

Resource List

Financial Incentive Programs

Environmental Quality Incentives Program (USDA Natural Resources Conservation Service) This program supports the implementation of conservation plans that include structural, vegetative, and land management practices on eligible land.

<http://www.nrcs.usda.gov/programs/eqip/>

Wildlife Habitat Incentives Program (USDA Natural Resources Conservation Service)

WHIP is a voluntary program for people who want to develop and improve wildlife habitat primarily on private lands. <http://www.nrcs.usda.gov/programs/whip/>

Conservation Reserve Program (USDA Farm Services Agency)

The CRP program provides financial assistance to encourage farmers to convert environmentally sensitive acreage to vegetative cover.

<http://www.nrcs.usda.gov/programs/crp/>

Partners for Fish and Wildlife (US Fish and Wildlife Service)

This program provides financial assistance to private (non-federal) landowners to voluntarily restore wetland or other fish and wildlife habitats on their land. <http://partners.fws.gov/>

Literature

Bring Farm Edges Back to Life! Yolo County Resource Conservation District (530)662-2037 ext. 3; <http://www.yolorcd.org/>

Enhancing Biological Control: Habitat Management to Promote Enemies of Agricultural Pests. Pickett, Charles H. and Robert L. Bugg, eds 1998; UC Press, Berkeley, CA

Farmscaping to Enhance Biological Control. ATTRA (800)346-9140; <http://www.attra.org/>

Sunset Western Garden Book, 2001. Sunset Publishing Corporation, Menlo Park, California.

Information Sources

Local Resource Conservation Districts Look up the resource conservation district for your county at: <http://www.carcd.org/wisp/countyframe.htm>

USDA Natural Resources Conservation Service (NRCS): <http://www.ca.nrcs.usda.gov/>

Community Alliance with Family Farmers (CAFF) (530) 756-8518; <http://www.caff.org/>

For more information in your area, contact:

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Prepared by the Santa Cruz County Resource Conservation District and the Community Alliance with Family Farmers.

Hedgerows: Benefits to Farmers, Benefits to Wildlife



Are you a grower struggling to maintain your field edges? Are you constantly fighting off pesky star thistle, bindweed, mustard and puncture vine? Are you losing ground each winter to erosion, or finding that non-point source pollution is causing a buildup of nutrients in nearby waterways? If so, perhaps the integration of hedgerows into your cropping system can offer relief from some of these ailments.

What is a Hedgerow?
Hedgerows are traditionally defined as linear plantings of vegetation, including trees, shrubs, forbs, and grasses. However, the design of hedgerows is not fixed; they can be planned in many ways in order to satisfy the individual grower's needs.

Benefits and Functions of Hedgerows in the Farmscape



Hedgerows comprised of trees, shrubs, forbs, and grasses grow to form beautiful and functional borders along farm edges.

Hedgerows:

Attract Beneficial Insects. With the right mix of vegetation, hedgerows will bloom year-round and provide a continuous food source of nectar and pollen attractive to beneficial insects.

Stabilize the Soil & Provide Ground Cover. The root systems of hedgerows provide a network sufficient to hold soil in place and greatly reduce the risk of erosion and loss of cropland.

Improve Water Quality. Hedgerows placed along slopes, embankments, berms, ditches, and roads, comprised of intermixed plantings of sod-forming grasses and deep rooted perennials, can act as filter strips to catch sediment and filter surface water before it enters aquatic habitats.

Act as Windbreaks. Hedgerows of taller shrubs and trees will grow to form windbreaks, protecting crops from wind and dust damage.

Suppress Weeds. Established hedgerows can out-compete weeds and over time reduce the weed seed bank, reducing the need and cost to spray or cultivate. The windbreak effect of hedgerows also helps to keep out wind-blown weed seeds.

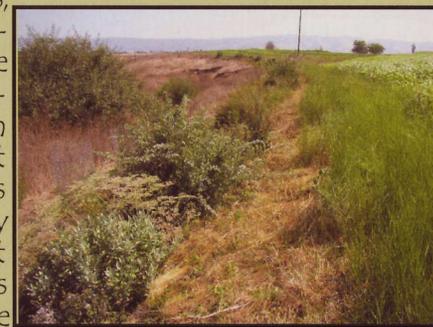
Provide Wildlife Habitat. Hedgerows provide food and shelter for many native animal and insect species, such as birds and important pollinators.

Reduce Pesticide Use. By providing habitat for beneficial insects, hedgerows can reduce the need for costly insecticides. They can also reduce herbicide use by enhancing natural weed suppression.

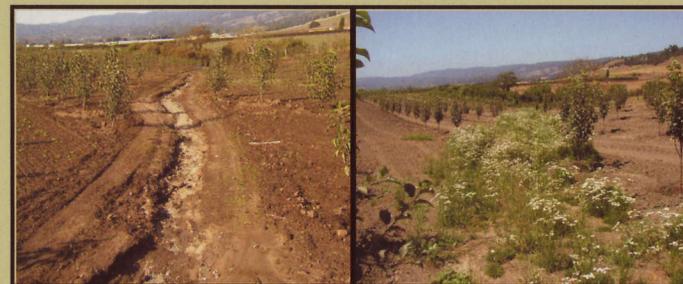
Are Easy to Establish. California native vegetation provides the advantage of relative ease of establishment and drought tolerance once established.

Important Considerations:

In order to ensure the greatest success, hedgerows should be designed "Site-Specific" with the aim to meet the grower's needs and fit the local environment. Hedgerows and farmscaping can buffer fields against pesticide drift, dust and wind. They can incorporate grasses and forbs to help control soil erosion by holding the soil with plant roots. Plant species can be chosen which filter excess nutrients and other pollutants out of the water as it moves over and through the soil to help reduce non-point source water pollution.



A hedgerow with a grass filter strip.



These before and after photos show a waterway with forbs and grasses planted for erosion control.

Establishing the Hedgerow

Test for Drainage: Good drainage is critical. Keep in mind that most California native species are adapted to hot dry summers, and cool wet winters.

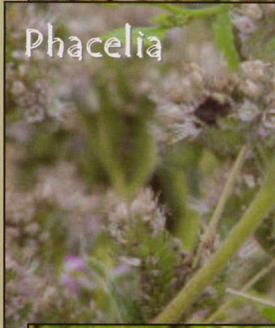
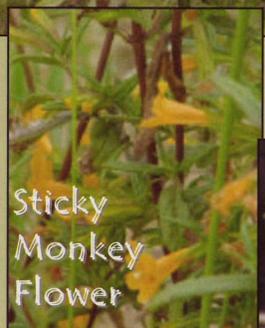
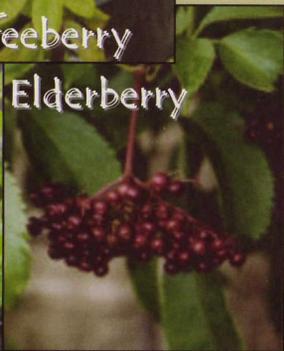
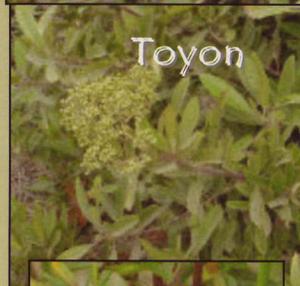
Match Plants to Site: Choose plants that are adapted to the site's hydrology and are likely to share similar light, soil, and water requirements.

Water Wisely: Most natives require watering during the first two or three years to achieve establishment. It is recommended to encourage the deep rooting of natives by watering every two weeks. This will ensure that plants become dependent on subsurface moisture and develop deep roots.

Weed: It is important to weed young hedgerows of pesky plants to avoid competition during establishment.

Prune: Pruning stimulates new vigorous growth and allows hedgerows to grow larger sooner.

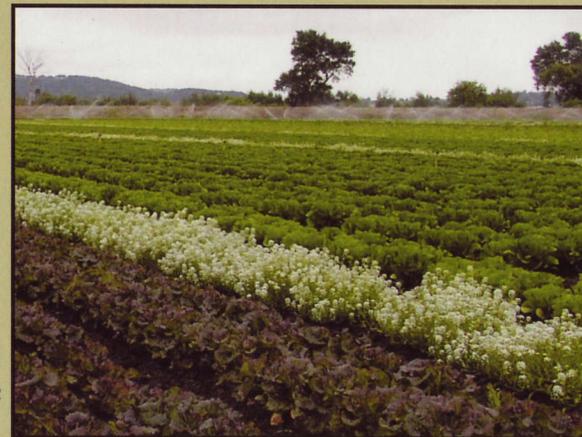
Pictorial Examples of a Few of the Wonderful California Flora



Design Considerations for Hedgerows

Integrating Hedgerows with Your Farm

In-Field Insectary Plantings: Hedgerows can be designed as a system, where in-field plantings of species known to attract beneficial insects, such as sweet alyssum (see inset), can help draw beneficial insects from the hedgerow into the crop area.



Rows of sweet alyssum attract beneficial insects into this lettuce field.

Trap Crops: Trap crops are a form of biological control, using plants which are attractive to pests. Once the pests have moved in, the trap crop can be mowed down, sprayed, or vacuumed in order to terminate the pests. Some examples of trap crops include alfalfa, many clovers, daikon, black-eyed peas, alyssum, legumes, and wildflowers.

Flowering Dates: Planting a mix of species with different flowering periods can help ensure a year-round source of food and habitat for beneficial insects (see chart below for flowering dates of some common hedgerow plants).

Problems & Concerns

Many of the following potential problems can be avoided or managed through careful selection of plants appropriate for your site and crop.

Insects—Select plants that attract the right types of insects, while not encouraging insects that damage your particular crops.

Other Pests—Birds, rodents, and deer may be attracted to the planting. If your crops or vegetation are vulnerable to damage from animals, select plants for your hedgerow that are not food plants for wildlife.

Disease—Some plants may host diseases such as Pierce's Disease, Sudden Oak Death, Eutypa. If your crops are vulnerable to certain diseases, select hedgerow plants which are not hosts for those diseases.

Ecological Issues—California contains a huge array of genetically distinct

