Background and Project Description

Tricolored Blackbird Habitat Enhancement at the San Jacinto Wildlife Area

The Tricolored Blackbird (Agelaius tricolor) is a medium-sized songbird member of the family Icteridae with 95% of its historic breeding range within the state of California. It has been called by some, the California Blackbird. The Tricolored Blackbird (or tricolor) is distinguished by its reproductive behavior in that it forms the largest breeding colonies of any land bird in North America, historically as large as 300,000. In southern California, nesting occurs from mid-March to early June. Nests are built within very small territories that usually occupy a few square meters in close proximity to each other. Only females incubate the eggs but both parents provision young. Although adult tricolors feed primarily on grains during most of the year, young birds up to nine days old depend entirely on arthropods for proper development. Adult birds leave the nest site in flocks to search for insects and other invertebrates in fields of native and non-native forblands and grass/forbland mixtures, irrigated pasture, lightly grazed rangeland, dry season pools, and mowed alfalfa (Medicago sativa) that can be up to five kilometers away. The most important prey items include beetles, grasshoppers, locusts, caterpillars of butterflies and moths, true bugs, and arachnids.

In the late nineteenth century, tricolors were described by biologists as the most abundant bird species in southern California with some flocks so large, they would darken the skies overhead, a description reminiscent of the now-extinct Passenger Pigeon. Once numbering in the millions statewide, there are only about 140,000 remaining in existence today. Their colonial breeding habit make them especially vulnerable to human disturbance, habitat loss, and changes in their environment. The population has declined so much in the last decade that it is currently at serious risk of extinction. For this reason, and the many ongoing threats facing the species, the California Fish and Game Commission recently added it to the State’s list of endangered species on an emergency basis.

The San Jacinto Valley is the most important breeding area for tricolors in southern California. In the past, colonies often occupied cattail marshes at various locations on the San Jacinto Wildlife Area, one of the most important protected areas in southern California for many bird species. However, since 2004, nesting has occurred primarily on private land, often at nearby dairy farms which are attractive to the birds because they often provide both suitable nesting substrate, in the form of triticale (a wheat-rye hybrid grain crop grown for cattle feed), and an abundance of insect prey in nearby alfalfa fields. However, their presence creates a serious problem for both the birds and the farmers. Triticale is usually harvested during the time when young birds are still in the nest, and thousands of baby birds can be killed when a field is harvested. These losses represent major sources of mortality to the species and have been attributed to the rapid decline of the population over the last 20 years. Although officially protected under the Migratory Bird Protection Act, the legal system has been reluctant to enforce the law. The recent listing under the State’s Endangered Species Act will almost certainly change that. The challenge to conservationists and wildlife managers now is to expand the availability of high quality nesting habitat on protected lands and encourage their use by Tricolored Blackbirds.

The specific objectives of this project are to:

- investigate the feasibility of enhancing breeding habitat for Tricolored Blackbirds in the San Jacinto Wildlife Area and evaluate the effectiveness of project sites in attracting Tricolored Blackbird colonies,
• reduce the incidence of nesting at dairies in the San Jacinto Valley,

• achieve levels of reproductive success at project sites exceeding replacement of adult birds
  [estimated to be 60% of the population per year], and

• fill critical gaps in our knowledge of habitat selection and resource use, particularly
  preferences among upland nesting substrate types and attractive densities of invertebrate
  prey, essential to conserving this species in this and other areas in California.

Our plan is to co-locate secure nesting substrate with insect-productive forage and natural
grasslands in an effort to create habitat conditions that are superior to those at nearby dairies. We
are experimenting with two types of nesting substrate: 1) triticale, an annual crop that grows
rapidly to a height and density preferred by the birds, and 2) slower-growing perennial native
vegetation which may provide greater protection from predators. Predation by mammals such as
raccoon and coyotes, and by other birds such as native Black-crowned Night Herons and Great
Blue Herons and non-native Cattle Egrets can have a devastating impact on a nesting colony of
Tricolored Blackbirds. In upland areas away from agriculture fields and freshwater marshes,
Tricolors typically select dense growth of plants that are heavily armored with spines as nesting
substrate, species such as Himalayan blackberry, California wild rose, thistle, and stinging nettle.
We have chosen to plant wild rose and stinging nettle; both Himalayan blackberry and preferred
thistle species are non-native and discouraged by management at the Wildlife Area. We are also
experimenting with two types of foraging habitat: 1) alfalfa grown to maximize insect production
and 2) irrigated upland grass/scrubland.

We have already planted the triticale and alfalfa and are now in the process of planting a 2.5 acre
field with wild rose and nettle. We are obtaining the roses in five gallon pots from the
Mockingbird Nursery in Riverside. We hope to plant at least one square acre of roses this year. At
a spacing of four feet, this will require 2500 plants. We expect the plants to grow rapidly and to
form a dense thicket four to five feet high within about three years. We currently have five
hundred plants in the ground, planted in early January. They are establishing well, so we will be
planting another 800 this month.

We greatly appreciate the willingness of your class to help. Our crew will start early in the
morning and will have most or all of the holes dug by the time your students arrive. At that point,
we will begin to put the plants in the ground. The plants are not very spiny when they are small
and we will provide work gloves for everyone. We will send you instructions for where to meet
prior to Tues. Please feel free to call myself or Nick Peterson if you have any questions.