

§ 131. Vegetation.

(a) The following definitions apply to this section:

(1) Oversize levee. "Oversize levee" means a levee which encompasses the minimum oversized levee cross-section which has a width of thirty (30) feet at design freeboard elevation and standard levee slopes. (See Figure 8.10.)

(2) Standard size levee. "Standard size levee" means a levee which does not meet the requirements for an oversize levee.

(3) Standard levee slopes. "Standard levee slopes" means the landside levee slope is two (2) horizontal feet to one (1) vertical foot and the water-side levee slope is three (3) horizontal feet to one (1) vertical foot.

(b) Suitable vegetation, if properly maintained, is permitted within an adopted plan of flood control.

(c) Vegetation must not interfere with the integrity of the adopted plan of flood control, or interfere with maintenance, inspection, and flood fight procedures.

(d) With the exception of naturally occurring vegetation which the owner of the underlying land has no responsibility to maintain, any vegetation which interferes with the successful execution, functioning, maintenance or operation of the adopted plan of flood control, must be removed by the owner. If the owner does not remove such vegetation upon request, the board reserves the right to have the vegetation removed at the owner's expense.

(e) Tables 8.3 through 8.6 indicate common types of vegetation considered suitable and unsuitable for planting on levees. Other types of vegetation, not listed in Tables 8.3 through 8.6, may be approved if determined to be similar to listed suitable species or not detrimental to the integrity, operation, or maintenance of the adopted plan of flood control.

(f) Vegetation and vegetation maintenance standards for levees are as follows:

(1) Vegetation is not permitted on the levee crown roadway. Only properly maintained grasses or suitable ground covers are permitted on other portions of the levee crown.

(2) Vegetation growing on levee slopes but infringing onto the levee crown must be trimmed or sprayed to prevent interference with flood fight, maintenance, or inspection activities.

(3) Tree branches extending above the levee crown or above the area within ten (10) feet of the levee toe, must be pruned to maintain a minimum of twelve (12) feet vertical clearance above the levee crown and above the area within ten (10) feet of the levee toe.

(4) Tree branches above levee slopes must be pruned and maintained so that the distance from the levee slope to the lowest branches, measured normal to the levee slope, is a minimum of five (5) feet.

(5) Trees are not permitted on the crown or slopes of a standard size levee or within ten (10) feet of the toe of a standard or oversize levee. Planted trees must be set back a sufficient distance from the levee toe to conform with the requirements of subdivision (f)(3) of this section throughout the life of the tree.

(6) Trees are permitted on oversize levee slopes according to the following additional criteria:

(A) Trees considered suitable and unsuitable for oversize levees are listed in Tables 8.3 and 8.4 respectively.

(B) Trees which will exceed fifty (50) feet in height when mature are not permitted.

(C) Trees are permitted on the waterside levee slope of oversize levees up to a point five (5) vertical feet below the design flood plane.

(D) Trees that, in the judgment of the board, threaten to disturb revetment on levee slopes or interfere with maintenance must be removed.

(E) Fruit and nut trees are not allowed.

(7) Trees, vines, bushes, shrubs, or any other form of woody or herbaceous vegetation that grow in a dense form and prevent visual inspection of the levee slope and toe, produce fruit or nuts that attract burrowing rodents, or are thorny and could interfere with flood fight efforts, are not permitted on the levee or within ten (10) feet of the levee toe.

(8) Sod, grasses, perennial flowers, and other nonwoody ground covers are permitted on levee slopes and within ten (10) feet of the levee toe if the height of the vegetation does not exceed twelve (12) inches. Ground covers considered suitable and unsuitable on levee slopes and within ten (10) feet of the levee toe are listed in Tables 8.5 and 8.6, respectively. In areas where vehicular access is maintained along the levee toe, ground covers are generally not permitted.

For ground covers with specific maintenance requirements (see Table 8.5):

(A) The permittee is responsible for maintaining the ground cover at a height less than one (1) foot;

(B) The maintaining agency reserves the right to mow the groundcover without prior notification if the height exceeds one (1) foot;

(C) Any irrigation system for the ground cover must be designed to not interfere with mowing;

(D) Ground covers that are required by this subdivision to be mowed are generally allowed only on the upper twenty (20) feet of levee slope.

(9) Thick-stemmed, extremely dense or woody ground covers are not permitted on levee slopes or within ten (10) feet of the levee toe.

(10) Flower gardens where the height of the vegetation does not exceed twelve (12) inches and which are compatible with flood fight procedures, maintenance, and inspection programs are permitted within ten (10) feet of the levee toe.

(g) Vegetation and vegetation maintenance standards for floodways and bypasses are as follows:

(1) Vegetation is permitted within revetment on streambanks unless, in the judgment of the board, it becomes a threat to the integrity of the revetment.

(2) Invasive or difficult-to-control vegetation, whether naturally occurring or planted, that impedes or misdirects floodflows is not permitted to remain on a berm or within the floodway or bypass.

(3) The board may require clearing and/or pruning of trees and shrubs planted within floodways in order to minimize obstruction of floodflows.

(4) Trees and brush that have been cut down must be burned or removed from the floodway prior to the flood season.

(h) Orchards are not permitted within bypasses but may be planted within other floodways in accordance with the following criteria:

(1) If an orchard is abandoned, all trees must be removed and burned or disposed of outside the floodway prior to flood season.

(2) Trees or brush cut prior to planting an orchard must be removed and burned or disposed of outside the floodway prior to flood season.

(3) Orchard cuttings and any debris that may accumulate in the orchard during the flood season must be removed from the floodway, or must be disposed of in such a manner as to leave no floatable debris within the floodway. Cuttings and other debris must regularly be burned or removed and disposed of outside the floodway throughout pruning activities so as to leave no floatable debris within the floodway.

(4) Dead trees, stumps, prunings, or other agricultural debris may not be placed on the levee section or within ten (10) feet of the levee toe.

(5) Tree rows must be parallel to the direction of the overbank flow and may not direct the flow toward the levee.

(6) The spacing between rows must be a minimum of sixteen (16) feet perpendicular to the overbank flow of the stream. The row spacing must be increased if, in the judgment of the board, additional space is necessary for the passage of floodflows.

(i) Vegetable gardens are not permitted on the levee slope. Vegetable gardens may be permitted within ten (10) feet of the levee toe where they will not interfere with maintenance and inspection and meet the following conditions:

(1) No large bushy plants such as corn, tomatoes, grapes and peas are within ten (10) feet of the levee toe;

(2) There is not a maintenance access road along the levee toe;

(3) The adjacent levee slope is not sprayed with herbicide by the maintaining agency; and

(4) The levee is not experiencing burrowing rodent activity. If there is burrowing rodent activity in the immediate vicinity, the vegetable garden permittee shall control the rodents to the satisfaction of the Board or remove the garden.

(j) Irrigation of vegetation on levee slopes must conform to the following criteria:

(1) Permanently installed irrigation systems are permitted on both slopes of oversize levees and on the landside slope of standard size levees.

(2) Surface low pressure drip irrigation systems may be used on either the landside or waterside levee slope.

(3) Any water applied to vegetation on the levee slope by any means must be controlled to prevent erosion of the levee slope.

(4) Ditches may not be dug in the levee section, within ten (10) feet of the levee toe, or within the projected levee section for irrigation or drainage.

(5) Watering basins around trees must be limited to a maximum depth of twelve (12) inches.

(6) Permanently installed irrigation pipes may be buried but may be no deeper than eight (8) inches into the levee slope.

(7) A readily accessible shutoff or control valve is required in the supply line of all irrigation systems. The valve must be located a minimum of ten (10) feet landward of the levee toe and must be clearly identified for levee maintenance or flood fight personnel.

(8) Pipes supplying water to permanently installed sprinkler heads must be of approved material such as galvanized iron, schedule 40 polyvinyl chloride (PVC), class L copper, or equivalent. Aluminum pipe is not permitted.

(k) The board may permit, with appropriate conditions, existing non-conforming vegetation after considering a number of factors, including but not limited to:

(1) Age of vegetation;

(2) Type of vegetation;

(3) Location of vegetation;

(4) Size of vegetation;

(5) Physical condition of vegetation;

(6) Whether the vegetation was planted or is naturally occurring;

(7) Condition of the adopted plan of flood control;

(8) Environmental value of the vegetation; and

(9) Ability to inspect and maintain the levee around the vegetation.

(l) Trees removed from the levee and from within ten (10) feet of the levee shall have all roots larger than one- and one-half (1-1/2) inches in diameter removed for a distance of at least three (3) feet from the tree trunk at ground level and the hole filled with impervious soil compacted in four- (4) to six- (6) inch lifts. Compaction within the levee section shall be a relative compaction of not less than ninety percent (90%), per ASTM D1557-91, dated 1991, which is incorporated by reference. Outside of the levee section, the soil shall be compacted to at least the density of adjacent undisturbed material.

NOTE: Authority cited: Section 8571, Water Code. Reference: Sections 8608, 8609 and 8710, Water Code.

HISTORY

1. New section, figure 8.10 and tables 8.2 through 8.5 filed 9-30-96; operative 10-30-96 (Register 96, No. 40).

Oversize Levee Section

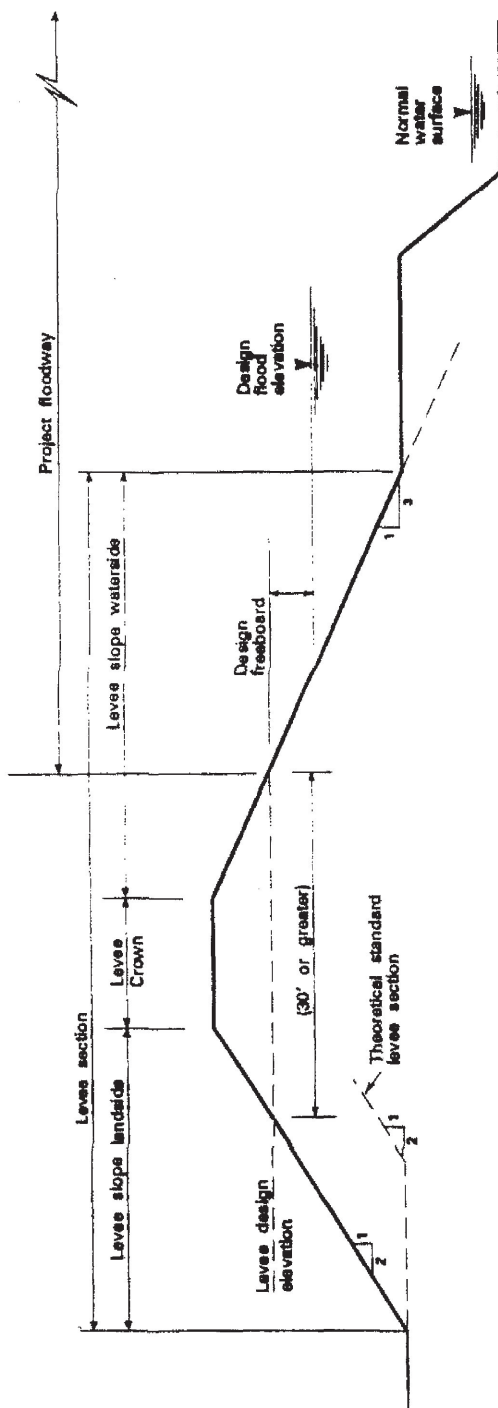


Figure 8.10

Table 8.2
Partial List of Trees *Suitable* for Oversize Levees

Alder, white	<i>Alnus rhombifolia</i>
Box Elder	<i>Acer negundo</i>
California pepper tree (male only)	<i>Schinus molle</i>
Carob tree (male only)	<i>Ceratonia siliqua</i>
China-berry	<i>Melia azedarach</i>
Chinese pistache	<i>Pistacia chinensis</i>
Coast beefwood	<i>Casuarina stricta</i>
Common catalpa	<i>Catalpa bignonioides</i>
Crape myrtle	<i>Lagerstroemia indica</i>
Dogwood, giant	<i>Cornus controversa</i>
Dogwood, Western	<i>Cornus nuttallii</i>
Fremont cottonwood (male only)	<i>Populus fremontii</i>
Goldenrain tree	<i>Koelreuteria paniculata</i>
Hackberry, Chinese	<i>Celtis sinensis</i>
Hackberry, common	<i>Celtis occidentalis</i>
Hackberry, European	<i>Celtis australis</i>
Maidenhair tree (male only)	<i>Ginkgo biloba</i>
Mayten tree	<i>Maytenus boaria</i>
Montezuma cypress	<i>Taxodium mucronatum</i>
Oak	<i>Quercus</i> spp.*
Pagoda tree	<i>Sophora japonica</i>
Redbud, western	<i>Cercis occidentalis</i>
Redbud, eastern	<i>Cercis canadensis</i>
Sawleaf zelkova	<i>Zelkova serrata</i>
Silk tree	<i>Albizia julibrissin</i>
Strawberry tree	<i>Arbutus unedo</i> or <i>Arbutus "marina"</i>
Tallow tree	<i>Sapium sebiferum</i>
Tupelo	<i>Nyssa sylvatica</i>

*spp. = species

Table 8.3
Partial List of Trees *Unsuitable* on Levees

Acacia, Bailey	<i>Acacia baileyana</i>
Acacia, kangaroo thorn	<i>Acacia armata</i>
Almond	<i>Prunus dulcis</i>
Apple, crabapple	<i>Malus</i> spp.*
Apricot	<i>Prunus armeniaca</i>
Ash, Arizona	<i>Fraxinus velutina</i>
Ash, flowering	<i>Fraxinus ornus</i>
Ash, Modesto	<i>Fraxinum velutina "Modesto"</i>
Blue gum	<i>Eucalyptus globulus</i>
Cedar**	<i>Cedrus</i> spp.*
Cherry	<i>Prunus avium</i>
Chinese jujube	<i>Zizyphus jujube</i>
Chinese wingnut	<i>Pterocarya stenoptera</i>
Citrus	<i>Citrus</i> spp.*
Coast redwood	<i>Sequoia sempervirens</i>
Colorado spruce	<i>Picea pungens</i>
Cypress**	<i>Cupressus</i> spp.*
Date palm	<i>Phoenix</i> spp.*
Elm	<i>Ulmus</i> spp.*
Fan palm	<i>Washingtonia</i> spp.*
Fig	<i>Ficus carica</i>
Fir**	<i>Abies</i> spp.*
Giant sequoia	<i>Sequoiadendron giganteum</i>
Grape	<i>Vitis</i> spp.*
Hawthorn	<i>Crataegus</i> spp.*
Incense cedar**	<i>Calocedrus decurrens</i>
Locust	<i>Robinia</i> spp.*
Loquat	<i>Eriobotrya</i> spp.*
Olive	<i>Olea europaea</i>
Osage orange	<i>Maclura pomifera</i>
Peach and nectarine	<i>Prunus perica</i>
Pecan	<i>Carya illinoensis</i>
Persimmon	<i>Diospyros</i> spp.*
Pine**	<i>Pinus</i> spp.*
Plum and prune	<i>Prunus domestica, salicina</i>
Pomegranate	<i>Punica granatum</i>
Quince	<i>Cydonia oblonga</i>
Russian olive	<i>Elaeagnus augustifolia</i>
Salt Cedar	<i>Tamarisk gallica</i>
Tree of heaven	<i>Ailanthus altissima</i>
Walnut	<i>Juglans</i> spp.*

*spp. = species

**Conifers whose normal mature height is 50 feet or less may be considered desirable under maintenance conditions that (1) protect the tree from drought, and (2) will assure proper pruning of the lower branches.

Table 8.4
Partial List of Ground Covers *Suitable* on Levees

Aaron's Beard***	<i>Hypericum calycinum</i>
Alyssum	<i>Alyssum spp.*</i>
Basket-of-gold	<i>Aurinia saxatile</i>
Bermuda Grass	<i>Cynodon dactylon</i> "tifgreen" <i>Cynodon dactylon</i> "coastal" <i>Cynodon dactylon</i> "Tufcote"
Blue-eyed grass	<i>Sisyrinchium bellum</i>
California Poppy	<i>Eschscholzia californica</i>
Cape weed	<i>Arctotheca calendula</i>
Creeping wild rye***	<i>Elymus triticoides</i>
English Ivy, miniature***	<i>Hedera helix, hahni</i>
Garden lippia	<i>Phyla nodiflora</i> <i>Lippia nodiflora</i>
Gazania, trailing***	<i>Gazania spp.*</i>
Green carpet	<i>Herniaria glabra</i>
Lupine, dwarf	<i>Lupinus bicolor</i>
Mexican evening primrose***	<i>Oenothera berlandieri</i>
Palestine orchardgrass	<i>Dactylis glomerata</i> "Palestine"
Salt grass	<i>Distichlis spicata</i>
Spring Cinquefoil	<i>Potentilla tabernaemontanii</i>
Stonecrop	<i>Sedum spp.*</i>
Trailing African daisy	<i>Osteospermum fruticosum</i>
Verbena	<i>Verbena peruviana</i>
Yellow-eyed grass	<i>Sisyrinchium californicum</i>

Table 8.5
Partial List of Ground Covers and Miscellaneous
Species *Unsuitable* on Levees

Bamboo	<i>Bambusa spp.*</i>
Blackberry/Raspberry	<i>Rubus spp.*</i>
Broom	<i>Cytisus spp.*</i>
Cactus	<i>Cactaceae spp.*</i>
Century Plant	<i>Agave americana</i>
False Bamboo, Common Reed	<i>Phragmites communis</i>
Freeway Iceplant	<i>Carpobrotus spp.*</i>
Grape	<i>Vitus spp.*</i>
Honeysuckle	<i>Lonicera spp.*</i>
Horsetail	<i>Equisetum hyemale</i>
Ice Plant, Rosea	<i>Drosanthemum floribundum</i>
Ice Plant, trailing	<i>Lampranthus, spectabilis</i>
Ivy, Algerian	<i>Hedera canariensis</i>
Ivy, Persian	<i>Hedera colchica</i>
Ivy, English except miniature or dwarf varieties	<i>Hedera helix</i>
Pampas grass	<i>Cortaderia selloana</i>
Periwinkle	<i>Vinca spp.*</i>
Perla Grass	<i>Phalaris tuberosa</i> var. <i>hirtiglumis</i>
Rose	<i>Rosa spp.*</i>

*spp. = species

*spp. = species

**These species have specific requirements for being cut back or otherwise maintained on a regular basis depending on the species.