never include the use of chemicals.

5. Disposal Methods

As the invasive species are eradicated, they will be completely secured within black plastic garbage bags, this will effectively prevent any chance of seed or propagation of new invasive growth. The invasive species will begin rapid decomposition within the bags and will be taken to a proper disposal site such as the Redway Transfer Station or the Humboldt Waste Management Facility in Eureka.

6. Preventative Control Techniques

Applicant will implement preventative measures to ensure the invasive plant species will not enter the project site. Applicant will use caution when bringing any type of cultivation products to the site to ensure that possible contamination of seed or plant materials that can propagate will not enter the parcel. Vehicles will be maintained, inspected, and cleaned before entering and/or exiting the parcel to eliminate the presence of possible invasive plants species and/or invasive plant materials.

If erosion control is necessary on the cultivation site, only native species and certified weed-free products will be used. Cover crops and compost will be inspected for any type of invasive plant species and will be properly disposed of if found to contain any type of invasive plant species seed or the possibility of propagation.

7. Ongoing Assessment

The parcel will be regularly monitored for invasive species which will help ensure that invasive species in any stage of growth will be identified, controlled and, if possible, removed before its spread.

8. Awareness of Updates and/or Changes

Clearwater Ag Services staff will work with applicant to stay up-to-date on regulations for the removal and eradication of invasive plant species, including but not limited to, updates on new Invasive species, changes in the severity of the scope of invasion, as well as new eradication techniques in the industry.

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The Cal-IPC Inventory

The Inventory categorizes plants that threaten California's natural areas. The Inventory includes plants that currently cause damage in California (invasive plants) as well as "Watch" plants that are a high risk of becoming invasive in the future (designated with an asterisk). For information about the Inventory, see "Inventory Details" below.

[INVENTORY DETAILS ▾](#)

Using the Inventory table:

- Click a plant's scientific name to see its risk assessment. For the Plant Profile page with more information about a given plant, click the icon in the far right column.
- "Hort" denotes plants that are known from horticulture; "CWM" links to the CalWeedMapper page for the plant; "ID card" links to an identification card for the plant.
- To sort the table, click on any column heading. To list only plants from certain Jepson Regions or Habitat Types, use the filters below.
- "Watch" species (denoted with an *) are not currently invasive in California. Assessment has found them to be a high risk for becoming invasive in the future.

Use the buttons below to choose plants to display by region, habitat, and whether the plant is designated an invasive plant or a watch plant.

[Clear Filters](#)

Jepson Regions

ALL

CA Floristic Province (CA-FP)

Cascade Range (CaR)

Central West (CW)

Great Valley (GV)

Northwest (NW)

Sierra Nevada (SN)

Southwest (SW)

Great Basin Province (GB)

Modoc Plateau (MP)

Sierra Nevada East (SNE)

Desert Province (D)

Mojave Desert (DMoj)

Sonoran Desert (DSon)

Habitat Types

Marine Systems

Freshwater and Estuarine Aquatic Systems

Dunes

Scrub and Chaparral

Grasslands, Vernal Pools, Meadows, and other Herb Communities

Bog and Marsh

Riparian and Bottomland habitat

Woodland

Forest

Alpine Habitats

Invasive or Watch

Invasive Plants

Watch Plants

Scientific name	Rating	File	
<i>Acacia dealbata</i>	Moderate	✓	
<i>Acacia melanoxylon</i>	Limited	✓	
<i>Acroptilon repens</i>	Moderate		
<i>Aegilops triuncialis</i>	High		
<i>Agrostis avenacea</i>	Limited		
<i>Agrostis stolonifera</i>	Limited	✓	
<i>Ailanthus altissima</i>	Moderate	✓	
<i>Alternanthera philoxeroides</i>	High		
<i>Ammophila arenaria</i>	High		
<i>Anthoxanthum odoratum</i>	Limited		
<i>Arctotheca calendula</i>	Moderate	✓	
<i>Arctotheca prostrata</i>	Moderate	✓	
<i>Arundo donax</i>	High	✓	
<i>Asparagus asparagoides</i>	Moderate	✓	
<i>Avena fatua</i>	Moderate		
<i>Bellardia trixago</i>	Limited		
<i>Brachypodium distachyon</i>	Moderate		
<i>Brachypodium sylvaticum</i>	Moderate		
<i>Brassica nigra</i>	Moderate		
<i>Brassica rapa</i>	Limited		
<i>Brassica tournefortii</i>	High		
<i>Briza maxima</i>	Limited	✓	
<i>Bromus diandrus</i>	Moderate		
<i>Bromus hordeaceus</i>	Limited		
<i>Bromus japonicus</i>	Limited		
<i>Bromus madritensis ssp. rubens</i>	High		
<i>Bromus tectorum</i>	High		
<i>Cakile maritima</i>	Limited		
<i>Carduus acanthoides</i>	Limited		

Scientific name	Rating	Profile	
<i>Carduus nutans</i>	Moderate		
<i>Carduus pycnocephalus</i>	Moderate		
<i>Carduus tenuiflorus</i>	Limited		
<i>Carpobrotus chilensis</i>	Moderate	✓	
<i>Carpobrotus edulis</i>	High	✓	
<i>Carthamus lanatus</i>	High		
<i>Centaurea calcitrapa</i>	Moderate		
<i>Centaurea diffusa</i>	Moderate		
<i>Centaurea jacea</i> ssp. <i>pratensis</i>	Moderate		
<i>Centaurea melitensis</i>	Moderate		
<i>Centaurea solstitialis</i>	High		
<i>Centaurea stoebe</i> ssp. <i>micranthos</i>	High		
<i>Centaurea virgata</i> var. <i>squarrosa</i>	Moderate		
<i>Chondrilla juncea</i>	Moderate		
<i>Cirsium arvense</i>	Moderate		
<i>Cirsium vulgare</i>	Moderate		
<i>Conicosia pugioniformis</i>	Limited		
<i>Conium maculatum</i>	Moderate		
<i>Cordyline australis</i>	Limited	✓	
<i>Cortaderia jubata</i>	High	✓	
<i>Cortaderia selloana</i>	High	✓	
<i>Cotoneaster franchetii</i>	Moderate	✓	
<i>Cotoneaster lacteus</i>	Moderate	✓	
<i>Cotula coronopifolia</i>	Limited	✓	
<i>Crataegus monogyna</i>	Limited	✓	
<i>Crocasmia x crocosmiiflora</i>	Limited	✓	
<i>Crupina vulgaris</i>	Limited		
<i>Cynara cardunculus</i>	Moderate	✓	

Scientific name	Rating	Profile	
<i>Cynodon dactylon</i>	Moderate	✓	
<i>Cynoglossum officinale</i>	Moderate	✓	
<i>Cynosurus echinatus</i>	Moderate		
<i>Cytisus scoparius</i>	High	✓	
<i>Cytisus striatus</i>	Moderate	✓	
<i>Dactylis glomerata</i>	Limited	✓	
<i>Delairea odorata</i>	High	✓	
<i>Descurainia sophia</i>	Limited		
<i>Digitalis purpurea</i>	Limited	✓	
<i>Dipsacus fullonum</i>	Moderate	✓	
<i>Dipsacus sativus</i>	Moderate		
<i>Dittrichia graveolens</i>	Moderate		
<i>Echium candicans</i>	Limited	✓	
<i>Egeria densa</i>	High	✓	
<i>Ehrharta calycina</i>	High		
<i>Ehrharta erecta</i>	Moderate		
<i>Eichhornia crassipes</i>	High	✓	
<i>Elaeagnus angustifolia</i>	Moderate	✓	
<i>Elymus caput-medusae</i>	High		
<i>Erica lusitanica</i>	Limited	✓	
<i>Erodium cicutarium</i>	Limited	✓	
<i>Eucalyptus camaldulensis</i>	Limited	✓	
<i>Eucalyptus globulus</i>	Limited	✓	
<i>Euphorbia oblongata</i>	Limited	✓	
<i>Euphorbia virgata</i>	High		
<i>Faliopia japonica</i>	Moderate		
<i>Faliopia sachalinensis</i>	Moderate		
<i>Festuca arundinacea</i>	Moderate	✓	
<i>Festuca myuros</i>	Moderate		

Scientific name	Rating	Profile	
<i>Festuca perennis</i>	Moderate		
<i>Ficus carica</i>	Moderate	✓	
<i>Foeniculum vulgare</i>	Moderate	✓	
<i>Genista monspessulana</i>	High	✓	
<i>Geranium dissectum</i>	Limited		
<i>Glyceria declinata</i>	Moderate		
<i>Hedera canariensis</i>	High	✓	
<i>Hedera helix</i>	High	✓	
<i>Helichrysum petiolare</i>	Limited	✓	
<i>Helminthotheca echioides</i>	Limited		
<i>Hirschfeldia incana</i>	Moderate	✓	
<i>Holcus lanatus</i>	Moderate	✓	
<i>Hordeum marinum</i>	Moderate		
<i>Hordeum murinum</i>	Moderate		
<i>Hydrilla verticillata</i>	High		
<i>Hypericum canariense</i>	Moderate	✓	
<i>Hypericum perforatum</i>	Limited	✓	
<i>Hypochaeris glabra</i>	Limited		
<i>Hypochaeris radicata</i>	Moderate		
<i>Ilex aquifolium</i>	Limited	✓	
<i>Iris pseudacorus</i>	Limited	✓	
<i>Isatis tinctoria</i>	Moderate	✓	
<i>Kochia scoparia</i>	Limited	✓	
<i>Lepidium chalepense</i>	Moderate		
<i>Lepidium draba</i>	Moderate		
<i>Lepidium latifolium</i>	High		
<i>Leucanthemum vulgare</i>	Moderate	✓	
<i>Ligustrum lucidum</i>	Limited		
<i>Limnobium spongia</i>	High		

Scientific name	Rating	Profile	
<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	Moderate		
<i>Linaria vulgaris</i>	Moderate	✓	
<i>Lobularia maritima</i>	Limited	✓	
<i>Ludwigia peploides</i>	High	✓	
<i>Lythrum hyssopifolium</i>	Moderate		
<i>Lythrum salicaria</i>	High	✓	
<i>Marrubium vulgare</i>	Limited	✓	
<i>Medicago polymorpha</i>	Limited		
<i>Mentha pulegium</i>	Moderate	✓	
<i>Mesembryanthemum crystallinum</i>	Moderate	✓	
<i>Myoporum laetum</i>	Moderate	✓	
<i>Myosotis latifolia</i>	Limited	✓	
<i>Myriophyllum aquaticum</i>	High	✓	
<i>Myriophyllum spicatum</i>	High		
<i>Nicotiana glauca</i>	Moderate	✓	
<i>Olea europaea</i>	Limited	✓	
<i>Onopordum acanthium</i>	High	✓	
<i>Oxalis pes-caprae</i>	Moderate		
<i>Parentucellia viscosa</i>	Limited		
<i>Pennisetum clandestinum</i>	Limited		
<i>Pennisetum setaceum</i>	Moderate	✓	
<i>Phalaris aquatica</i>	Moderate	✓	
<i>Phoenix canariensis</i>	Limited	✓	
<i>Phytolacca americana</i>	Limited	✓	
<i>Plantago lanceolata</i>	Limited	✓	
<i>Poa pratensis</i>	Limited	✓	
<i>Polypogon monspeliensis</i>	Limited		
<i>Potamogeton crispus</i>	Moderate		
<i>Prunus cerasifera</i>	Limited	✓	

Scientific name	Rating	Profile	
<i>Pyracantha angustifolia</i>	Limited	✓	
<i>Ranunculus repens</i>	Limited	✓	
<i>Raphanus sativus</i>	Limited		
<i>Ricinus communis</i>	Limited	✓	
<i>Robinia pseudoacacia</i>	Limited	✓	
<i>Rubus armeniacus</i>	High	✓	
<i>Rumex acetosella</i>	Moderate	✓	
<i>Rumex crispus</i>	Limited		
<i>Rytidosperma penicillatum</i>	Limited		
<i>Saccharum ravennae</i>	Moderate	✓	
<i>Salsola soda</i>	Moderate		
<i>Salsola tragus</i>	Limited		
<i>Salvia aethiopis</i>	Limited	✓	
<i>Saponaria officinalis</i>	Limited	✓	
<i>Schinus terebinthifolius</i>	Moderate	✓	
<i>Schismus barbatus</i>	Limited		
<i>Senecio glomeratus</i>	Moderate		
<i>Senecio jacobaea</i>	Limited		
<i>Sesbania punicea</i>	High	✓	
<i>Silybum marianum</i>	Limited	✓	
<i>Sinapis arvensis</i>	Limited		
<i>Sisymbrium irio</i>	Limited		
<i>Spartina densiflora</i>	High		
<i>Spartium junceum</i>	High	✓	
<i>Stipa manicata</i>	Limited		
<i>Stipa miliacea</i> var. <i>miliacea</i>	Limited		
<i>Tamarix aphylla</i>	Limited	✓	
<i>Tamarix parviflora</i>	High	✓	
<i>Tamarix ramosissima</i>	High	✓	

Scientific name	Rating	Profile	
<i>Tanacetum vulgare</i>	Moderate	✓	
<i>Tetragonia tetragonioides</i>	Limited		
<i>Torilis arvensis</i>	Moderate		
<i>Tribulus terrestris</i>	Limited		
<i>Trifolium hirtum</i>	Limited		
<i>Ulex europaeus</i>	High		
<i>Verbascum thapsus</i>	Limited	✓	
<i>Vinca major</i>	Moderate	✓	
<i>Washingtonia robusta</i>	Moderate	✓	
<i>Watsonia meriana</i>	Limited	✓	
<i>Zantedeschia aethiopica</i>	Limited	✓	
<i>Zostera japonica</i>	Moderate		

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IPCW | Common Names

Common Name: The plants are listed in alphabetical order by the most often used common name. Click on the scientific name for more information about the plant. You may also use the "search" box above to find a plant by name or any attribute such as "thorn" or "tuber".

Tamarix spp.

Ailanthus altissima

ailanthus; tree-of-heaven

Aptenia cordifolia

apple, baby sun rose, heartleaf
iceplant, dew plant

Cynara cardunculus

artichoke thistle, cardoon, desert
artichoke, wild artichoke

Atriplex semibaccata

Australian saltbush

Bassia hyssopifolia

bassia, five-hook bassia, thorn
orache, five-horn smotherweed

Robinia pseudoacacia

black locust

Eucalyptus globulus

blue gum, Tasmanian blue gum,
common eucalyptus

Schinus terebinthifolius

Brazilian pepper tree, Christmas-
berry tree, Christmasberry, Florida
holly

Retama monosperma

bridal veil broom

Cirsium vulgare

bull thistle, spear thistle

Alhagi pseudalhagi

camelthorn, camels thorn, camel-thorn, Caspian manna, Persian manna

Cirsium arvense

Canada thistle, California thistle, creeping thistle, corn thistle, perennial thistle, field thistle

Arctotheca calendula

capeweed, South African capeweed, cape dandelion, cape gold

Ricinus communis

castor bean

Bromus tectorum

cheatgrass, downy brome, downy cheat, downy chess, early chess, drooping brome, cheatgrass brome, wild oats, military grass

Spartina anglica

common cordgrass

Verbascum thapsus

common mullein, wooly mullein, great mullein, mullein, Jacob's staff, flannel leaf, velvet plant, candlewick plant, lung wort, felt wort

Cotoneaster spp.

cotoneaster, silverleaf cotoneaster, crystalline iceplant, common iceplant, rock spray cotoneaster

Mesembryanthemum crystallinum***Erechtites spp.***

cutleaf fireweed, cutleaf burnweed, dense-flowered cordgrass, New Zealand fireweed, Australian burnweed; Australian fireweed, little fireweed, coastal burnweed, Australian burnweed

Spartina densiflora***Ficus carica***

edible fig, common fig

Egeria densa

egeria, leafy elodea, dense waterweed, Brazilian waterweed, anacharis, Brazilian elodea

Hedera helix***Ageratina adenophora***

English ivy eupatory, Crofton weed, sticky
snakeroot, catweed, hemp agrimony,
sticky agrimony, sticky eupatorium

Myriophyllum spicatum

Eurasian watermilfoil, spike
watermilfoil

Ammophila arenaria

European beachgrass

Foeniculum vulgare

fennel, anise, sweet fennel,
aniseed, sweet anise, sweet
fennel

Pennisetum setaceum

fountain grass, crimson
fountaingrass

Digitalis purpurea

foxglove, purple foxglove

Bromus madritensis ssp. rubens

foxtail chess; red brome, compact
brome, Spanish brome

Genista monspessulana

French broom, soft broom, canary
broom, Montpellier broom

Tamarix gallica

French tamarisk

Delaisia odorata

German ivy

Arundo donax

giant reed, giant cane

Ulex europaea

gorse, common gorse

Halogeton glomeratus

halogeton

Phalaris aquatica

Harding grass

Helichrysum petiolare

helichrysum, licorice plant

Carpobrotus edulis

highway iceplant, Hottentot fig,
iceplant

Rubus discolor

Himalayan blackberry,
Himalayaberry

Hydrilla verticillata

hydrilla, water thyme, Florida
elodea

Carduus pycnocephalus

Italian thistle, slender thistle, shore
thistle, Italian plumeless thistle

Cortaderia jubata

jubata grass, pampas grass,
Andes grass, selloa pampas
grass, cortaderia, pink pampas
grass, purple pampas grass

Euphorbia esula

leafy spurge, wolf's milk

Cardaria chalapensis

lens-podded hoary cress

Schismus spp.

Mediterranean grass, Arabian
schismus, schismus, split grass

Bellardia trixago

Mediterranean linseed, garden
bellardia

Taeniatherum caput-medusae

medusahead

***Myoporum
laetum***

myoporum, ngaio tree (New
Zealand)

Conicosia pugioniformis

narrow-leafed iceplant, false
iceplant, conicosia

Tamarix chinensis

none

Leucanthemum vulgare

ox-eye daisy, marguerite, moon
daisy, dog daisy

Cortaderia selloana

pampas grass, Uruguayan
pampas grass

Myriophyllum aquaticum

parrot[™]s feather, parrot feather
watermilfoil, Brazilian water milfoil

Mentha pulegium

pennyroyal

Lepidium latifolium

perennial pepperweed; tall white top,
broadleaved pepperweed

Ehrharta spp.

perennial veldt grass; ehrharta,
panic veldt grass; annual veldt
grass

Vinca major

periwinkle, bigleaf periwinkle

Conium maculatum***Cytisus striatus***

poison hemlock, scarlet fern, Portuguese broom,
poison parsley, spotted hemlock

Lythrum salicaria

purple loosestrife

Centaurea calcitrapa

purple starthistle, red star thistle, red
starthistle, St. Barnaby's thistle,
golden starthistle

Elaeagnus angustifolia

Russian olive, oleaster

Brassica tournefortii

Sahara mustard, Asian mustard

Spartina patens

salt-meadow cordgrass

Cytisus scoparius

Scotch broom, English broom,
common broom

Crataegus monogyna

single-seed hawthorn, whitethorn

Tamarix parviflora

smallflower tamarisk, tamarisk, four-
stamen tamarisk

Spartina alterniflora

smooth cordgrass

Spartium junceum

Spanish broom, gorse, weaver's
broom

Tamarix ramosissima

tamarisk, saltcedar

Senecio jacobaea

tansy ragwort, stinking willie

Centaurea melitensis

toicolote, Maltese star thistle, Napawater hyacinth, common water
star thistle, Malta starthistle

Eichhornia crassipes

hyacinth

Cardaria draba

white top, perennial pepper-grass, yellow bush lupine, coastal bush
heart-podded hoary cress, lupine
pepperwort, white-top,
pepperweed whitetop, hoary
cress, whitetop, white weed

Lupinus arboreus***Centaurea solstitialis***

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