Hedgerows and Other Habitat Plantings: Techniques and Benefits

EcoFarm Conference

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Conservation Practices: Ways Farmers are Using Vegetation

- Hedgerows
- Grassed Waterways
- Filter Strips
- Riparian Plantings
- Windbreaks
- Beetle Banks

Native Plant Hedgerow

Perennial Grasses In Ditch for Erosion and Weed Control

Grass Filter Strip between Field and Hedge

Riparian Planting

Windbreak, using Redwood, Incense Cedar, Pepper Tree, Giant Sequoia, Soapbark Tree, Strawberry Madrone

Beetle Banks- Perennial Bunchgrasses Providing Habitat for Pest Predators

Functions of Conservation Plantings

- Soil erosion control
- Weed control
- Wildlife habitat
- Sequester carbon
- Barriers
- Beneficial insect and pollinator habitat
- Non-point source water pollution reduction
- Air quality and dust control
- Windbreak and climate modification
- Riparian stabilization
- Aesthetic value
- Economic returns
- Increase in local and regional biodiversity

Questions for Planning a Hedgerow

- What is your goal?
- Why do you want this hedgerow?
- What crops are adjacent to the hedgerow?
- What is the description of the site: length, height, width, limitations?
- Other considerations: irrigation; soils; pests; weeds; compost, mulch
- Labor to install and maintain
- Planting date, preceded by site preparation (rip, make berm, install irrigation, acquire materials: plants, compost, mulch, gopher baskets, deer protection)

Steps for Planting

- Set planting date
- Site preparation (clear weeds, rip, make berm, install irrigation, acquire materials: compost, mulch, gopher baskets, deer/rabbit protection)
- Make a plant list – grower input on the list
- Source plants at multiple nurseries-Strategies
- Arrange pick-up/delivery
- Coordinate planting, compost and mulching
- Monitoring and Maintenance schedule-think of it as a crop

Planting on a Berm or High Bed

Drip Irrigation with Emitters or Drip Line, Filter and Solar Timer

COMPARATIVE WATER USAGES

Hedgerow 1000’ – 0.1 ac-ft/yr

Apples	0.5 ac-ft/yr
Strawberries	2.0 ac-ft/yr
Lettuce	2.0 ac-ft/yr

One Household – 0.4 to 0.9 ac-ft/yr

HedgerowsUnlimited.com

Hedgerows and Farmscaping for California Agriculture

A Resource Guide for Farmers

2nd Edition

CAFF | Farmers Guild

Community Alliance with Family Farmers

Calscape.org

Donate | Calscape California Native Plant Society | Your account

Find native plants | Design & inspiration | Find nurseries | Care for your garden | Find landscape professionals | About us

California's native plant destination

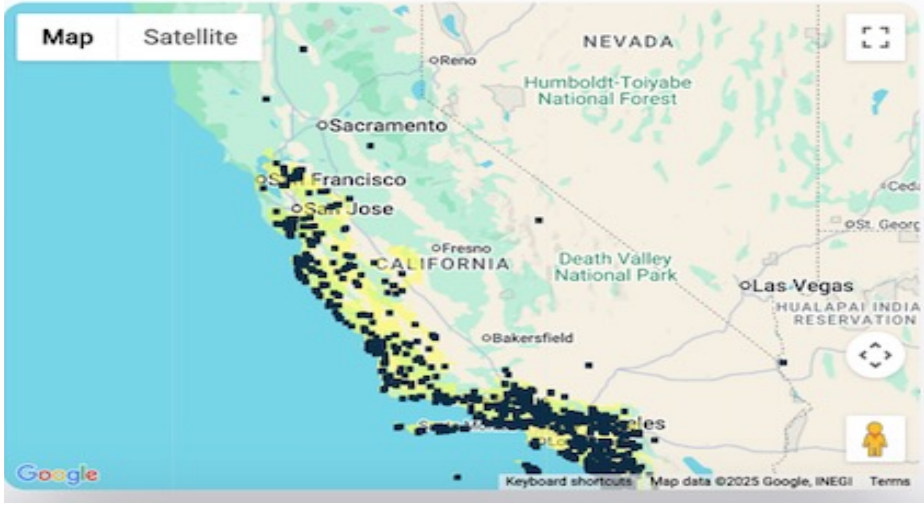
Black Sage

Salvia mellifera

Carried by 75 nurseries

View Availability at Nursery

Estimated plant range

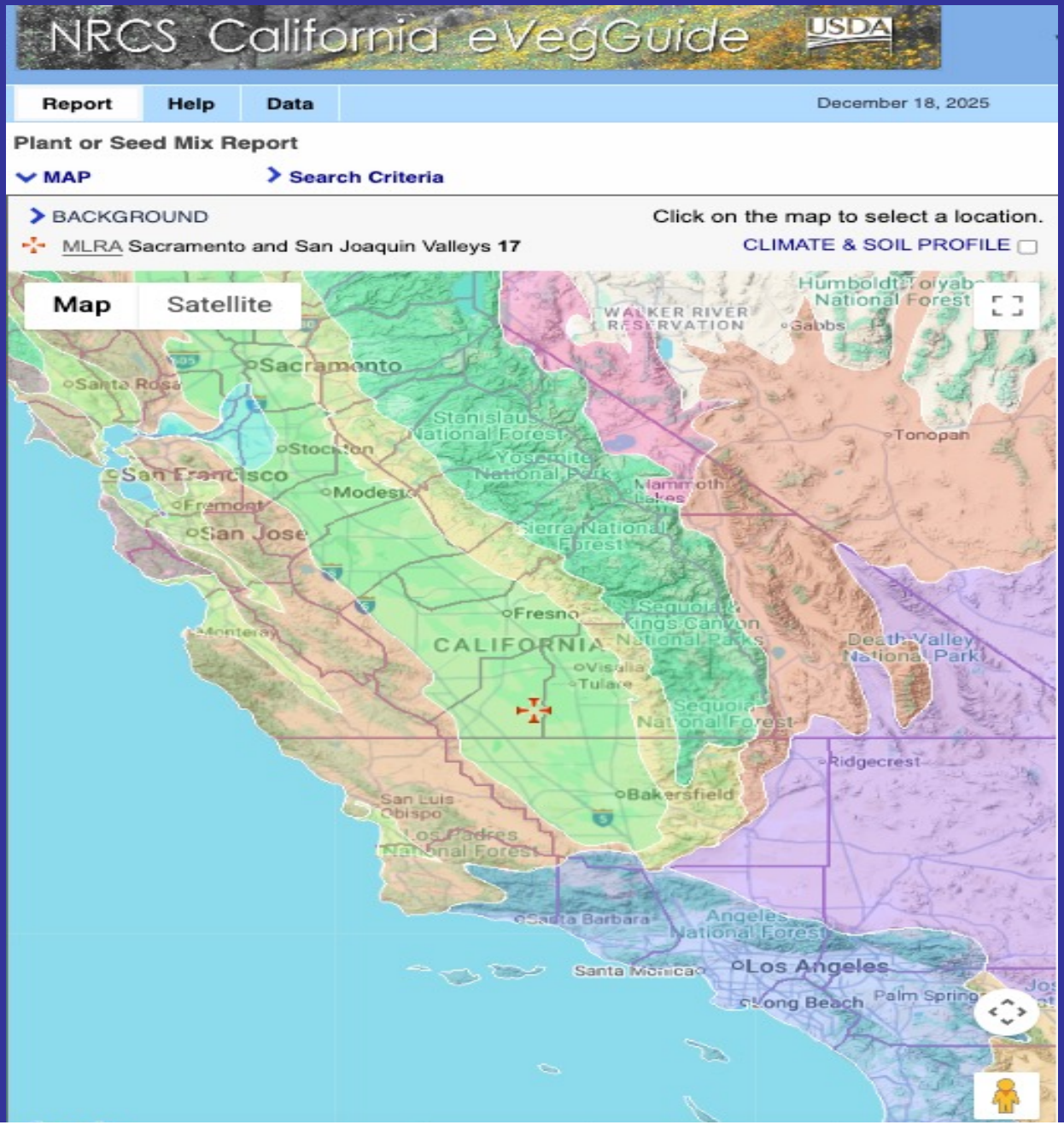


Plant description

Black sage is the most common sage in California. Though less showy than other salvia species and cultivars, it is an important food source for bees, butterflies, and hummingbirds. The flowers are small and pale blue-lavender in color. After blooming, black sage seeds provide food for birds, including quail and towhees.

A black sage shrub can grow up to 6 feet tall and 10 feet wide. In the garden, this aromatic plant prefers full sun and well-draining soil. It is a low-moisture plant, requiring no supplemental water once established. It is usual for the small, dark green leaves to curl during summer drought.

NRCS
http://www.calflora.org/nrcs/index.html



Xerces Society
https://xerces.org

Recommended Plants for Pollinators & Beneficial Insects

California Central Coast Region

Central Coast wildflower pollinator planting blooming in late summer[L]; sweat bee on California poppy[R]. (Photographs by the Xerces Society / Jessa Kay Cruz[L] & Matthew Shepherd[R].)

Plant Selection

The plants on this list are recommended for use in pollinator habitat restoration and enhancement projects in agricultural landscapes. These species have been selected because they are attractive to a diversity of different bee species, and provide pollen and nectar resources throughout the season, provided that a minimum of three different plant species from each blooming period (early, mid, and late season) are selected. A majority of plants recommended are native, drought tolerant, easy to establish, and don't serve as alternate hosts to crop pests or diseases.

Native Species for Pollinators and Beneficial Insects

SCIENTIFIC NAME	COMMON NAME	BLOOM	LIFE	FORM	SUN	WATER	SOIL TEXTURE	ADDITIONAL DETAILS
Achillea millefolium	Common yarrow	Mid	P	F		L	Any	
Agastache urticifolia	Nettleleaf giant hyssop	Mid	P	F		M	Medium–Coarse	
Arctostaphylos densiflora 'McMinn'	McMinn manzanita	Early	P	W		L	Medium	
Arctostaphylos glauca	Bigberry manzanita	Early	P	W		L	Any	
Asclepias fascicularis	Narrowleaf milkweed	Mid	P	F		M	Any	
Baccharis pilularis	Coyotebrush	Late	P	W		L	Any	
Baccharis pilularis 'Pigeon Point'	Dwarf coyotebrush	Late	P	W		L	Any	
Berberis aquifolium	Oregon grape	Early	P	W		L	Any	
Ceanothus 'Julia Phelps'	California lilac 'Julia Phelps'	Early	P	W		L	Medium-Coarse	
Clarkia amoena	Farewell-to-spring	Early–Mid	A	F		M	Fine–Medium	
Collinsia heterophylla	Chinese houses	Early	A	F		M	Any	

Flowering Chart over One Year
Sample Plant List

Known Pollen and Nectar Sources for Beneficial Insects

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Willow spp.	■	■	■	■	■							
Ceanothus spp.		■	■	■	■	■	■	■				
Yarrow			■	■	■	■	■					
Elderberry			■	■	■	■	■	■	■			
Coffeeberry				■	■	■	■					
Hollyleaf Cherry				■	■							
Toyon					■	■	■					
Buckwheat spp.					■	■	■	■	■	■	■	■
Deergrass					■	■	■	■	■			
Saltbush, Fourwing					■	■	■	■				
Milkweed					■	■	■	■	■	■		
Goldenrod							■	■	■	■	■	
Coyote Brush	■							■	■	■	■	■

Chart Showing Beneficial Characteristics of Native Plant Species

Percentage of Native Hedgerow Plants Supporting Beneficial Insects, Birds and Pollinators,* and Their Flowering Periods at Rancho Corralitos Farm

Number of Species	Number of Plants	Common Name	Species	Growth Habit	Beneficial Insect Food & Shelter Support	Bird Insect Food (Butterflies and Moths)	Bird General Habitat	Bird Plant Food Support	Bird Nesting Support	Pollinator Nesting and Overwinter Plants Only*	Spring Flowering Period	Summer Flowering Period	Fall Flowering Period	Winter Flowering Period
1	10	Deergrass	Muhlenbergia rigens	Medium Grass	1	0	0	0	0	1	1	0	0	0
1	7	Howard McMinn Manzanita	Arctostaphylos 'Howard McMinn'	Medium Shrub	0	1	1	1	1	0	1	0	0	1
1	14	Sagebrush, California	Artemisia californica	Medium Shrub	0	0	1	0	1	1	1	1	1	0
1	20	Coyote Brush	Baccharis pilularis ssp. consanguinea	Medium Shrub	1	0	1	0	0	0	0	0	1	1
1	12	Ceanothus, 'Concha'	Ceanothus 'Concha'	Medium Shrub	1	1	1	0	1	0	1	0	0	1
1	18	Ceanothus, Yankee Point	Ceanothus griseus horizontalis	Short Shrub	1	1	1	0	1	0	1	0	0	0
1	12	Buckwheat, California	Eriogonum fasciculatum	Medium Shrub	1	1	0	0	0	0	1	1	1	0
1	12	Sunflower, Wooly	Eriophyllum staechadifolium	Medium Shrub	0	0	0	0	0	0	1	1	0	0
1	18	Coffeeberry, Eve Case	Frangula californica	Medium Shrub	1	0	0	1	1	0	1	1	0	0
1	12	Coastal Bush Lupine	Lupinus arboreus	Medium Shrub	0	1	0	0	0	0	1	0	0	0
1	10	Sage, White	Salvia apiana	Medium Shrub	1	0	1	1	0	0	1	1	0	1
1	11	Sage, Cleveland	Salvia clevelandii	Medium Shrub	1	0	1	1	0	0	1	1	0	0
1	6	Sage, Black	Salvia mellifera	Short Shrub	1	0	1	1	0	0	1	1	0	1
1	6	Sage, Purple	Salvia leucophylla	Short Shrub	1	0	1	1	0	0	1	1	0	1
1	6	Yarrow, Common	Achillea millefolium	Forb	1	0	0	0	0	1	1	1	0	0
1	4	Milkweed, Showy	Asclepias speciosa	Forb	0	0	0	0	0	0	0	1	0	0
1	4	Monkeyflower, Sticky	Diplacus aurantiacus	Short Shrub	0	0	0	0	0	0	1	1	0	1
1	20	Fuschia, California	Epilobium canum	Forb	0	0	0	0	0	0	0	1	1	0
1	10	Gumplant, Great Valley	Grindelia camporum	Forb	0	0	0	0	0	0	1	1	1	0
19	212			Actual # of Plants	123	61	98	52	69	30	162	127	76	59
				Actual: % of Plants	58%	29%	46%	25%	33%	14%	76%	60%	36%	28%
					Beneficial Insect Food & Shelter Support	Bird Insect Food (Butterflies and Moths)	Bird General Habitat	Bird Plant Food Support	Bird Nesting Support	Pollinator Nesting and Overwinter Plants	Spring Flowering Period	Summer Flowering Period	Fall Flowering Period	Winter Flowering Period

Form for Nursery Inquiry/Order

INQUIRY								
PLANT NAME	COMMON NAME	# of plants	#	Unit	Price	#	Unit	Price

Compost:

Approx. ONE Shovelful per hole
1 cubic yard = 270 shovel-fulls (i.e. 270 plants)

Watering in every hole

Plants in the Ground

Mulch:

For 100 feet (3 feet wide by 6 inches deep),
use 6 cubic yards.

A tree-trimmers dump truck holds 20 to 23 cubic yards of mulch. So, one load would cover about 300 feet of hedgerow.

Using Mulch to Control Weeds And Regulate Moisture

Cardboard and Mulch

Deer, Rabbit Protection; Gopher Cages

Estimated Costs

Activity

Farmer meetings and planning
Planning with foreman
Tractor work-labor
Other site preparation-labor
Picking up materials
Irrigation system installation-labor
Pre-irrigation-labor
Planting-labor
Spreading mulch, compost
Post-planting monitoring and maintenance
Irrigation-labor

Estimated Costs

Materials $2-$4+/ft

Tractor work-fuel
Irrigation system-parts
Plant materials
Other site preparation-materials (compost, etc.)
Pre-irrigation-water
Irrigation-water cost, PGE, fuel
Compost, Mulch, cardboard, weedcloth
Other (fencing, gopher cages, vehicle use, etc.)

Other

Mileage to pick up compost, irrigation supplies, mulch
Annual Costs
Estimated yearly water cost
Estimated yearly maintenance*
Land Rent
*Monitoring, weeding/mowing, fixing irrigation leaks, replanting

Cost Share and Financial Support

- NRCS – EQIP
- RCD'S
- CDFA-Healthy Soils Program
- Pollinator Partnership Program
- Community Alliance with Family Farmers
- Xerces Society
- Wild Farm Alliance

Selected Hedgerow References

Pest Control and Pollination Cost–Benefit Analysis of Hedgerow Restoration in a Simplified Agricultural Landscape
Morandin et al. 2015

Hedgerow Benefits Align with Food Production and Sustainability Goals
Long et al. 2017

Beneficial Insects Move from Flowering Plants to Nearby Crops
Long et al. 1998

Food Safety

FSMA does not require the removal of habitat or fencing out of wildlife and says conservation supports food safety.

Monitor the crop, not the habitat

Take action if crop damage or animal feces are seen.

Factors to be considered before deciding on whether animals are a food safety concern:

- number of animals
- type of animals
- type of crop
- harvest procedure
- neighboring influences
- pathogen of concern

Source: Wild Farm Alliance - www.wildfarmalliance.org
CAFF Food Safety Contact – https://caff.org/food-safety-services/

https://www.wildfarmalliance.org/tags/food_safety

A FARMER'S GUIDE TO FOOD SAFETY AND CONSERVATION:

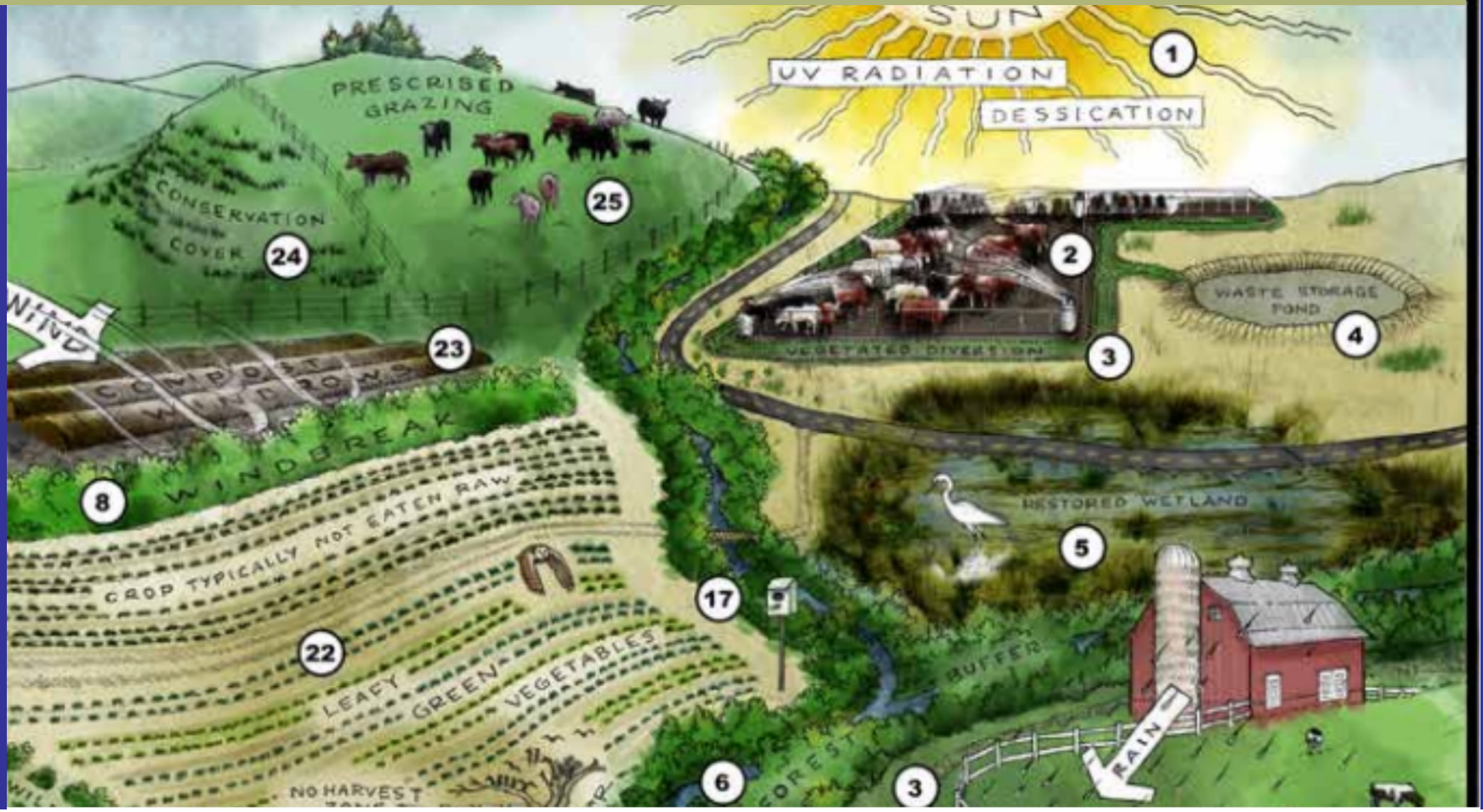
FACTS, TIPS & FREQUENTLY ASKED QUESTIONS

WILD FARM ALLIANCE

CAFF | FARMERS GUILD

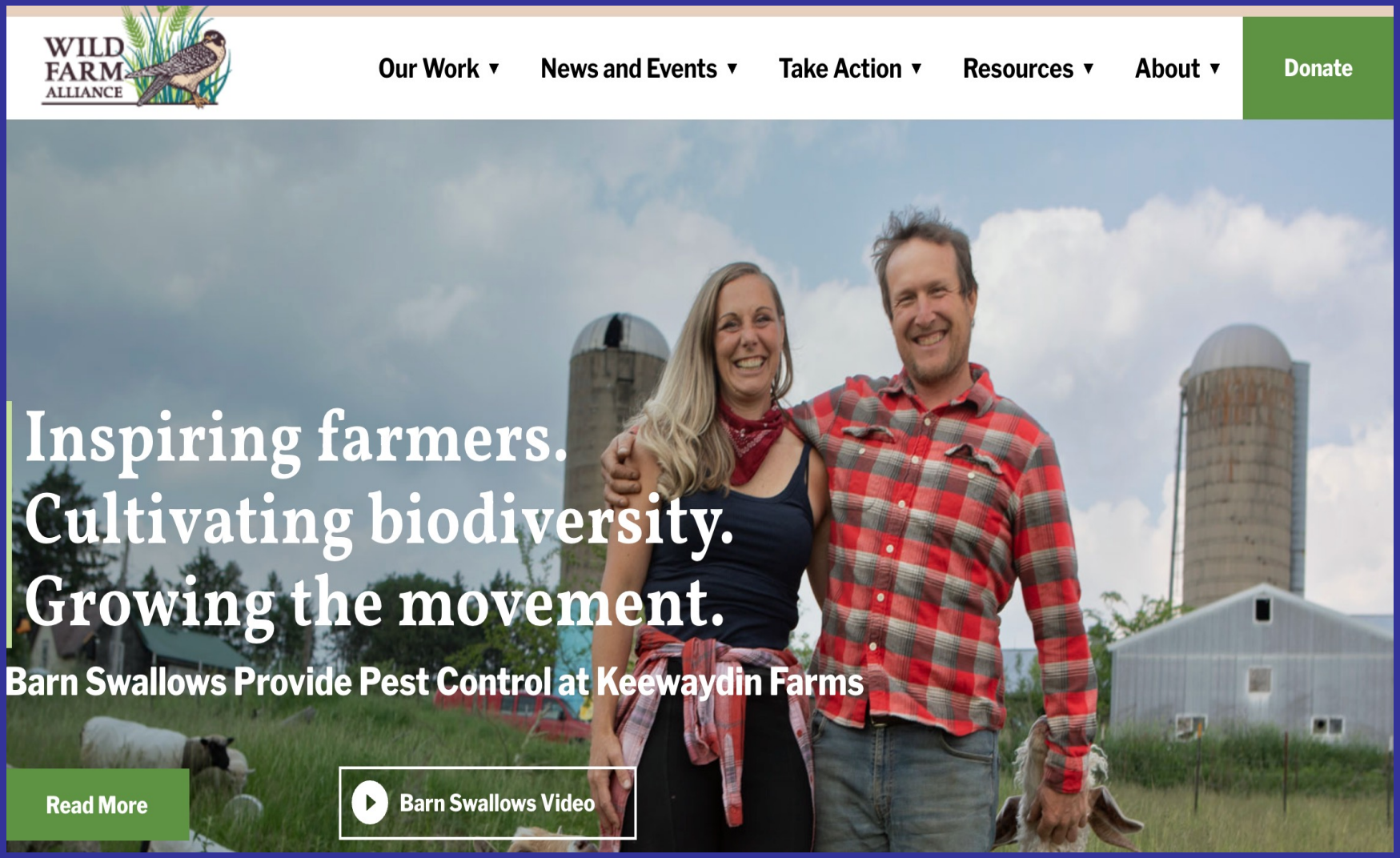
COMMUNITY ALLIANCE WITH FAMILY FARMERS

Second Edition - October 2017



RESOURCES

Wild Farm Alliance
https://www.wildfarmalliance.org/



WILD FARM ALLIANCE

INSTALLING HABITAT TO INCREASE FARM DIVERSITY

Timeline & Steps for Hedgerows, Windbreaks and Riparian Areas

Farmscaping is not just about planting the habitat—the more upfront planning and afterward maintenance and

Introduction

Planning and installing a new native plant conservation area on the farm is a major management decision that, from start to finish, can be pleasurable and exciting. Besides adding biodiversity and beauty to the farm, climate benefits accrue—shrubs and trees can store significant amounts of carbon in their tissues and the soil.

Growers often plant hedgerows for their support of pollinators and natural enemy insects. These plantings also support beneficial birds and other wildlife, and can function as a living fence. With tall trees, windbreaks protect crops, livestock, and soil from wind ten times the height of the planting. Riparian vegetation strengthens areas under the influence of water; it can protect water quality, diminish water temperature, and reduce stream bank erosion. These linear plantings also serve as wildlife corridors, fostering wildlife movement best when they are connected to other habitat on and off the farm.

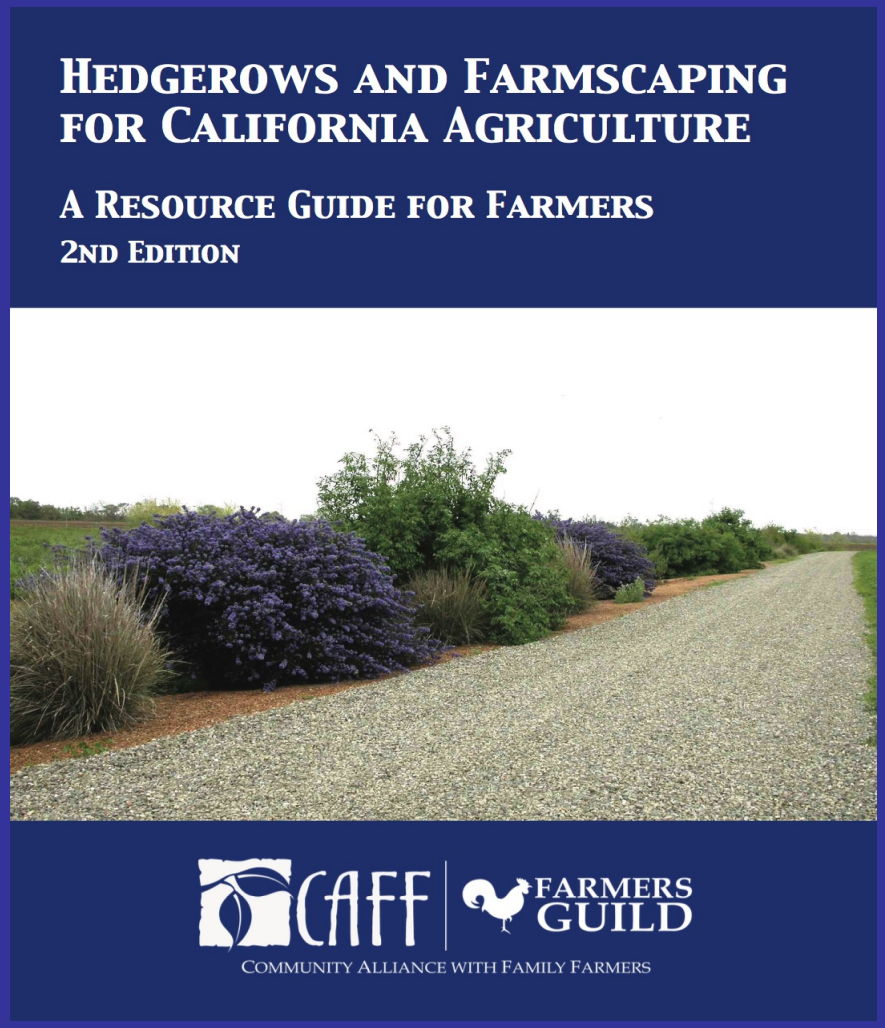
It is estimated that it would take 16 years of pesticide cost savings to recoup a $4,000 investment of installing 1,000' hedgerow, based on pest control benefits, and only 7 years when pollination benefits are included (Morandin et al. 2016). This means a grower is banking $571/year ($4,000/7years) for both benefits. If growers obtain financial support (see resources), payback is even sooner.

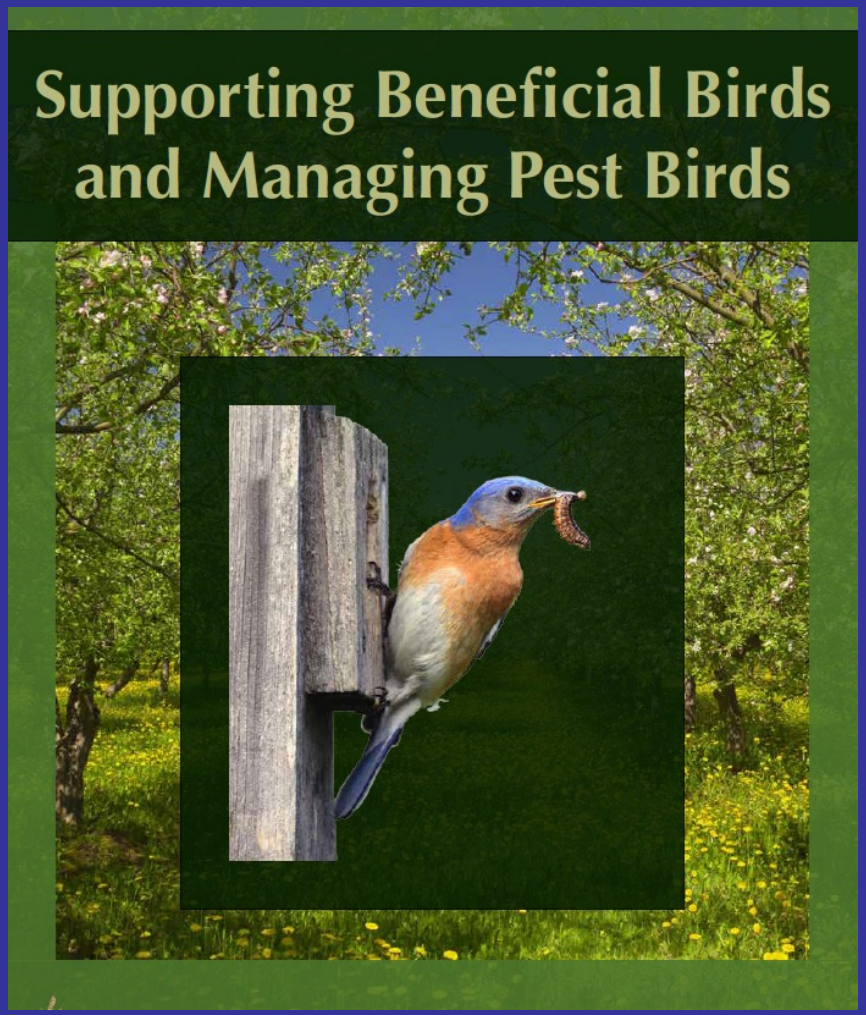
https://www.wildfarmalliance.org/installing_habitat

https://www.wildfarmalliance.org/instalacion_de_habitat

https://www.wildfarmalliance.org/video_library

Hedgerows and Farmscaping Resource Guides





Download at: www.HedgerowsUnlimited.com/resources
and *www.wildfarmalliance.org/bird_resource*

https://www.nrcs.usda.gov/

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

HEDGEROW PLANTING

(Ft.)

CODE 422

DEFINITION

Establishment of dense vegetation in a linear design to achieve a natural resource conservation purpose.

PURPOSE

Providing at least one of the following conservation functions:

- Habitat, including food, cover, and corridors for terrestrial wildlife.
- To enhance pollen, nectar, and nesting habitat for pollinators.
- Food, cover, and shade for aquatic organisms that live in adjacent streams or watercourses.
- To provide substrate for predaceous and beneficial invertebrates as a component of integrated pest management.
- To intercept airborne particulate matter.
- To reduce chemical drift and odor movement.
- Screens and barriers to noise and dust
- To increase carbon storage in biomass and soils.
- Living fences
- Boundary delineation and contour guidelines

CONDITIONS WHERE PRACTICE APPLIES:

This practice applies wherever it will accomplish at least one of the purposes stated above.

CRITERIA

General Criteria Applicable to All Purposes

Hedgerows shall be established using woody plants or perennial bunch grasses producing erect stems attaining average heights of at least 3 feet persisting over winter.

Plants selected must be suited and adapted to soil and site conditions, climate, and conservation purpose.

No plant listed by the state as a noxious weed shall be established in a hedgerow.

Species shall be selected that do not host pests or diseases that could pose a risk to nearby crops.

The practice shall be protected from livestock grazing and trampling to the extent necessary to ensure that it will perform the intended purpose(s).

Competing vegetation shall be controlled until the hedgerow becomes established. Control shall continue beyond the establishment period, if necessary.

All planned work shall comply with federal, state and local laws and regulations.

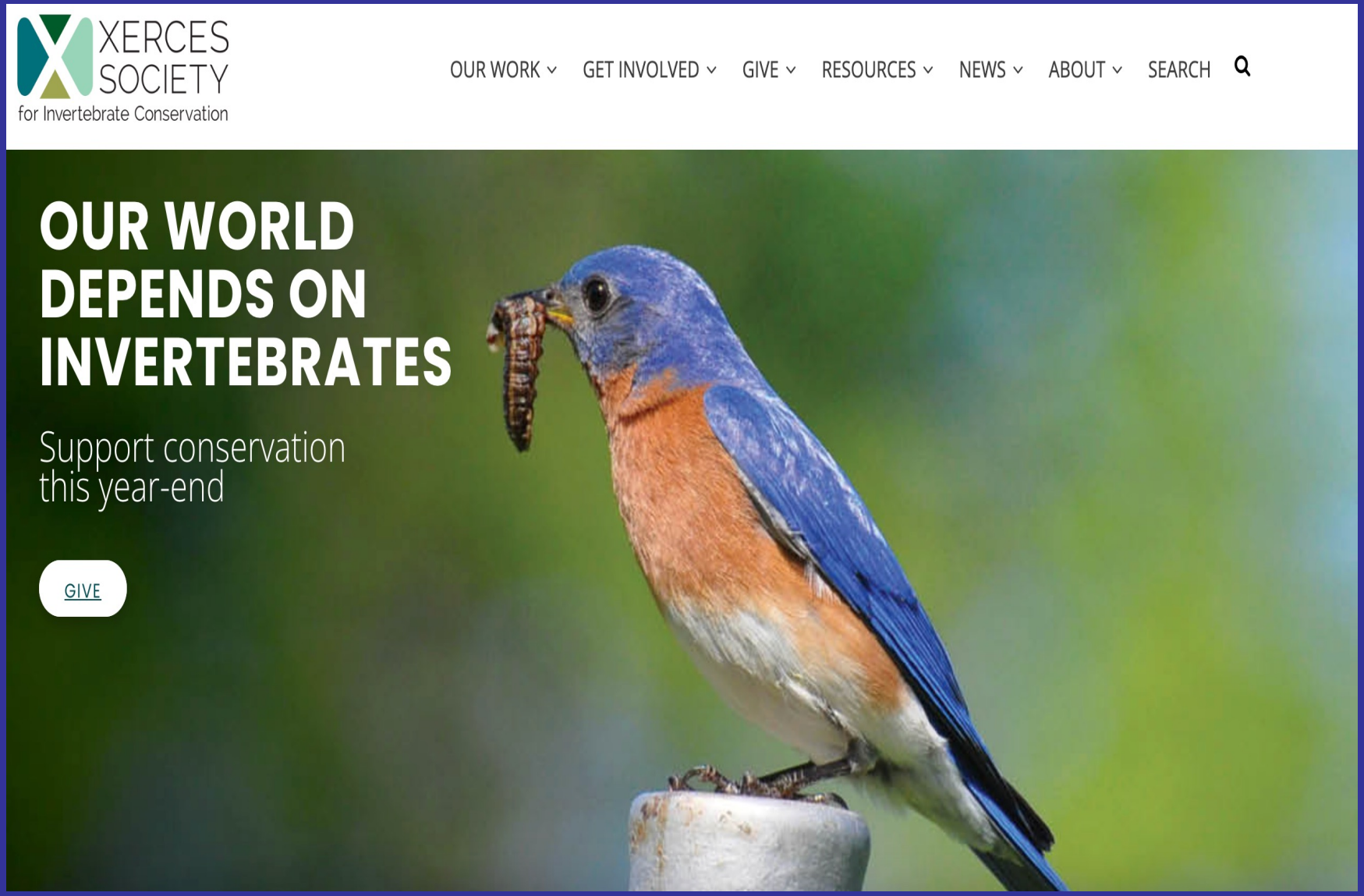
No minimum width beyond a single row is required except where wildlife food and cover is an objective.

Additional Criteria for Wildlife Food, Cover and Corridors

Establish at least two compatible species of native vegetation. Multiple species increase food and habitat diversity while reducing pest and disease risk.

Selected plants shall provide cover and/or food to support the landowner's wildlife objectives.

Xerces Society
https://xerces.org/



Hedgerows Unlimited

Resources

Powerpoint Presentations

- ***EcoFarm Presentation 2026***
  - ***EcoFarm 2026 Hedgerow Handouts-Black & White***
  - ***Estimated Farmer Costs Worksheet***

Search

Recent Posts

Snake eating squirrel

Elderberry

Flannelbush in flower

Handouts from Hedgerow Workshop
EcoFarm 2026

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1

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2

Questions?

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