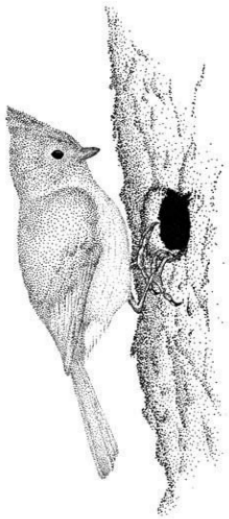
Bringing the Birds Back:

A Guide to Habitat Enhancement in Riparian and Oak Woodlands for the North Bay Region

Kim Kreitinger and Tom Gardali

California Partners in Flight

PRBO Conservation Science



Recommended Citation:

Kreitinger, K. and T. Gardali. 2006. Bringing the Birds Back: A Guide to Habitat Enhancement in Riparian and Oak Woodlands for the North Bay Region. California Partners in Flight Regional Bird Conservation Plan No. 1, http://www.prbo.org/calpif.

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Lark Sparrow (*Chondestes grammacus*)

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Introduction

This easy-to-use guide to habitat restoration and enhancement identifies practical steps that landowners and land managers can take to improve bird habitat on their land – and thereby overall ecosystem health.

The guide begins with some basic information about riparian (streamside) and oak woodlands and about songbird conservation. It goes on to provide specific recommendations to benefit birds in these habitats. The usefulness of these recommendations is verified through success stories told by landowners who have used these recommendations. Finally, the guide includes information about agencies and organizations that can help with technical and financial assistance in habitat enhancement.

Geographic Focus

This guide is focused on the North Bay Region of the San Francisco Bay Area (Figure 1), including the counties of Lake, Marin, Mendocino, Napa, and Sonoma.

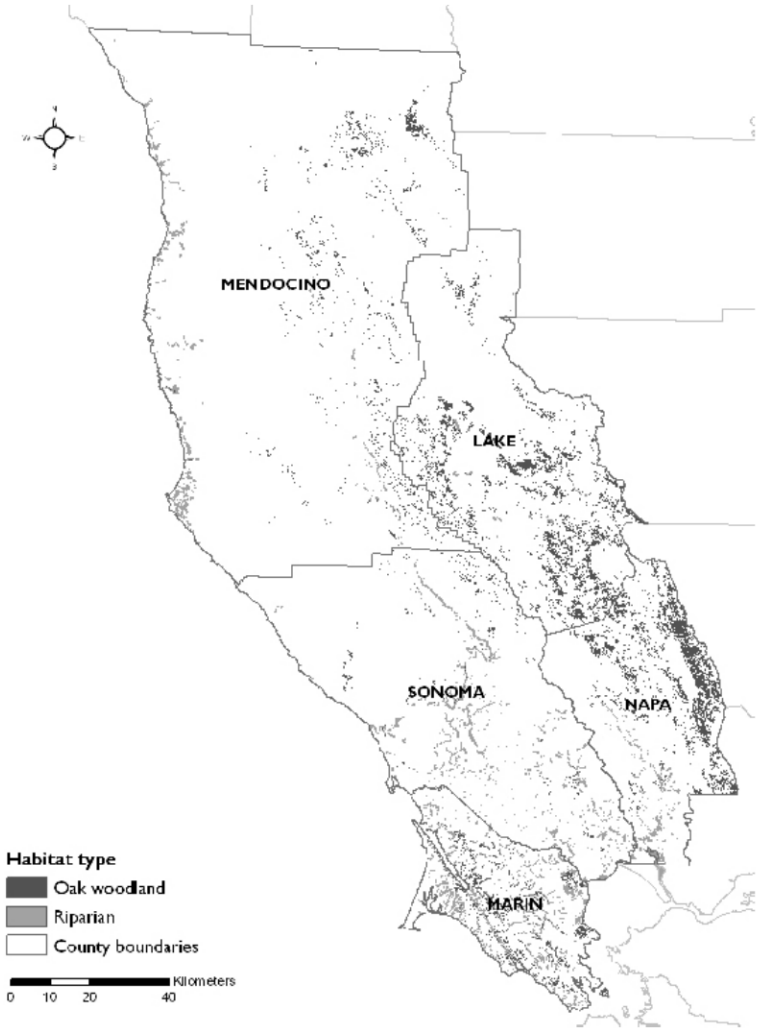


Figure 1. Riparian and oak woodland coverage in the North Bay region.

Habitat Focus

This guide is focused on two general habitat types within the North Bay Region: riparian and oak woodlands (Figure 1). These two woodland habitats were chosen because of their importance to wildlife, their need for preservation, and their high rate of occurrence on private lands in the North Bay Region.

What are Riparian Habitats?

Riparian habitats are vegetated areas that border the banks of rivers, streams, lakes, or other bodies of water. Riparian areas are transitional between upland and aquatic habitats and can support plants and animals from both. The presence of water promotes a diversity of native trees, shrubs, and grasses.

Healthy riparian habitats contain a mixture of plant species, sizes, shapes, and ages, which is maintained by periodic disturbance (Figure 2). A mature riparian forest has a low layer of groundcover (understory), an intermediate layer of shrubs and small trees (midstory), and a high canopy of trees and vines. This "layering effect" provides an assortment of feeding and nesting locations for a variety of birds and other wildlife. Thus, a healthy riparian habitat should have high wildlife diversity and abundance. [1,2]

What are Oak Woodland Habitats?

Oak woodlands are those forests or woodlands where oaks are common or predominate. Acorns are the primary reason oak woodlands support many wildlife species.[3] Acorns are perhaps the most important food for wildlife produced in California's many diverse habitats.

Healthy oak woodlands have a range of tree ages. Large, old oak trees provide decaying limbs necessary for cavity-nesting birds and are excellent producers of acorns. Seedlings and saplings are vital for replacing older trees as they die. Birds and other wildlife often aid in oak regeneration by storing acorns that later germinate into oak seedlings. An understory of native shrubs and native perennial grasses is also important to the health of oak woodlands and the wildlife that depends on them.

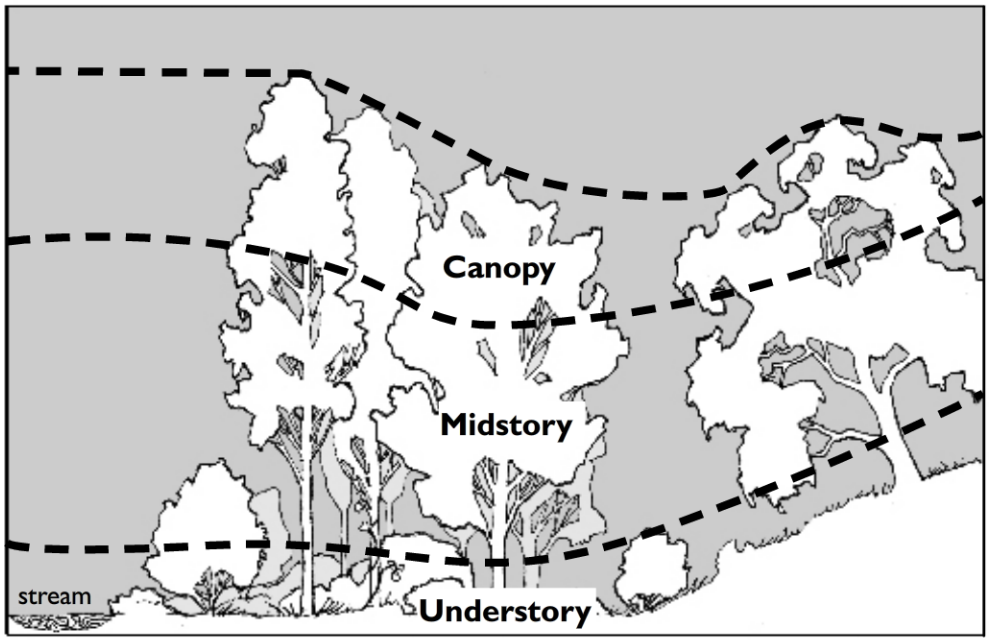


Figure 2. Healthy woodlands contain a mixture of layers with different plant species, sizes, shapes, and ages as well as an unbroken transition to upland habitat.
Understory = the underlying layer of vegetation
Midstory = the intermediate layer of shrubs and small trees
Canopy = the uppermost layer in a woodland, formed by the crowns of trees

Why Enhance Riparian and Oak Woodland Habitats?

California's landscape is characterized by a diversity of land uses and habitats. In the North Bay Region of the San Francisco Bay Area, oak and riparian woodlands converge with vineyards, range lands, family farms, and urban areas. This convergence presents the challenge of how to maintain healthy habitats while at the same time providing people with food, jobs, and homes.

Why should landowners care about the preservation of oak and riparian woodlands? Healthy oak and riparian woodlands are important for wildlife and people and together contribute to the quality of life for all.

Wildlife Habitat

Riparian and oak woodlands are important habitats for birds and other wildlife. Oak woodlands contain the most wildlife species of any habitat in California, with more than 330 species of birds, mammals, reptiles, and amphibians depending on them at some stage of their life.[3] Riparian habitat is equally important for providing water, food, nesting sites, stopover sites during migration, and places to live during the winter for numerous bird species. Riparian habitat that supports healthy bird populations will also support other wildlife, including fish. Riparian vegetation shades streams and maintains cooler water temperatures necessary for fish and other aquatic life.

Economic Values

Increase Property Values

Riparian and oak woodland habitats are aesthetically pleasing landscapes that increase the value of a property.

Improve Water and Air Quality

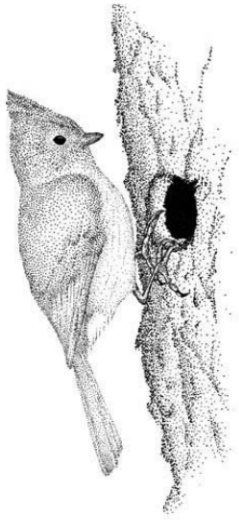
Riparian and oak woodlands stabilize the soil, which improves water quality by preventing sediments from entering waterways. They improve water quality by filtering pollutants from rain water runoff, which reduces costs associated with water quality and fisheries protection.[1] Trees also absorb toxins in the air.

Reduce Pests

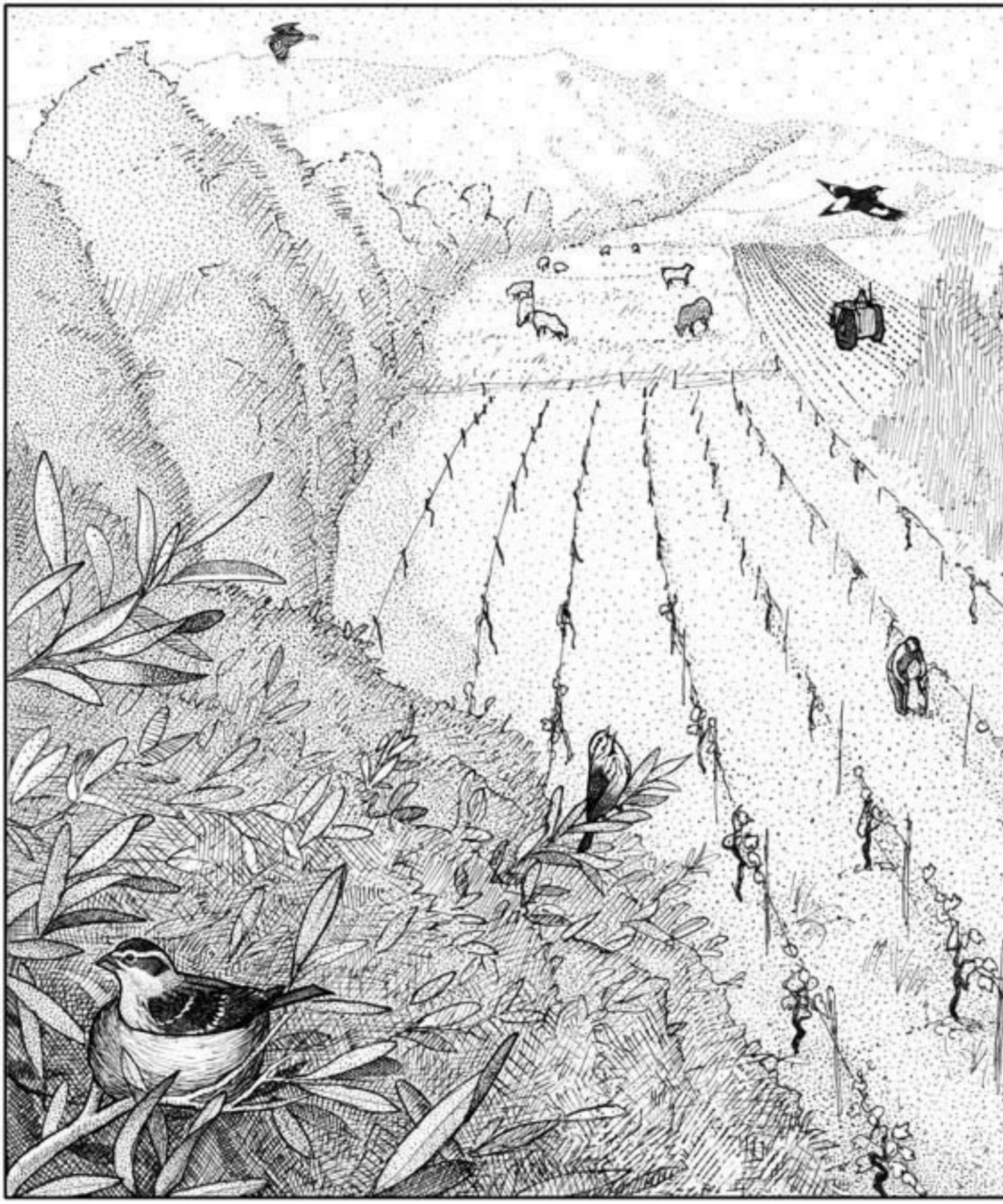
Many species of plants and animals found in these habitats help reduce pests.[4] Birds in particular play an important role in control of forest and agricultural pests. American Kestrels, owls, and other raptors eat rodents. For instance: a large hawk or owl can eat over a thousand mice and voles per year![5] Other birds such as Oak Titmice, Western Bluebirds, wrens, and swallows reduce populations of pest insects, thus reducing the need for costly chemical sprays.

Bank Stabliization

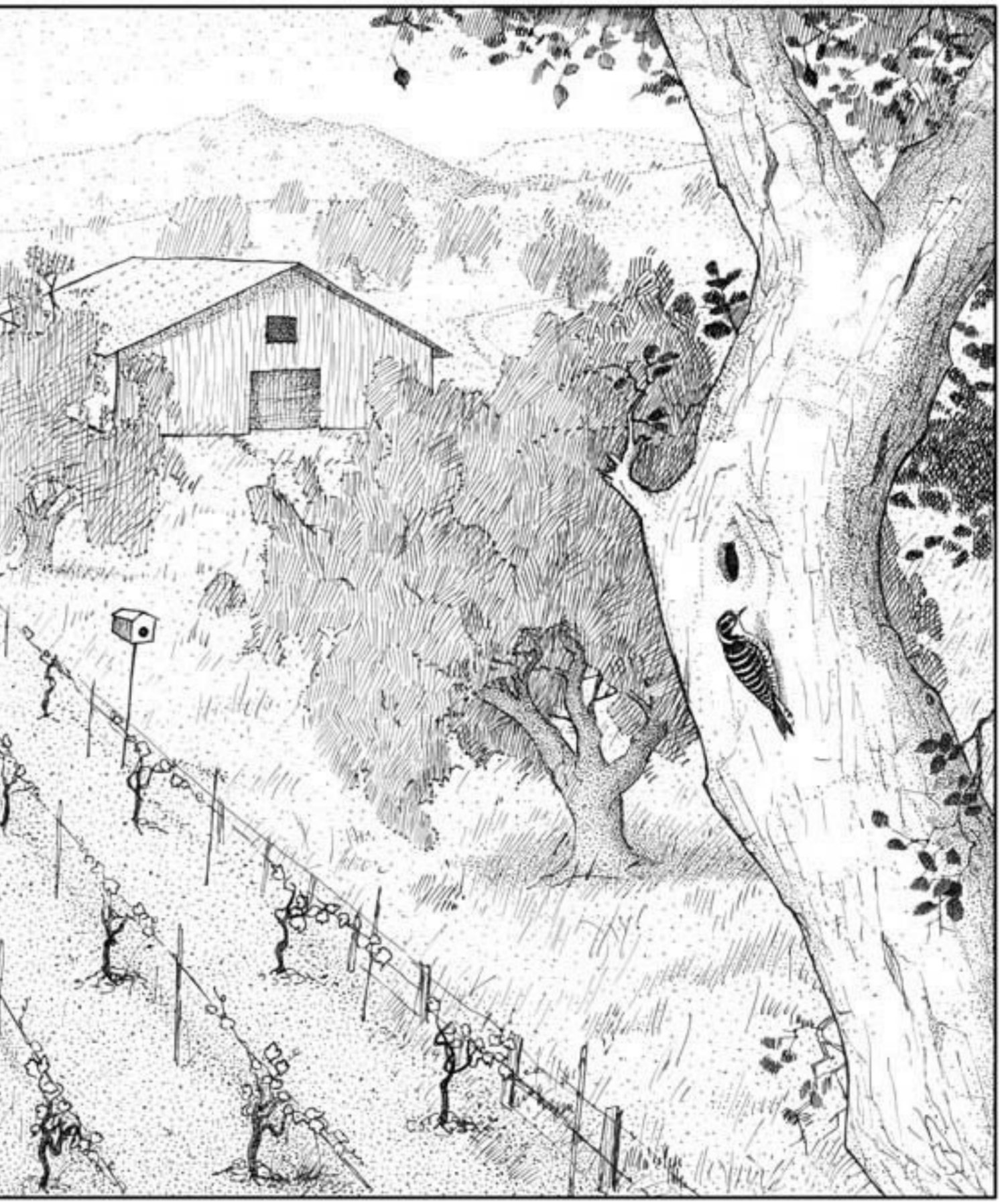
Healthy woodland habitats help to absorb water runoff and slow water velocity. Roots hold bank soil together, thereby stablizing streambanks and reducing erosion.[1]



Oak Titmouse (*Baeolophus inornatus*)



Healthy oak and riparian woodlands are important for wildlife and people and together contribute to the quality of
cattle ranching. Oak woodlands provide cavities for Nuttall's and Acorn Woodpeckers, riparian woodlands provide s



f life for all. Here is a healthy working landscape with riparian and oak woodlands maintained alongside vineyards and secure nest sites for Song Sparrows and Black-headed Grosbeaks, and Red-shouldered Hawks patrol the edges.

Using Birds to Guide your Habitat Enhancement Project

Birds are the most familiar and widely enjoyed wildlife in North America. From predators to prey, and from pollinators to dispersers of seeds, the important functions of birds in our environment cannot be overstated.[6] Despite their importance, some bird populations have shown drastic declines. There are many causes for these declines, but loss of appropriate habitat is often the primary reason. How do you know if you are creating appropriate habitat conditions with your enhancement projects?

Habitats that contain a variety of plant species, sizes, shapes and ages will be attractive to more bird species. For instance, species such as the Acorn Woodpecker require large oak trees with both live and dead branches for nesting cavities. Bird species such as the Song Sparrow and the California Quail require understory vegetation (Figure 2). A healthy and diverse understory with lots of groundcover offers well-concealed nest and feeding sites.

Birds as Indicators

Birds are generally active during the day, visually conspicuous, and highly vocal. These characteristics mean that birds are more easily observed than other types of wildlife. Birds have highly diversified foraging and nesting habits; different species of birds use different habitat features within oak and riparian woodlands – some nest on the ground, others at the tops of trees. Additionally, birds respond quickly to changes in their environment, which includes enhancement projects like habitat restoration (Figure 3).

Chileno Valley landowner Sally Gale describes the birds' response to a restoration project on her property: "I keep seeing new birds. Now we have a Wood Duck in the creek and Hooded Mergansers. It is so neat!"

Figure 3. The number of birds increases as the age of restoration projects increases. Data taken from Marin and Sonoma counties.

Song Sparrow (*Melospiza melodia*)

How to Provide Quality Bird Habitat

Habitat enhancement and bird-friendly land management can stop population declines and contribute to the recovery of bird populations. Because birds use a variety of habitat features, there are many ways landowners can enhance bird habitat on their properties. Generally, the more habitat features your property has, the better it will be for birds.[7]

Here are suggestions to maintain and improve these important habitats on your property and create new habitat to support diverse bird communities. These recommendations are supported by the most recent scientific information available on birds' needs.

Recommendations

Minimize pesticide use. Landowners can help bird populations by avoiding landscaping methods that require the use of pesticides. Allow insect-eating birds to consume insect pests or use other alternatives to pesticides on working farms and ranches adjacent to oak and riparian woodlands. This prevents damage to nesting birds and increases available feeding sites. See the Resources page for ideas on pesticide alternatives.

Mow early and often. Many songbirds nest very close to the ground in grasses and 'weedy' areas. If you have to mow, mow early (beginning in February) and often, as this will prevent birds from nesting where you wish to mow. Do not mow native tree saplings and shrubs. Even poison oak, a native shrub, has high value for birds and other wildlife.

Connect habitat patches with corridors. A corridor is a continuous area of similar vegetation, usually defined by the dominant vegetation. Design corridors to connect habitat patches on your property or adjacent neighbors' properties. Even narrow strips can be used as travel corridors by bird species such as Spotted Towhee, Song Sparrow, and others.

Consider the timing of your activities. Bird species in the North Bay Region typically nest mid-March through late-July (Figure 4). The nesting season is a critical period in birds' lives. It is important to limit habitat enhancement and management activities such as grazing, disking, herbicide application, and mowing to the nonbreeding season. Disturbances during the breeding season may result in nest abandonment, the elimination of nest sites, destroying nests, exposing nests to predators, and decreasing food sources such as insects.

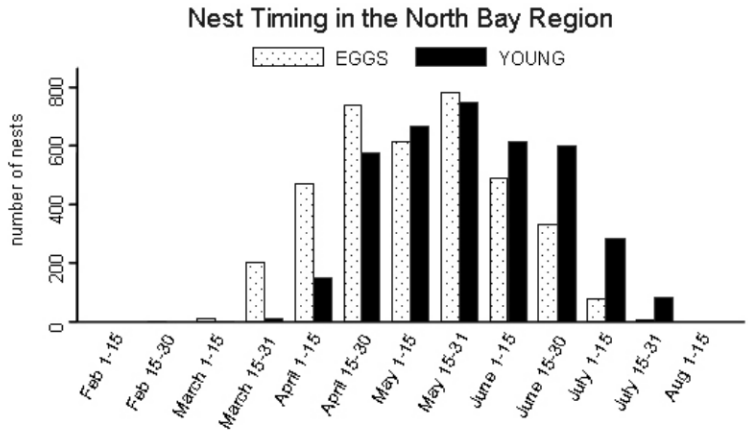


Figure 4. Timing of the breeding season for birds in the North Bay Region. Data are total number of nests by first egg and hatching dates from 67 species at four sites in Sonoma and Marin counties; 1979-2005 (PRBO unpublished data).

Modify grazing practices. Modify timing, duration, and frequency of grazing to ensure plant vigor, regrowth and reproduction, as well as meeting the habitat requirements of target wildlife species. Rotate grazing away from sensitive areas just prior to and during the breeding season of the North Bay Region (mid-March – late-July; Figure 4) to protect ground- and shrub-nesting birds.

Retain snags and woody material. Numerous bird species depend on decaying trees and limbs for nest cavities or for storing food. Cavity-nesting birds make up a large proportion of the bird species that breed in oak woodlands. Allowing dead limbs to remain on living trees and retaining dead trees will allow birds to excavate cavities in rotting wood. Try to leave at least one dead tree per acre.[3]

Connect Watersheds. Preserve and restore the transitional areas between riparian woodlands and adjacent upland oaks or scrub (Figure 2). Birds are not confined to any one habitat type and, for example, species that regularly nest in riparian may use adjacent habitats for foraging. Swainson's Thrushes nest almost exclusively in riparian habitats in the North Bay Region but their recently fledged young regularly use oak-bay woodlands and coastal scrub for foraging and cover.[10]

Manage non-native animal species. Non-native birds may compete with native birds for nest cavities. In oak woodlands, European Starlings are of particular concern. Wild Turkeys were introduced to the North Bay Region and are emerging as a concern because they eat large amounts of acorns which may impact oak regeneration, they disturb soil which may increase the spread of non-native plants, and they are known to be aggressive toward humans and damage crops such as wine grapes. Other non-native animals, such as domestic cats, kill millions of birds every year.

To reduce the effects of non-native animals on native birds:

- Do not feed or otherwise encourage populations of non-native animals.
- Keep cats indoors.
- Do not put bird feeders in a yard where a cat might ambush feeding birds.
- Eliminate sources of food such as open garbage cans, open compost piles, or outdoor pet food dishes that attract and increase the number of stray cats or other predators.

Restore riparian corridor width. Most riparian corridors today are much narrower than they were historically. There is not one generic riparian corridor width that will keep water clean, stabilize stream banks, protect fish and wildlife, and satisfy human demands on the land. The effect of riparian corridor width varies by bird species and riparian type. In general, however, larger widths are needed for wildlife habitat.[2, 11] Warbling Vireos in Marin County are nearly absent from streams widths less than 60 meters (197 feet) but increase greatly at widths more than 120 meters (394 feet).[11]

Plant native plants. Plant native grasses, shrubs, and trees that are adapted to local conditions. Plant species that don't naturally occur in the North Bay Region will require extra care and maintenance to become established and some may spread to areas where you don't want them (Table 2). Observe the nearby native vegetation to identify what to plant[8] and refer to Table 1 for local native plant species important to birds. *Note: Some plant species will be more appropriate than others depending on whether you live in a coastal or inland locale.*

Focus on increasing the number and diversity of fruiting plant species as these are essential food resources to birds year round. Species that are particularly important in the North Bay Region include elderberry and California blackberry.

Table 1. Recommended native riparian and oak woodland plants found in the North Bay Region. *Note: Some plant species will be more appropriate than others depending on whether you live in a coastal or inland locale. Find a local model for your project.*

Plant Species	Woodland	Occurrence[9]
Alder, Red *Alnus rubra*	Riparian *Midstory; Canopy*	Does best in full to partial shade. Stabilizer-good for restoring degraded areas. Found in wet places.
Alder, White *Alnus rhombifolia*	Riparian *Midstory; Canopy*	Full sun. Stabilizer-good for restoring degraded areas. Found along permanent streams.
Ash, Oregon *Fraxinus latifolia*	Riparian *Midstory; Canopy*	Found in canyons, streambanks, woodlands.
Bay, California *Umbellularia californica*	Riparian; Oak *Canopy*	Found in canyons, valleys.
Box Elder, California *Acer negundo*	Riparian *Midstory; Canopy*	Stabilizer-good for restoring degraded areas. Found along streamsides.
Buckeye, California *Aesculus californica*	Riparian; Oak *Canopy*	Found on dry slopes, canyons, borders of streams.
Maple, Bigleaf *Acer macrophyllum*	Riparian *Canopy*	Found along streambanks, canyons.
Oak, Blue *Quercus douglasii*	Oak *Canopy*	Full sun. Needs excellent drainage. Found on dry slopes, interior foothills, woodlands.
Oak, Coast Live *Quercus agrifolia*	Riparian; Oak *Canopy*	Full sun. Needs excellent drainage. Found in valleys, slopes, woodlands.
Oak, Interior Live *Quercus wislizenii*	Oak *Canopy*	Full sun. Needs excellent drainage; stabilizer-good for restoring degraded areas. Found in interior canyons, slopes, valleys.
Oak, Valley *Quercus lobata*	Riparian; Oak *Canopy*	Full sun. Found on slopes, valleys.
Pine, Foothill *Pinus sabiniana*	Oak *Canopy*	Full sun. Needs excellent drainage. Found in foothill woodlands.
Willow, Arroyo *Salix lasiolepis*	Riparian *Midstory*	Full sun. Easily started from cuttings; stabilizer-good for restoring degraded areas. Found in marshes, meadows.
Willow, Pacific *Salix lucida*	Riparian *Midstory*	Easily started from cuttings; stabilizer-good for restoring degraded areas. Found in wet meadows, seepage areas.

Table 1 cont.

Plant Species	Woodland	Occurrence[9]
Blackberry, California *Rubus ursinus*	Riparian *Understory*	Easily started from divisions; stabilizer-good for restoring degraded areas. Found in moist places, streamsides.
Buckbrush *Ceanothus cuneatus*	Oak *Midstory; Understory*	Full sun. Needs excellent drainage; intolerant of frequent watering; stabilizer-good for restoring degraded areas. Found on dry, rocky slopes.
Coffeeberry, California *Rhamnus californica*	Riparian; Oak *Midstory; Understory*	Needs excellent drainage; intolerant of frequent watering.
Dogwood *Cornus sericea*	Riparian *Midstory; Understory*	Easily started from cuttings. Generally found in moist places.
Elderberry, Blue *Sambucus mexicanai*	Riparian; Oak *Midstory*	Easily started from cuttings. Found in forest openings, streambanks.
Elderberry, Red *Sambucus racemosa*	Riparian *Midstory*	Easily started from cuttings. Found in moist places.
Mugwort *Artemisia douglasiana*	Riparian *Understory*	Stabilizer-good for restoring degraded areas. Found in open to shady places.
Nettle, Stinging *Urtica dioica*	Riparian *Understory*	Found in moist places, streambanks.
Salmonberry *Rubus spectabilis*	Riparian *Understory*	Does best in full to partial shade. Easily started from divisions; stabilizer-good for restoring degraded areas. Found in moist places.
Sedge *Carex* spp.	Riparian *Understory*	Stabilizer-good for restoring degraded areas. Found in moist places.
Snowberry *Symphoricarpos albus*	Riparian; Oak *Understory*	Does best in full to partial shade. Easily started from divisions; stabilizer-good for restoring degraded areas. Found in shady woods, streambanks.
Swordfern *Polystichum californicum*	Riparian *Understory*	Does best in full to partial shade. Easily started from divisions; needs excellent drainage. Found in woods, streambanks, and rocky, open slopes.
Thimbleberry *Rubus parviflorus*	Riparian *Understory*	Easily started from divisions. Found in moist, shady areas.
Toyon *Heteromeles arbutifolia*	Oak *Midstory; understory*	Full sun. Intolerant of frequent watering; needs excellent drainage.
Wild Rose, California *Rosa californica*	Riparian *Understory*	Full sun. Easily started from divisions; stabilizer-good for restoring degraded areas. Found in moist places.

Plant a diversity of woodland plant species. Many different oak species ensures that acorns will be available from at least one type of oak in a given year. Also, high shrub diversity in riparian woodlands attracts many different types of birds (Figure 5). Greater diversity of plant species = greater diversity of birds!

Promote diverse vegetation structure. A diversity of plant species, ages, shapes, and sizes will provide more nesting and feeding sites for a greater variety of birds (Figure 5). Also, the greater number of potential nest sites, the greater the effort required for predators to locate prey (nest sites), and thus the safer the birds.

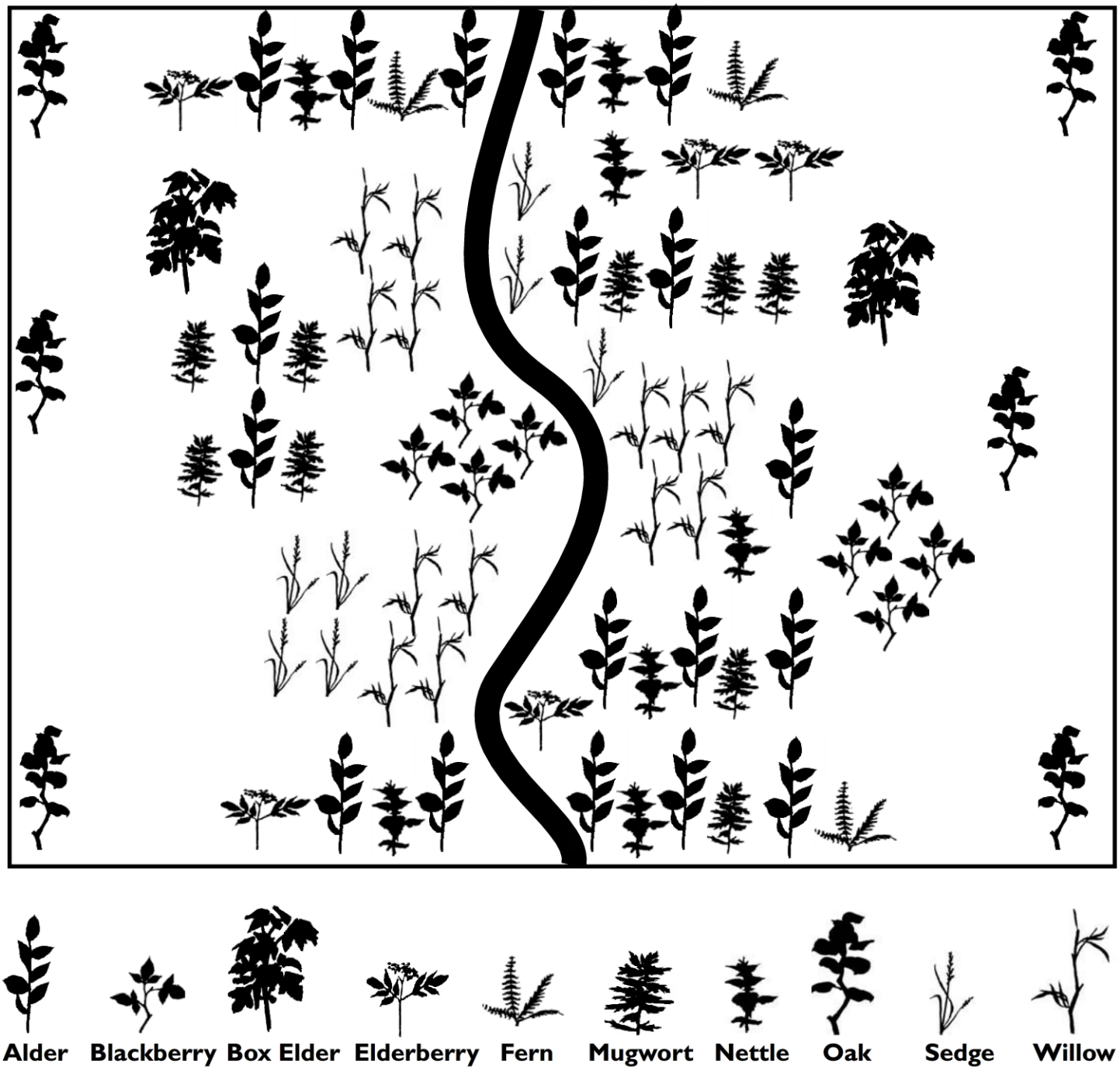


Figure 5. A simplified schematic planting design showing: (1) multiple species plantings; (2) locations for plant species needs; (3) clumped design interspersing trees and understory plants; (4) transition from riparian to oak woodland. Plant a variety of woodland species to provide a diverse vegetation structure. **Greater diversity of plant species = greater diversity of birds.**

Remove non-native vegetation. Non-native vegetation can out-compete and hinder the establishment of native plant species thereby reducing vegetation structure. Invasive non-native plants often spread very quickly and should be removed at the first sign of their presence (Table 2). Removal of invasive non-native vegetation will allow native vegetation growth and subsequently provide more and better habitat for birds.

Promote oak regeneration. Native oak regeneration is a problem in parts of the North Bay Region. This means that mature oak trees are dying without enough seedling and sapling oak trees to replace them. You can help to promote oak regeneration by protecting young trees from grazing and browsing animals or by planting acorns or oak seedlings. A variety of devices, such as metal screens and plastic tubing, prevent browsing of small trees. Be careful to only plant acorns or seedlings that come from a parent tree growing nearby.[12]

Table 2. Invasive non-native plants of the North Bay Region and removal methods.

Non-native Plant	Removal Method[13]
Acacia *Acacia* spp.	Manual removal
Broom, French *Genista monspessulana*	Weed wrenching
Broom, Scotch *Cystisus scoparius*	Weed wrenching
Eucalyptus, Blue Gum *Eucalyptus globules*	Manual removal; stump shading or grinding to prevent resprouting
Grass, Pampas *Cortederia selloana*	Manual removal of entire root ball by hand, shovel, or chain saw
Hemlock, Poison *Conium maculatum*	Manual removal by hand
Iceplant *Carpobrotus edulis*	Manual removal by hand
Ivy, Cape *Delaireia odorata*	Manual removal of ivy and all plants growing with ivy
Reed, Giant *Arundo donax*	Manual removal in combination with chemical control

Lark Sparrow (*Chondestes grammacus*)

Tracking your Progress

Every financial investment needs to be reviewed periodically to ensure successful gains. The same is true when investing in wildlife habitat. It is important to track the progress of your habitat enhancement projects. A diverse bird community indicates that your enhancement efforts are working!

Observe the birds on your property to help determine the success of your efforts. Keep notes through time and note changes as habitat restorations mature. Chileno Valley landowner Sally Gale tracked the changes on her property following her restoration project. "The number and type of Neotropical migratory species has skyrocketed in the creek. As the hardwoods get bigger, more birds are present. We always have a full house!"

Here are a few of suggestions for tracking the progress of your enhancement project:

- Use the common oak and riparian woodland bird list (Table 3) to determine which bird species visit your property.
- Watch for signs of nesting: carrying food or nesting material, adults feeding young outside of the nest.
- If you have a nest box, monitor the contents. More information on nest box monitoring can be found at: http://www.birds.cornell.edu/birdhouse

Table 3. Common riparian and oak woodland bird species of the North Bay Region.

Species	Scientific Name	Season	Nesting Location
Acorn Woodpecker	*Melanerpes formicivorus*	Year round	Cavity
American Robin	*Turdus migratorius*	Year round	Midstory
Anna's Hummingbird	*Calypte anna*	Year round	Midstory
Bewick's Wren	*Thryomanes bewickii*	Year round	Cavity
Black Phoebe	*Sayornis nigricans*	Year round	Under bridges, ledges
Black-headed Grosbeak	*Pheucticus melanocephalus*	Summer	Midstory
Bushtit	*Psaltriparus minimus*	Year round	Midstory
California Towhee	*Pipilo crissalis*	Year round	Understory
Chestnut-backed Chickadee	*Poecile rufescens*	Year round	Cavity
Common Yellowthroat	*Geothlypis trichas*	Year round	Understory
Downy Woodpecker	*Picoides villosus*	Year round	Cavity
Hermit Thrush*	*Catharus guttatus*	Winter	
Hutton's Vireo	*Vireo huttoni*	Year round	Midstory
Nuttall's Woodpecker	*Picoides nuttallii*	Year round	Cavity
Osprey	*Pandion haliaetus*	Year round	Canopy
Pacific-slope Flycatcher	*Empidonax difficilis*	Summer	Midstory
Red-shouldered Hawk	*Buteo lineatus*	Year round	Canopy
Ruby-crowned Kinglet*	*Regulus calendula*	Winter	
Song Sparrow	*Melospiza melodia*	Year round	Understory
Swainson's Thrush	*Catharus ustulatus*	Summer	Understory
Tree Swallow	*Tachycineta bicolor*	Summer	Cavity
Warbling Vireo	*Vireo gilvus*	Summer	Canopy
Western Scrub-Jay	*Aphelocoma coerulescens*	Year round	Midstory
Wilson's Warbler	*Wilsonia pusilla*	Summer	Understory

* winter season only

About PRBO Conservation Science and California Partners in Flight

This guide is a collaborative effort of PRBO Conservation Science and California Partners in Flight. Founded in 1965 as the Point Reyes Bird Observatory, PRBO Conservation Science (PRBO) is dedicated to conserving birds, other wildlife and ecosystems through innovative scientific research and effective outreach. Working throughout the West, our 120 staff scientists and seasonal biologists study birds and ecosystems to protect and enhance biodiversity. We work with governmental, nonprofit and private landowner partners to ensure that sound science is guiding conservation efforts and management practices. For more information, visit: http://www.prbo.org.

California Partners in Flight (CalPIF) is the statewide chapter of an international working group dedicated to conserving bird populations and their habitats throughout the western hemisphere. CalPIF was established in 1992 in response to growing concerns about declines in populations of landbird species across California. As a coalition of public and private agencies, CalPIF identifies conservation and management priorities for landbird species in California. For more information, visit: http://www.prbo.org/calpif.

Building on our songbird research in riparian and oak woodlands in California, PRBO and CalPIF are developing strategies for protecting and managing oak and riparian woodland habitats and their associated birds. This information is summarized in The Oak Woodland Bird Conservation Plan and The Riparian Bird Conservation Plan (available at www.prbo.org/calpif). These plans provide science-based, hands-on management recommendations for biologists and habitat managers throughout the state of California.

Acknowledgements

Funding for this project came from an anonymous private foundation located in the North Bay Region. The illustrations were created by Zac Denning and Adrienne Olmstead. Valuable input was provided by: Geoff Geupel, Judith Lowrey, Melissa Pitkin, Ann Young, The Bay Institute, Marin County Cooperative Extension, Marin RCD, Napa County RCD, North Coast RC&D, Prunuske Chatham, Inc., Riparian Habitat Joint Venture, San Francisco Bay Joint Venture, Southern Sonoma RCD, and staff of the Natural Resources Conservation Service.

Extra Resources on Habitat Enhancement

Natural Resources Conservation Service (NRCS) offers numerous incentive programs for agricultural producers to create and enhance habitat on private land. Programs that incorporate riparian and oak woodland habitats include Wetlands Reserve Program (WRP), Conservation Reserve Program (CRP), and Environmental Quality Incentives Program (EQIP). The Wildlife Habitat Incentive Program (WHIP) provides support to private landowners for wildlife habitat development. For more information on these programs, visit: http://www.ca.nrcs.usda.gov/programs/

The North Coast Resource Conservation & Development Council (RC&D) promotes partnerships that will initiate, support and implement projects responsive to the needs of the people in Lake, Mendocino, Marin, and Sonoma counties focusing on opportunities in agriculture, economic and community development, and education. http://www.californiarcandd.org/

Resource Conservation Districts are non-regulatory local special districts established through the State to provide conservation information to local agricultural and other landowners. They are governed by an appointed or elected board of local landowners.

Marin Resource Conservation District
PO Box 1146, Point Reyes Station, CA 94956
(415) 663-1170

Mendocino County Resource Conservation District
405 S. Orchard Avenue, Ukiah, CA 95482
(707) 468-9223

Napa County Resource Conservation District
1303 Jefferson St., Suite 500B, Napa, CA 94599
(707) 252-4188

Southern Sonoma Resource Conservation District
1301 Redwood Way, Suite 170, Petaluma, CA 94954
(707) 794-1242 (x5)

West and East Lake Resource Conservation Districts
889 Lakeport Blvd., Lakeport, CA 95453
(707) 263-4180

The U.S. Fish and Wildlife Service (USFWS) supports voluntary restoration of fish and wildlife habitats on private land through the Partners for Fish and Wildlife Program (PFW). For more information on this program, visit: http://www.fws.gov/partners/index.htm. The Landowner Incentive Program (LIP) is funded by the USFWS and administered by the California Department of Fish and Game. This program supports on-the-ground projects that enhance, protect, or restore habitats that benefit "species-at-risk" on privately owned lands. For more information, visit: http://federalaid.fws.gov/lip/lip.html

The University of California Cooperative Extension (UCCE) is a research and education branch of the University of California. Advisors are available in county offices with expertise in wildlife, range management, environmental horticulture and watershed management.

UCCE-Lake
883 Lakeport Boulevard, Lakeport, CA 95453
(707) 263-6838

UCCE-Marin
1682 Novato Blvd. Suite 150B, Novato, CA 94947
(415) 499-4204

UCCE-Mendocino
890 N. Bush Street, Ukiah, CA 95482
(707) 463-4495

UCCE-Napa
1710 Soscol Avenue Suite 4, Napa, CA 94559-1315
(707) 253-4221

UCCE-Sonoma
133 Aviation Blvd, Suite 109, Santa Rosa, CA 95403
(707) 565-2621

Wild Farm Alliance was established by a national group of wildlands proponents and ecological farming advocates who share a concern for the land and its wild and human inhabitants. For more information, visit: http://www.wildfarmalliance.org/about/index.htm

Northwest Coalition for Alternatives to Pesticides works to protect people and the environment by advancing healthy solutions to pest problems. For more information, visit: http://www.pesticide.org.

Calflora Database is a nonprofit organization dedicated to providing information about California plant biodiversity for use in education, research and conservation. It provides access to habitat descriptions, photographs, observations, nomenclature, distribution maps, and other data on California's wild plants. For more information, visit: http://www.calflora.org.

California Native Plant Society seeks to increase understanding of California's native flora and to preserve this rich resource for future generations. For more information, visit: http://www.cnps.org.

California Oak Foundation (COF) is a non-profit educational organization committed to preserving the state's oak forest ecosystem and its rural landscapes. COF works with landowners to conserve oak woodlands, mitigate losses of biodiversity, plan responsibly for the urbanization pressures in California, and protect the State's critical watersheds and wildlife habitat. For more information, visit: http://www.californiaoaks.org.

National Audubon Society works to to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. For more information, visit: http://www.audubon.org.

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