



BIOCONTROL REPORT II: THE BATTLE FOR EDGEWOOD

By Paul Heiple

Last year I wrote about the invasion of Edgewood park by aliens, first plants like Yellow starthistle (YST), *Centaurea solstitialis*, and then the insect biocontrol agents which can easily escape the notice of the casual observer. This year the battle has intensified. The invasions also continue with a new fly on the YST and a weevil on the Italian Thistle, the first biocontrol agent noted on that weed. An old invader also was found attacking another weed species in Edgewood, tocalote.



Damaged YST flower heads, unable to produce seeds

Last year, the forces of fire, mowing, hand weeding and biocontrol agents came together in such a way that this year Yellow starthistle appears to be in retreat. If you can remember where and how much YST you saw in years past, I think you will agree there were fewer plants this year and it was less noticeable or missing in some areas it had grown before. Another observation is that the YST plants tend to be larger, a result of decreased competition from other plants of the same species.

This year, those forces have (with the exception of fire) continued and biocontrol seems to be at

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GENERAL MEETING AND MEMBERS APPRECIATION BBQ SET FOR OCT. 21

The annual general membership meeting of the Friends of Edgewood is set for Sunday, October 21st, from 2 to 5 p.m.

We have been holding these meetings every year since our founding in 1993. They started out as potluck affairs, but for the last 2 years the Friends have been providing all the fixings for a delicious BBQ. If you haven't experienced Frank Figoni and Stu Simpson working the grill, you owe it to yourself to come just for that.

The meetings are a great way for members to meet and socialize with each other and with distinguished members of our community. In past years we've been honored to have State Congressmen, County Supervisors, Parks and Recreation Commissioners, Parks Foundation Board Members and Staff, and Parks and Recreation Staff.

There are always displays and discussions relating to our activities during the year. And of course the coveted Best Friend and other awards will be presented. You'll also get to elect Directors for the FoE Board.

What better way to spend a Fall afternoon than picnicking at Edgewood! `

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A CLOSER LOOK AT OWL'S CLOVER

By Bob Young

This is the sixteenth of a series of articles describing the flowers pictured in our wildflower brochure. —ed.



Photo by Kathy Korbholz

Owl's Clover, (scientific name *Castilleja densiflora*), is shown in the brochure "Common Native Wildflowers of Edgewood" published jointly by the Santa Clara Valley Chapter of the California Native Plant Society and Friends of Edgewood Natural Preserve. The scientific name was for many years *Orthocarpus densiflorus*. In 1993 the new Jepson manual lumped most of the genus *Orthocarpus* into the genus *Castilleja*. *Castilleja* refers to Spanish botanist Domingo Castillejo (1744 – 1793).

Owl's Clover is in the Scrophulariaceae Family. The common name of this family is Figwort or Snapdragon family. In the Jepson Manual, *Castilleja* is described as a "Perennial green root-parasite," meaning that the plant gets some nourishment by growing into the roots of other plants, but has its own root system and green, food-making leaves. At one time the genus *Castilleja* was used only for Indian Paintbrush; now, the Jepson Manual shows the common names Indian Paintbrush/Owl's-Clover for that genus.

Owl's Clover can be found at less than 4200 feet elevation, from California's North Coast Ranges to northern Baja California and east to the central Sierra Nevada foothills. In San Mateo County, it is a very common annual of grasslands, open fields, and serpentine soils, blooming in April and May. The purplish-colored bracts give the plume-like form and most of the gaudy color to the spikes. The plant is highly variable, having many local forms. Owl's Clover species hybridize readily and are often hard to tell apart. There is not an obvious relation with owls or with clover.

The San Mateo County Library system found a reference to Domingo Castillejo in a U.S. Geological Survey publication covering Native Wildflowers of the North Dakota Grasslands. In that article, they state that the genus *Castilleja* "was dedicated to the distinguished Spanish botanist Domingo Castillejo in 1781."

Owl's Clover is a secondary, but critical, food source for the rare checkerspot butterfly. The checkerspot butterfly larvae primarily feed on California Plantain, but as the Plantain dries up, the larvae will use Owl's Clover for food. For further information on this, you can go to our web site at <http://www.friendsofedgeswood.org/newsletters/1995/9505/life.htm>. This will connect you with Susan Sommers' article on the *Life Cycle of an Island Nymph*. Another interesting site available is The Trail Center's <http://www.trailcenter.org/newsletter/1998/dec1997-jan1998/decjan98.htm>. This concerns Owl's Clover and the checkerspot butterfly at Calero Lake Estates in southern Santa Clara County.



School Outreach in June brought Encinal School 3rd-graders to Edgewood. Here Paul Heiple holds their attention with a geology lesson.

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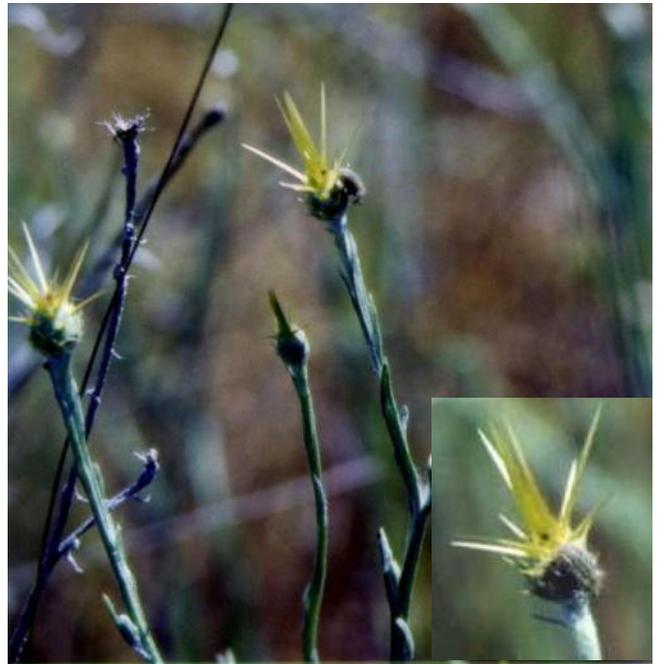
its peak. Even a somewhat casual look at the fields of YST will tell the observer that something is wrong this year. A closer look will show that many flower heads are damaged or dead. The flowers seem to be arranged on the plants differently than in other years, clustered along the stems instead of at the ends of the branches. This is the story of this year's battle that has led to reduced seed production.

The story begins in April when the first biocontrol agent became active, *Chaetorellia succinea*, the false peacock fly. In April, YST has not begun to flower, and the false peacock fly is after another plant, tocalote (*Centaurea melitensis*). I confirmed the usage of this plant by taking some plants and placing them in plastic bags. Within a week, adult flies had begun to emerge from the flower heads. The damage to tocalote appears to be minimal, and it may never be hit hard but it will aid in the buildup of flies in the spring so that they can attack YST.

In May while I was inspecting a weedy area in Portola Valley, I noted evidence of insect activity on the flower heads of Italian thistle (*Carduus pycnocephalus*). This turned out to be a new species of biocontrol that I had not seen in previous years. It was the weevil *Rhinocyllus conicus*. I soon found that it was widespread with large populations nearly everywhere I looked. Edgewood had a good population and the damage they did to Italian thistle in Edgewood is extensive.

While identifying this species of this weevil, I came across some disturbing news that this species attacked some native thistles in the prairie states and had possibly contributed to their decline. This weevil eats many species in the thistle tribe: the genus *Cirsium* is frequently a food plant. I checked our rare population of *C. fontinale* at Coyote Ridge south of San Jose where I found *R. conicus* on the flower heads. The literature stated that *R. conicus* is active only in the spring and I found this to be the case. *C. fontinale* is a perennial and flowers over a long season. The weevil will no doubt reduce seed

production but its impact on the populations is unknown at this time. The impact on Italian thistle, which is a spring flowering annual, should be much greater.



Hairy starthistle weevil, *Eustenopus villosus* and aborted buds

By June when the YST should have been getting into full flower, another interesting observation was made: many of the first buds had been destroyed before they could open. I attributed this to the bud weevil, *Bangasternus orientalis*, which I had noted in Edgewood three years earlier but had always found confined to an area on the south end of the Central Ridge. The bud damage this year was park-wide. The hairy starthistle weevil, *Eustenopus villosus*, also attacks young buds. I have never observed this behavior, in fact I have never seen either weevil eating young buds. The young bud damage three years ago was before I ever observed *E. villosus* in Edgewood but *B. orientalis* was observed and eggs of this species were also observed at that time. I suspect *B. orientalis* is most active at night or that it has a habit of falling off the plant when disturbed, making it difficult in either case to be caught in the act of feeding on YST buds. Further study will be needed to determine the insect responsible for the damage to the buds. The bottom line however is that one of the

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ADOPT-A-HIGHWAY UPDATE

By Ken Seydel

The weather gods were with us for our August cleanup of the Edgewood Extension (i.e. the freeway right-of-way). It was overcast and 67° instead of the 90's that we have had previously.

We welcomed three new (much needed) members this time: Suzi Crary, Sarah Divine, and Maggie Mah. They were joined by regular freeway warriors Carolyn Dorsch, Don Hohl, Billy James, Bill & Kathy Korbholz, Susan Russell, and Ken Seydel. We were able to clean 20 bags of trash in just 2½ hours.

Items of interest: Bungee cords, rolls of electricians tape, a Toyota hubcap and rim, 1 fuzzy slipper, an army duffel bag (with gear), a box wrench, and of course the usual money (only \$3 this time).

Won't you consider joining our fine group for this treasure hunt? WE REALLY COULD USE A FEW MORE VOLUNTEERS!! Recently we lost 4 of our regulars, and desperately need replacements.

If you have an interest in joining our great group please contact Ken Seydel. We will see that you are safety trained and equipped with your very own Picker, hard hat, goggles, gloves, and bright orange vest. `

DOCENT WRAP-UP

By Dianne Hunt

This season 45 docents led or coordinated approximately 52 docent-led walks with 537 people. This includes 4 reservation walks. We had 10 more docents participating this year than last year and 187 more people showed up this year than last. Thanks to all of our great docents for making this year successful.

Docent Training begins this October. If you know of anyone who is interested in participating next season, let me know as soon as you can. `

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biocontrol agents delayed the flowering of YST by several weeks. Had the rains of late June not come, some of those plants might have never gotten a chance to flower.



Damage by adult weevil

July saw the full complement of biocontrols on YST. The second growth of buds made the YST plants look odd, many axial buds and few terminal buds.

Chaetorellia succinea and *Eustenopus villosus* were abundant. Throughout the park were a few *Bangasternus orientalis* and a new biocontrol, *Urophora sirunaseva*, the

YST gall fly making occasional appearances. The gall fly forms galls in the seed head, taking up the space where achenes would form and using the resources of the plants to form the galls which the larvae eat. With all four species in Edgewood, very few heads were left unaffected.

By late August, many of the YST plants were nearing the end of their lives and fewer than 1% of the flowers had produced any achenes. You can observe this for yourself: look for flower heads that have dried and opened exposing a white fluffy interior between the spiny phyllaries. These are the ones that have produced seeds. Most of the ones you will find will be dried and closed with the dead flower parts a brownish yellow and still attached to the flower head. These have produced nothing but insects.

This year's battle will rage for the next few months, then all will be quiet again. Early next spring we will be able to assess the damage to YST and Italian thistle to determine the strategy for next year's battle. Perhaps this year was the last big battle with YST for the grasslands of Edgewood. `

Ed. note: Photographs for this article provided by Kathy Korbholz.

RANGER ROUNDUP: NEW KID ON THE BLOCK

By Susy Boyd



Actually, I'm not really a new ranger, I'm only new to Edgewood Park. I worked for 3 1/2 years as a Park Ranger at Coyote Point Park in San Mateo prior to arriving here at Edgewood. After getting a Master's degree in

Communications from UC Davis, I realized that all I really wanted to do was work in and for the great outdoors. I followed my friend up to Oregon and Washington to work as a seasonal Forestry Technician for four years. Returning to the Bay Area, I thought about being a veterinarian and took many math and science classes (after failing them in high school!) and found that I loved the challenge of these classes, and that I had actually become good with numbers and analytical skills. But the cost of veterinary school was daunting.

Then some friends of mine told me about working for the parks, which got me to thinking about working as a ranger. I was a Park Aide at Memorial Park in Loma Mar while I waitressed at night and began the Park Management Associate of Science degree at West Valley College in Saratoga. To my complete surprise, I was selected to be a permanent ranger after only one season as a Park Aide! Since that time, I have returned to West Valley College, and I will be finishing my degree at the end of summer. I have taken courses in Fire Management, Ecology, Geology, Interpretation, GIS/GPS, Maintenance, and Natural Resources. Eventually I would like to study Resource Management with an emphasis in Forestry.

After a number of years working in an urban environment, I am very happy to feel dirt under my feet again. I have been so impressed with both the dedication and the level of knowledge of the volunteers here at Edgewood Park. I learn from the volunteers every time I work with them. The bulk of my time here has been spent

learning about the Yellow starthistle weed eradication program. It is amazing to look at one side of a path where weed control has taken place, and across the path to the other side where nothing has been done and to see the difference. I would have thought the task to be too large to be accomplished, but luckily, the volunteers felt otherwise and got to work, and the results are truly inspiring.

The other feature of Edgewood that has caught my eye are the Black-tailed deer. I have always had a soft spot for deer, and it is a joy to be going about my duties here and look up and see a family cruise by. I hope to learn more about these beautiful animals here at Edgewood. The oak woodland ecosystem as a whole is interesting, and I thank all of you who are sharing your knowledge about the plant and bird/animal life with me. `

NFWF PROJECT UPDATE

The National Fish and Wildlife Foundation (NFWF) project for Habitat Restoration at Edgewood is now in its 6th month. Dr. Stuart Weiss, well-known conservation biologist with considerable experience studying the Bay checkerspot butterfly, is heading this project.

In the last 3 months, Stuart has completed the analysis of plant data from 340 quadrats, focusing on butterfly host plants, nectar sources, and grasses. Preliminary conclusions are that the best habitat for the butterfly host plants is on shallow soils well away from the freeway.

Stuart has also mapped plant transects with sub-meter accuracy using a high-end GPS, overlaid on new high-resolution aerial photographs.

Experimental treatment plots have been laid out, treatments assigned, and mowing/raking initiated. Planning for two prescribed burns is underway: one for the pre-rainy season and one for the fall. Planning has also begun for grazing treatments.

An application for a USFWS Recovery Permit has been submitted. `

BIRDS THAT NEST IN CAVITIES

By Lee Franks

Birds build nests to protect themselves, their eggs, and their young from predators and from adverse weather. Other animal species also build nests, but birds do so in a greater variety of forms, from a greater variety of materials, and on a greater variety of sites. One form of nesting that several species residing in the Park employ is called “**cavity nesting**.” Cavity nesters are birds that build their nests in tree cavities or holes. These cavities can be either natural (i.e. created by decaying wood), or excavated (i.e. created by woodpeckers).



Western bluebird

There are two types of cavity nesters, **primary** and **secondary**. The primary cavity nesters are woodpeckers, who can chisel cavities into living hardwood trees which they then

use for nesting sites. When they are finished nesting, the cavities become available for the secondary cavity nesters, who are unable to excavate. There are five primary cavity nesters in the Park (Northern Flicker and the Acorn, Downy, Nuttall’s, and Hairy woodpeckers), and seven secondary cavity nesters (Western Bluebird, Violet-Green Swallow, Ash-Throated Flycatcher, Bewick’s Wren, Chestnut-Backed Chickadee, Oak Titmouse, and White-Breasted Nuthatch).

While there are five species of woodpeckers present in the Park, current census data shows that they are not very abundant. Thus, few cavities are excavated, resulting in intense competition among the more abundant secondary cavity nesters for available cavities. One way to remedy this situation is to provide artificial housing (man-made nest boxes), which the birds accept as a suitable alternative to tree cavities. The boxes have an added advantage for the users

in that they can be placed closer to food sources. Several of these well-built, well-ventilated and predator-resistant boxes have been installed in the Park.

The most frequent users of the boxes are Bluebirds, Swallows, Flycatchers, Wrens, and Titmice. Beginning in mid-March, when the hormones of these birds are triggered, and courtship begins, the male will show the female several boxes from which she will eventually choose one to her liking and begin to bring in nest material. The Western Bluebirds use dried grass to form a cup shape by the female’s rotation around and around inside the box. The nest cup is then lined with small, finer dried grass. The Violet-Green Swallow also uses dried grass, but it lines the cup with feathers which usually come from the brooding female. The Chickadees and Titmice use lots of moss materials, lined with soft animal fur. The Flycatcher will use moss mixed with coyote scat which it lines with small animal fur. The Wren relies on small twigs.

With favorable weather, the first nest of the season, which is usually built within 5 or 6 days, shows up in early April. When the nest is complete, the female lays one



Bewick’s wren

egg per day until her clutch is complete. The average clutch size for Bluebirds, Swallows, and Flycatchers is 5, and for Wrens, Chickadees, and Titmice, the average is 7. The female does not usually begin the 12- to 15-day incubation period until the last egg is laid, thus insuring that all hatch at the same time. The Violet-Green Swallow is the exception to this rule. With this species, the female begins incubation before the clutch is complete, resulting in sequential hatching. The eggs are turned and rearranged frequently and incubation continues during the night. Though occasionally fed by the male, the

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female usually leaves the nest during the day for varying lengths of time, depending on prevailing temperatures. The incubating temperature for these birds is about 95° F.

The newly hatched young, weighing just over 2 grams, are altricial (almost entirely naked), with a few bits of down sprinkled on the head and along the spine. They are extremely susceptible to cold and weather changes at this time and are brooded by the female almost constantly until they are about 6 days old. During this time the male will bring food to the nestlings and the female. After six days, both parents share equally in bringing small, soft insects about once every 5 minutes. Each nestling, regardless of the total number in the brood, is fed 2 to 3 times each hour until it fledges. The food changes to larger insects, such as beetles and grasshoppers as the nestlings mature. By the eighth day, the nestlings' weight has increased 10 times, their eyes begin to focus, and pin feathers break

through the skin, supplanting the down. Development rapidly increases and by day 13 or 14, the body is completely covered with feathers. They are ready to take their first flight (about 150 ft.) when they are 21 to 25 days old.

Detailed records of nesting activities in each nest box are kept through the breeding season. Over the past two seasons, the records show that 84% of the nestlings raised in nest boxes successfully fledge. It is highly unlikely that such positive results could be achieved using tree cavity housing. There are far too many predators of these birds that are ready to interfere when they have unrestricted access to nest sites. It is hoped that the nest boxes at Edgewood will continue to aid secondary cavity nesting birds in their survival, so that they continue to eat insects, pollinate plants and disperse their seeds, and carry out all the other roles birds play in keeping the ecosystems of Edgewood functioning, while giving future generations of people the kinds of pleasures they have given us.



MEMBERSHIP DUES

New or renewing members may clip and complete this section to pay **tax-deductible** annual membership dues. Please send your check payable to **Friends of Edgewood Natural Preserve** to the return address on the back of this panel. Renewing members can determine their membership expiration date by checking the four-digit code to the right of their name on their mailing label. For example, if the code is 06/2001, membership runs through June 2001.

Questions, call Bob Young.

Name

Address

City State Zip

Home Telephone Work Telephone

- \$15 Basic Membership (includes newsletter)
- \$25 Family Membership (newsletter)
- \$7 Student/Retired Membership (newsletter)
- \$50 Supporting Membership (newsletter, *Edgewood Checklist of Plants*, and Edgewood photo greeting cards (boxed set))
- \$100 Benefactor Membership (newsletter, *Checklist*, greeting cards, and 28-minute video *Saving Edgewood Park*)
- \$250 Patron Membership (newsletter, *Edgewood Checklist of Plants*, greeting cards, video, and 16x20 photo-poster)
- I am enclosing a gift of _____.
- Please send _____ copies of the 28-minute video *Saving Edgewood Park* at \$15 each.
- Please send _____ copies of the *Edgewood Checklist of Plants* at \$3 each.

I would like to participate in the following:

- Docent program
- Trail patrol
- Publications
- Weed management
- School outreach
- Habitat restoration



UPCOMING EVENTS

o *Saturday October 6th*, **ADOPT-A-HIGHWAY CLEANUP DAY**. Meet at the Park & Ride at 8:30 a.m. Call Ken Seydel for more information or to arrange for safety training.

o *Sunday, October 21st*, **GENERAL MEETING AND MEMBERS APPRECIATION BBQ**. Join the celebration of this year's accomplishments and elect next year's Board of Directors. All members are welcome and encouraged to bring prospective Friends to the Day Camp from 2 to 5 p.m.

o *October*, **DOCENT TRAINING BEGINS**. Contact Dianne Hunt.

FRIENDS OF EDGEWOOD RECEIVE AWARD

Keep California Beautiful, an affiliate of the national Keep America Beautiful program, together with the California Department of Conservation, has recognized the Friends of Edgewood "for your commitment to protecting the beauty of the State of California through your leadership, dedication and service in the sixth annual *April is Keep California Beautiful Month, 2001 and the Great American Cleanup.*"

The certificate is signed by Sharon Davis, Honorary Chairperson, and Barry Edwards, President of KCB.

Ken Seydel received the award on behalf of the Friends of Edgewood Adopt-A-Highway freeway warriors. `

The Edgewood Explorer is published four times yearly by the Friends of Edgewood Natural Preserve, a nonprofit organization dedicated to preserving Edgewood for the human, plant, and animal generations to come. The newsletter is produced by Kathy and Bill Korbholz with assistance from Laverne Rabinowitz and contributions from many Friends. For more information about the Friends of Edgewood, visit our web site at www.friendsofedgeswood.org, mail us at PO Box 3422, Redwood City, CA 94064-3422, call or fax toll-free at (866) GO-EDGEWOOD, or email info@friendsofedgeswood.org.

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**~ Save the Date ~
October 21, 2 to 5 p.m.
General Meeting and
Members Appreciation
BBQ**