

BAY FRIENDLY LANDSCAPE SOLUTIONS

WEEDS

PLANT WEED COMPETITORS *NOT WEEDS* - Plants that produce many viable seeds or with aggressive surface or underground growth have the potential to become weeds. Many of these species are well known. Plants at the Pittsburg Bay Friendly Garden that may become somewhat invasive, but are currently performing well include freeway daisy (*Osteospermum fruiticosum*), Santa Barbara daisy (*Erigeron karvinskianus*) and sea lavender (*Limonium perezii*).

Examples of potential weeds that are sold in nurseries and should be avoided include ivies (*Hedera spp.*), spurge (Euphorbiaceae), grasses like crimson fountain grass (*Pennisetum setaceum*) broom species (*Cytisus spp.* & *Spartium junceum*), and others.

MULCH provides triple benefits from maintaining organic, decomposing mulches on soil surfaces; weed suppression, water conservation and nutrient supply. Sheet mulching increases the benefits. See <https://www.marinwater.org/158/Sheet-Mulching-Guide> for more details.

LOCAL SOILS

KNOW YOUR SOILS - go to the CA Soil Resource Lab Soil Web App <http://casoilresource.lawr.ucdavis.edu/gmap/>, plug your site's address in and note the name and characteristics of the mapped soil series; texture, structure and root depth is crucial.

USE ADAPTED PLANTS - match new plantings to soil characteristics especially texture and structure. Below are some examples of plants that tolerate specific characteristics of soils;

- slow drainage; fig, asparagus, grapes, pear, valley oak
- fast drainage; strawberry, citrus, ceanothus, manzanita, blue oak
- Alkaline pH; Italian stone pine, Canary island date palm, pride of Madeira, Australian saltbush

























RECYCLED WATER

TEST SOIL ANNUALLY & MANAGE SOILS - Salts build-up in and on soils and can destroy structure and kill plants. Annual evaluation allows for modifications in water use, plant selections, leaching & liming. Here is a list of Northern California Soil Labs updated in 2016 <http://cesonoma.ucanr.edu/files/27431.pdf>. Some recent proposed management guidelines can be found at <https://www.caufc.org/ABAG%20Matheny%20July%209%20Handouts.pdf>

USE ADAPTED PLANTS - Many species have known tolerances for sodium, chloride, boron, nitrates and other charged particles that are found in high levels in recycled water. One excellent guide to use in choosing plants for use with recycled water is http://www.salinitymanagement.org/Salinity%20Management%20Guide/cp/cp_4.html. Studies are ongoing on problem species like coast redwood (*Sequoia sempervirens*), which is not tolerant of recycled water use. Most turf types are very tolerant of recycled water.

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SPECIFIC WEED MANAGEMENT OPTIONS

WEED NAME	TYPE OF PLANT	LIFE CYCLE	NON-CHEMICAL	CHEMICAL TREATMENTS
<i>Little malva (cheeseweed)</i>	BROADLEAF	<i>Annual-perrenial</i>	<ul style="list-style-type: none">  Mulch  Mulch fabric  Hula hoe  Long handled hoe  Hand weed  Green flame  Competitive plantings 	<p>POST (selective – use in turf)</p> <ul style="list-style-type: none">  iron HEDTA  triclopyr  quinclorac - mecoprop not recommended, it is a carcinogen - dicamba not recommended, it is a reproductive toxin <p>(non-selective – use in landscape)</p> <ul style="list-style-type: none">  clove, lemongrass oils  glufosinate ammonium  nonanoic acid
<i>Dandelion</i>	BROADLEAF	<i>Perennial (edible) Seed & root fragments spread Germinates year round with light & moisture</i>	<ul style="list-style-type: none">  Manual removal – entire root best  Spot treat root pieces in ground with sodium chloride  Regular cultivation (non-turf)  Three inches of mulch (non-turf)  Fertilize to turfgrass needs  Eat it in salad, cook with garlic 	<p>POST (young plants)</p> <ul style="list-style-type: none">  iron HEDTA  sodium chloride  aquatic formulation of glyphosate with soybean oil surfactant  triclopyr - 2,4-D not recommended suspected endocrine disruptor & possible carcinogen - MCPA not recommended, suspected carcinogen <p>PRE (soil applied)</p> <ul style="list-style-type: none">  dithiopyr (selective) - corn gluten not recommended, does not appear to work well in CA - isoxaben not recommended, suspected endocrine disruptor & possible carcinogen

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RECYCLED WATER is high in salts including plant nutrients such as nitrogen, phosphorous and potassium. They also have elevated levels of minerals that plants only need in very small amounts including sodium, chloride, boron and bicarbonate. These elements can cause damage to plants that are not tolerant of elevated levels. How water is applied makes a difference in terms of salt damage. Sprinkler irrigation can be manipulated to minimize damage by varying throw and timing. Drip irrigation is very useful for avoiding foliar damage, but does require the use of filters and frequent cleaning.

TIPS:

- Irrigate (overhead) during the evening or night to reduce salt absorption by plant leaves.
- Direct sprinkler heads to minimize water hitting trunks or leaves.
- Test drip irrigation frequently for clogging, and clean as needed.
- Apply only the amount of water that your species needs. Use the Water Use Classifications of Landscape Species (WUCOLS) manual, available on-line at <http://ucanr.edu/sites/WUCOLS/> to find plant and its water needs.

SUCCESSFUL PLANTS IN PITTSBURG USING RECYCLED WATER FROM DELTA DIABLO STUDY 2004

TREES – EVERGREEN

Beefwood (<i>Casuarina stricta</i>)	Mexican pinon pine (<i>Pinus cembroides</i> 'Edulis')	Chinese tallow tree (<i>Sapium sebiferum</i>)
Blackwood acacia (<i>Acacia melanoxylon</i>)	Mugo pine (<i>Pinus mugo</i>)	Common horsechestnut (<i>Aesculus hippocastanum</i>)
Cajeput tree (<i>Melaleuca quinquenervia</i>)	Norfolk Island pine (<i>Araucaria heterophylla</i>)	English oak (<i>Quercus robur</i>)
Dwarf blue gum (<i>Eucalyptus globulus</i> 'Compacta')	Olive (<i>Olea europaea</i>)	Fremont cottonwood (<i>Populus fremontii</i>)
Italian cypress (<i>Cupressus sempervirens</i>)	Dwarf olive (<i>Olea europaea</i> 'Little Ollie' & 'Montra')	Idaho locust (<i>Robinia ambigua</i> 'Idahoensis')
Evergreen ash (<i>Fraxinus uhdei</i>)	Fruitless olive (<i>Olea europaea</i> 'Swan Hill')	Italian alder (<i>Alnus cordata</i>)
Flaxleaf paperbark (<i>Melaleuca linarifolia</i>)	Prickly melaleuca (<i>Melaleuca styphelioides</i>)	Norway maple (<i>Acer platanoides</i>)
Heath melaleuca (<i>Melaleuca ericifolia</i>)	River she oak (<i>Casuarina cunninghamina</i>)	Paper birch (<i>Betula papyrifera</i>)
Hollyleaf laurel (<i>Prunus illicifolia</i>)	White ironbark (<i>Eucalyptus leucoxylon</i> 'rosea')	Purple leaf plum (<i>Prunus cerasifera</i>)
Indian laurel (<i>Ficus mircocarpa</i>)		Red oak (<i>Quercus rubra</i>)
Italian stone pine (<i>Pinus pinea</i>)		Siberian elm (<i>Ulmus pumila</i>),
Maritime pine (<i>Pinus pinaster</i>)		Texas umbrella tree (<i>Melia azedarach umbraculiformis</i>).

TREES - DECIDUOUS

American ash (*Fraxinus americana*)

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PALMS /PALM-LIKE PLANTS

Bush fan palm (*Chamaerops humilis*)
 Canary Island date palm (*Phoenix canariensis*)
 CA fan palm (*Washingtonia filifera*)
 Date palm (*Phoenix dactylifera*)

Sonoran fan palm (*Washingtonia robusta*)

SHRUBS

African box (*Myrsine africana*)
 Blue cape plumbago (*Plumbago auriculata*)
 Bush germander (*Teucrium fruticans*)
 Bottlebrush (*Callistemon citrinus*)
 Bougainvillea (*Bougainvillea spectabilis*)
 Coyote brush (*Baccharis pilularis*)
 Chinese hibiscus (*Hibiscus rosa-sinensis*)
 Escallonia (*Escallonia 'Fradesii'*)
 Garden snowberry (*Symphiocarpus alba var. laevigatus*)
 Heath melaleuca (*Melaleuca ericifolia*)
 Hollywood juniper (*Juniperus chinensis*)
 India hawthorn (*Raphiolepis indica 'Clara' & 'Springtime'*)
 Japanese boxwood (*Buxus microphylla 'Japonica'*)
 Mirror plant (*Coprosoma repens*)

Oleander (*Nerium oleander*)
 Pacific Wax Myrtle (*Myrica californica*)
 Pyracantha (*Pyracantha graeberi*)
 Purple hop Bush (*Dodonea viscosa ('Purpurea')*)
 Squaw bush (*Rhus trilobata*)
 Sydney wattle (*Acacia longifolia*)
 Skyrocket Juniper (*Juniperus virginiana 'Skyrocket'*)
 Toyon (*Heteromeles arbutifolia*)
 Yeddo Hawthorn (*Rhaphiolepis umbellata*)

GROUNDCOVERS

Breath of heaven (*Coleonoma pulchrum 'Sunset Gold'*)
 Creeping Coprosoma (*Coprosoma kirkii*)
 Iceplants
 Lavender pink iceplant (*Drosanthemum hispidum*)
 Trailing iceplant (*Lampranthus spectabilis*)
 White iceplant (*Delosperma alba*)
 Lavendar cotton (*Santolina chamaecyparissus*)
 Lippia (*Lippia canescens 'repens'*)
 Jackman's Portulaca (*Portulaca fruticosa 'Jackmanii'*)
 Rosemary (*Rosemary officinalis 'Collingwood Ingram'*)
 Sprengen fern (*Asparagus densiflorus 'Sprengen'*)
 Turf grasses
 Tall fescue dwarf varieties (*Festuca arundinacea*)

Buffalograss (*Buchloe dactyloides*)
 Hybrid bermudagrass (*Cynodon spp.*)
 Perennial ryegrass
 Salty alkaligrass (*Pucinellia distans*)

PERENNIALS

African iris (*Diets irioides*)
 Alkali sacaton (*Sporobolus airoides*)
 Asparagus (*Asparagus officinalis*)
 Blue wildrye (*Elymus glaucus*)
 California fescue (*Festuca californica*)
 Cleveland sage (*Salvia clevelandii*)
 Deergrass (*Muhlenbergia rigens*)
 Feather Reed Grass (*Calamagrostis x acutiflora 'Karl Foerster'*)
 Madagascar periwinkle (*Catharanthus roseus*)
 Purple needlegrass (*Nasela pulchra*)
 Sea Thrift (*Aremeria maritima*)

VINES

*Passion flower (*Passiflora jamesonii 'Coral Seas'*)
 *Virginia creeper (*Parthenocissus quinquefolia*)

ANNUALS

Tomato (*Lycopersicon lycopersicum*)
 Red beet (*Beta vulgaris*)