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California grasslands and birds

By Lishka Arata, PRBO Conservation Science Educator and Biologist
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Historically, 8 million hectares (about 20 million acres) of grassland was found in California, mostly in the Central Valley. Today, only 36 percent of that remains.

This includes native perennial grasslands, annual grasslands (mostly introduced species) and pasture. Grassland is an important yet overlooked habitat in need of public attention and conservation efforts.

Birds are indicators of environmental health and thus an important organism to study to protect healthy ecosystems. Scientists and educators at PRBO (Point Reyes Bird Observatory) Conservation Science advance the conservation of birds, other wildlife, and ecosystems through scientific research and outreach. Our research of more than 40 years has shown overall decreases in bird populations. Habitat loss is one of the key factors in this downward trend. Long-term bird monitoring helps us identify critical issues for bird conservation and develop recommendations for the best conservation and management practices.

Grasslands provide food, shelter, and nesting habitat for many resident and migrant bird species in California. Northern harriers, low-flying raptors with a distinctive white rump patch and owl-like face, depend on grasslands to harbor their rodent prey and for nesting spots with both bare ground to place a nest and grassy cover to camouflage it. Other raptors such as white-tailed kites, red-tailed hawks, and golden eagles also depend upon the rodent prey provided by healthy grassland ecosystems.

Red-winged and tri-colored blackbirds and western meadowlarks nest on or within 3 feet of the ground and depend on grass seeds and insects for their food. Some migratory shorebird species such as the mountain plover rely on sparsely vegetated native perennial grasslands for feeding and roosting during the winter.

Over the past 40 years grassland bird populations have declined by 40 percent nationwide. California's grassland birds face five major problems. The first is replacement of native perennial and annual grasses and forbs with exotic plants. This began with Spanish settlement in the late 1700's and has continued to the present. Most exotics reduce plant diversity by spreading rapidly and creating a simple system with just a few dominant plants. This results in reduced insect and wildlife diversity.

Diversity is important for survival of species with specialized niches and for strengthening habitat resistance to disease or disaster. Loss of grasslands due to exotic plants and conversion to orchard, vineyard or agricultural land are another key threat to grassland birds.

The third problem is decreased patch size of remaining grassland habitat. A study in Illinois of the grasshopper sparrow showed that this species was only found in patches of grassland that were 100 times its territory size. If patches of remaining grassland habitat continue to shrink, they may not be able to support the remaining grassland birds and other wildlife.

The fourth threat is that the majority (over 86 percent) of this habitat rests in private hands, meaning they cannot be permanently protected unless the individual landowner makes that decision. Finally, there is a lack of information on grassland birds in California. This makes it difficult to form regionally appropriate science based solutions to grassland conservation. There is a great need to be filled here by graduate students, scientists, and citizen scientists.

Each one of these problems presents an opportunity. The fact that much of California's remaining grasslands lie in private hands presents a wonderful opportunity for conservation groups and private landowners to form cooperative relationships and create win-win land management plans.

PRBO has worked with many partners and private landowners to reach some very successful outcomes for birds and native habitat restoration on private lands. Creating and maintaining these relationships through active outreach and education is key to initiating restoration projects that aid in combating exotic plant invasion, establishing grassland bird monitoring that could fill in the present informational gaps, and most importantly preserving our remaining grassland habitat

Glossary of terms

Perennial grass: Lives for more than two years; has persistent roots; spreads by underground stems and seeds; usually in bunch form.

Annual grass: Lives for one year or less; relies on seed dispersal for survival; spreads quickly; comprise most introduced grasses; usually in mat form.

Forbs: Herbaceous, or non-woody, flowering plants.

Native: From local area and therefore adapted to survive with other native species.

Introduced: Foreign species brought to local area by human activity.

Exotics: Foreign species.

Indicator species: The state of this species reflects the state of the habitat it occupies; they can act as early warnings to biologists.

Niche: The place in the food web and habitat that a plant or animal occupies in relation to others.

Lishka Arata and Wade Belew of Cotati Creek Critters and California Native Grasslands Association will highlight this important habitat during a public "Birds and California Grasslands" walk at Tolay Lake Regional Park (Petaluma) Sunday, May 3.

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