FRIENDS OF EDGEWOOD NATURAL PRESERVE

Edgewood Explorer

March 2007 Volume 14 Number 1

DOCENT WALKS START MARCH 10

By Kate Finnigan

As your new Docent Coordinator, I would first like to thank Carolyn Strange for the great job she has done in the past three years, and for helping me learn the ropes this year. I'm excited about the prospects of another wildflower season, and this year will be extra special because of the return of the Bay checkerspot butterfly (see adjacent article).

Docent walks begin this year on Saturday, March 10 and run every weekend through Sunday, June 10.

Because of its popularity in the last two years, the Clarkia trailhead on Cañada Rd will serve as the starting point for six *additional* walks this year. Those walks will occur on Saturdays in April and May. The Clarkia offers an opportunity to see more of the serpentine chaparral, and visitors can reach the grasslands a little more easily than from the Day Camp. (Recall that we stopped using the I-280 Edgewood Road entrance near the Park & Ride lot after the 2003 season at the request of the Parks Department.)

The enclosed flyer is also available on the Friends website at www.friendsofedgewood.org. We encourage you to download the PDF and distribute it to your friends and colleagues. You'll also find our trail map there.

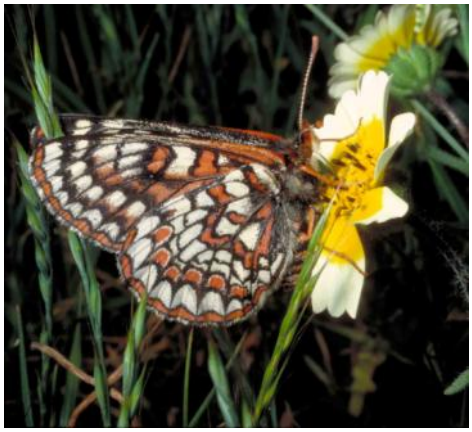
As in the past, we are happy to offer special wildflower tours to groups of 10 or more. To make arrangements, please contact me at docent-coordinator@friendsofedgewood.org or call the toll-free line at 1-866-GO-EDGEWOOD (1-866-463-3439).

See you at the Preserve! ❀

RARE BUTTERFLY RETURNING TO EDGEWOOD

By Carolyn Strange

Edgewood County Park and Natural Preserve is renowned for its spring wildflower displays, but this year's buzz will be about what's fluttering above the flowers, and munching below. Edgewood's famous butterfly is coming home.



Neither big nor showy, the orange, black and white Bay checkerspot butterfly (*Euphydryas editha bayensis*) ranks among the most studied insects in science. Edgewood owes its status as a preserve to this butterfly, which federal officials listed as threatened with extinction in 1987. But legal protection didn't stop an insidious chain of events that ultimately wiped it out at Edgewood, its last stand in San Mateo County. It was gone by 2003. The butterfly holds on at Coyote Ridge in Santa Clara County.

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INSIDE THE EXPLORER

(RETURNING BUTTERFLY, Continued from page 1)
Backed by government agencies and advocacy groups, ecologist Stuart B. Weiss, Ph.D. sought to not only to understand the Edgewood extinction, but to also reverse it. "It's time for a win on the endangered species front," Weiss says.

But first he had to solve a mystery. Weiss found nonnative Italian ryegrass *(Lolium multiflorum*) taking over, crowding out native plants, including critical caterpillar food, California plantain (*Plantago erecta*). But soils derived from nutrient-poor serpentine rock (California's State Rock) usually thwart nonnative plants, providing havens for natives. That's why Edgewood dazzles with native wildflower carpets. What had changed?

Ryegrass encroached because soil chemistry shifted. Weiss has shown that vehicle emissions from nearby Highway 280 deposit nitrogen, essentially fertilizing the soil, and tipping the plant community balance. Weiss dubbed this disastrous freeway effect "drive-by extinction."

Fortunately, well timed mowing effectively tips the balance back in favor of native plants. Now, nearly 15 acres host a homecoming. This winter Weiss has been transferring caterpillars from Coyote Ridge. By April, checkerspot butterflies will take wing again at Edgewood. Friends of Edgewood docents will share this exciting and hopeful story as part of weekend wildflower walks. Visit www.friendsofedgewood.org for details. ❁

RANGER RICARDO TREJO RETIRES

After 31 years with the San Mateo County Parks Department, Ricardo Trejo celebrated his retirement on February 21, 2007. Ricardo was Edgewood's first ranger, and after working at the County's firing range at Coyote Point, returned to Edgewood in June 1998. He has been instrumental in supporting a wide range of volunteer programs at Edgewood, especially habitat restoration. A more in-depth article will appear in a future *Explorer*. ❁

Ricardo (4th from left) celebrates retirement with Friends Bill Korbholz, Ken Himes, Paul Heiple, John Allen, and Kathy Korbholz (l. to r.)

TREASURER'S REPORT 2006

By Yvette Pirie

For the calendar year 2006 the Friends of Edgewood had income primarily from membership dues, donations, gifts, and grants from REI and the Parks Foundation.

The greatest portion of expenses was allocated to the Butterfly Restoration Program (funded by the REI grant), the schools outreach and docent programs, and the newsletter.

Thanks to the generosity of our friends and donors, our treasury is positioned to continue support for these ongoing programs, as well as providing funding for additional habitat restoration and the future Interpretive Center.

For more information, please feel free to contact me any time. ❁

NORTHERN HARRIER

By Lee Franks

The Northern Harrier (aka marsh hawk) is a slender, white-rumped, medium-sized, and low flying raptor with an owl-like face. It can best be identified by its flight behavior, tracing wavy lines over grasslands and marshes, often retracing its path several times in the quest for prey. It employs slow, lazy wing beats which coincide with its undulating, erratic flight pattern as this raptor skims the tall grassy meadows on the west side of the Park with its belly. Unlike other raptors, which can find their prey only visually, the Northern Harrier stays close enough to the ground to listen for birds (nesting or fledgling song birds), voles, and mice. When stirrings catch its eyes or ears, it abandons its lazy ways to strike at prey with astonishing energy.

Male Northern Harrier © Bob Steele

Harriers are year-round residents throughout California, but they appear to be more abundant during fall and winter months around here because the residents are joined by individuals from the northern-most areas of their range (Alaska and Canada) who migrate as far south as Central and South America. It is likely that the one or two that we see hunting in the Park during the winter months are migrants that choose to stop over on their journey south, or stay in the Park just for the winter.

Appearance

There is a big difference in appearance between the male and the female. Adult females are about 50% heavier and 12% larger than adult males. The female is brown above, whitish below, with heavy brown streaking on the breast and flanks, and lighter streaking and spotting on the belly. The facial feathers are brown, but strongly outlined with white cheek feathers. The male is gray above and mostly white below, with bold black wing tips. Their tail is darkish gray above and whitish below. Males lack the distinctive facial feathers of the female.

Both sexes have a white rump patch, owlish face, and eye color that changes from brown to yellow as they age over a three year period. The evolutionary significance of this eye color change is unclear, but some feel that it may serve to help determine the maturity of potential mates.

Female Northern Harrier © Garth McElroy

Behavior

Harriers forage over open habitats. The frequency of use of certain habitats appears to be related to a combination of prey biomass and vegetative cover. Areas of short vegetation are under-used, whereas idle and abandoned fields with vegetative cover are used frequently. Males seem to prefer more open habitats than females. This difference is no doubt related to 1) use of different prey species (males take more birds), 2) the smaller home range of females relative to those of males, which results in female preference for habitats surrounding nest sites, and 3) female exclusions of males from preferred hunting habitats during winter months. Females

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ARTHROPODS OF EDGEWOOD

By Paul Heiple

The first Arthropods that exited the ocean came on to land along with the first plants. They were not insects, but members of the Chelicerata subphylum that includes arachnids. These are all the creepy crawlers such as scorpions, spiders, and ticks. Perhaps it is their very ancient origin that turns us off to them, but they are very important and common arthropods, many of which are found in Edgewood.

The Chelicerates

The features that set the Chelicerates apart from all the other Arthropods is the lack of antennae in all stages of their lives. Their bodies are divided into two sections, one the head and thorax combined (the prosoma) and the other an abdomen (the opisthosoma).

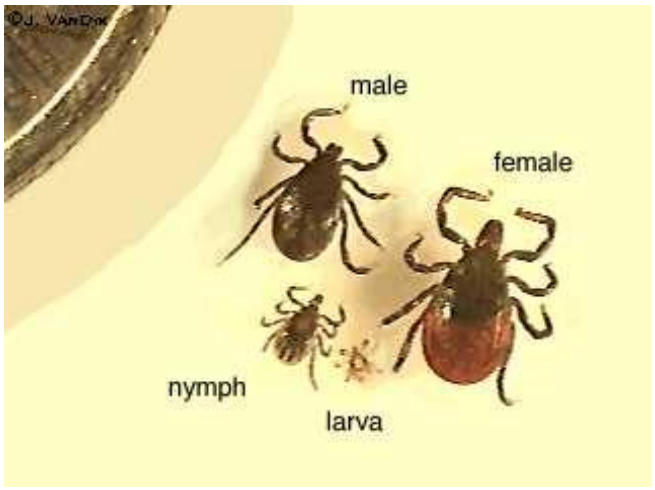
The first pair of appendages, the chelicerae, are modified into feeding structures and the second pair are the pedipalps, which perform vastly different functions in the different orders. The remaining four pairs of appendages are considered legs but are also modified in some orders to perform sensory functions. The abdomen also had four pairs of appendages but these were modified to gills in the earliest forms and are now internal and used in respiration.

The Arachnida class of Chelicerates

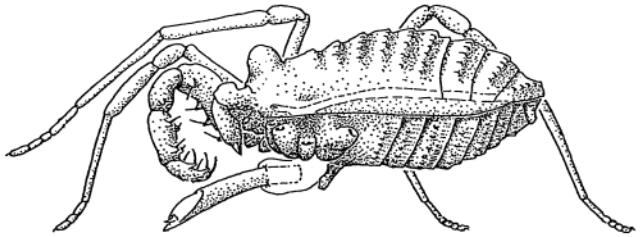
The largest class of Chelicerates is the Arachnida. This class is the only class in the subphylum found on land and therefore in Edgewood. The most familiar of the Arachnida are the order Araneae, the spiders. This is not the largest order in the class in terms of species numbers; it is the second largest after the Acarina, the mites. But many of the species are large and conspicuous animals, unlike the mites which can often be very small to microscopic.

In the spiders, the chelicerae consist of a fang and a basal segment with a grave into which the fang can fold for storage. The pedipalp of the female is leg-like and is used to taste food. The male spider's pedipalp is modified and used in mating. This makes the sex of spiders easy to determine; the pedipalps of males have a bulbous end segment. The production of silk is the other feature that seems to set spiders apart from the other orders, but this feature is not unique to the spiders, it is just taken to such a great extent because of the size of the silk structures and the wide range of uses the spider have for silk. The silk is produced from structures at the posterior end of the spider called the spinnerets.

The only member of order Acarina you are likely to notice without effort is the ticks. Ticks are the largest mites. They are entirely parasitic and therefore not typical of all mites. Features they exhibit are chelicerae modified for puncturing skin and hooks for anchoring the animal in the skin while they feed. The chelicerae are obscured when the animal is not feeding by the leg-like pedipalps. By far, most mites in Edgewood are found in the leaf litter or as small parasites on animals and plants. We are unaware of their presence yet they are important parts of the ecosystem.



Deer ticks next to a dime



Harvestman (*Microcina* sp.)

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(ARTHROPODS, Continued from page 4)

A third order of arachnids that I have observed in Edgewood is the Opiliones or harvestmen, also known as daddy longlegs. This is a small order compared with the two previous orders with less than a tenth the number of species worldwide.

Many people think they are spiders but they have some major differences. The chelicerae are small and lack fangs; these animals do not have venom. The pedipalps are similar to those of spiders. The second pair of legs are often elongated and serve the function of antennae. The body is not divided into two parts and segmentation of the body is always visible. They also produce no silk.

Besides Araneae, Acarina, and Opiliones, three other orders are very likely to be in Edgewood, but I have yet to find them. They are the Scorpiones, the Pseudoscorpiones and the Solifugae. Scorpions have been collected from

Scorpion (left) and pseudoscorpion

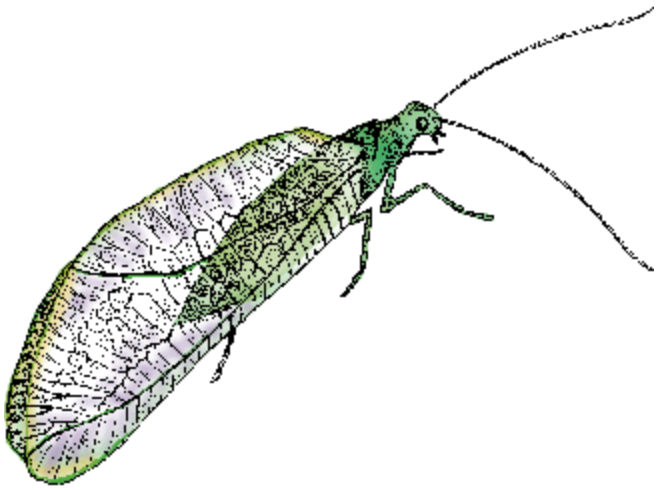
Edgewood; they are familiar to us from the form of the pedipalps which are modified into pincers. The tail is actually the last seven segments of the abdomen ending in a stinging barb. Pseudoscopions are small and lack the tail.

Solifugae are known as sun spiders. The have huge chelicerae, often larger than the head of the animal. The pedipalps are long and leg like, giving the animal a ten-legged look. They have an adhesive organ at the ends used to capture and hold prey. The first pair of legs is reduced and used as tactile organs. The animal then uses six legs for locomotion like insects. It would be nice to have sharp-eyed docents look for these animals and report them in the next few years.

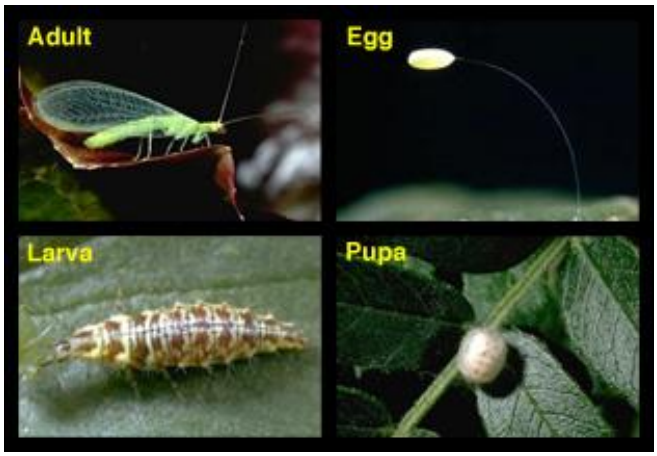
Sun spider

Lacewings

In the park now, look for the lacewings. Members of the order Neuroptera of the class Insecta (not arachnids), these insects are about two centimeters long, the body thin and either



green or brown with finely veined large transparent wings held-tent like over the body. The head is large with large eyes which are golden or copper in color and bearing long antennae. The green lacewings tend to inhabit



the open areas and the brown lacewings in the wooded areas. Both the adults and larvae feed on small soft-bodied insects such as aphids. The larvae have the look of small alligators with large tong-like jaws. The eggs are held up from the stems and leaves they are attached to by long stalks. These insects are not only beautiful, they are important controls on aphids. ❁

(NORTHERN HARRIER, Continued from page 3)
hunt in taller and denser vegetation than do males. When we see this raptor during our monthly surveys in the Preserve, it is either male or female, flying or perched, solo. Seldom, if ever, do we see the two sexes together.

Most prey pursuits are short temporally and spatially, and close to the ground. They sometimes use the cover of vegetation and terrain to surprise prey. Prey-capture success is highly variable (5-35% of pounces are successful), depending on habitat, prey type, and age or sex of the individual harrier. When captured, large prey items, especially birds, are plucked and eaten, usually on the ground, but sometimes on elevated perches. Smaller items are swallowed whole.

In general, males fly faster than females or juveniles, regardless of the type of flight. Males have shorter wings and lower wing-loading than females do, and appear more agile in flight. In the fledgling stage, juveniles chase and supplant one another, and occasionally pounce and play with inanimate objects.

Male Northern Harrier © Bob Steele

Breeding

Pair formation occurs on their breeding grounds. Adult males generally arrive 5-10 days before females. Aerial courtship and territorial displays coincide with the arrival of the adult female. Male or female may select the nest site. Often the male will initiate nest building by creating platforms in the presence of the female,

(Continued on page 7)

ADOPT-A-HIGHWAY UPDATE

By Ken Seydel and Bill Korbholz

Our dedicated freeway warriors came through again this quarter to keep our stretch of I-280 along Edgewood free of litter.

For our January, February, and March outings, we had a total of 12 people: Brian Cole, Carolyn Dorsch*, Dave Hershey*, Kathy Korbholz*, Bill Korbholz*, Jane Kos*, Margaret Marshall*, Susan Russell*, Ken Seydel, Jan Smith*, Lisa Tough*, and Michael Yantos. (* means these truly dedicated folks came at least twice.)

During this 2-month period, we removed 26 bags of trash from the east side of I-280 north and south of the Edgewood Road offramp.

If you have an interest in joining our great group, contact Ken Seydel. We typically go out the first weekend of the month and spend about 2 ½ hours. We will see that you are safety trained and equipped with your very own Picker, hard hat, goggles, gloves, and bright orange vest. ❀

VOLUNTEER GRANT RECEIVED

The Friends of Edgewood has received a $1,000 grant to be used for transporting students from Title I schools to Edgewood this spring for educational walks led by our outreach docents.

We would like to thank the San Mateo County Parks and Recreation Foundation for providing the funding for this grant, and San Mateo County Department of Parks for approving our application. This grant comes from the $15,000 donation that is made yearly by the Parks Foundation to support volunteer programs in our county parks.

Title I schools are those with underperforming or disadvantaged students. We will select schools from the local vicinity to participate in this program.

We hope to rent 2 or more buses, each for a half day, to transport the students. ❀

(NORTHERN HARRIER, Continued from page 6)
stimulating her to complete the nest. Nests are built on the ground within patches of dense vegetation. Both sexes carry nest material to the nest site, although most platforms are added to and lined by the female. Males transfer material to the female by an aerial pass or on the ground at the nest site. Construction requires 7-14 days, using grasses, forbs, weeds, rushes, etc.

Eggs, which are spotless, smooth with little gloss, are laid at 2-3 day intervals. Clutch size is 5-6 eggs, and normally one clutch per season is laid. The female alone incubates the eggs. Eggs hatch in the sequence in which they were laid, on average at 2-day intervals. Young are covered with short, white down at hatching. Their eyes open within hours of hatching, and they are able to crawl to the edge of their nest to defecate, stretch, and receive food. The female only broods, beginning immediately after hatching. Diurnal brooding ends when the oldest nestling is about 12-14 days old, but the female will brood older young during rainy weather. Nocturnal brooding continues until 28-30 days, shortly before offspring begin flying.

Although the center of activity may move several hundred meters from the nest, fledglings spend most of the day waiting on elevated perches for their parents to return with food. Usually only about 20% of their day is spent flying. Most flights appear to be exercise flights in which the birds fly in wide circles before returning to their original perch sites. Once all siblings are capable of flight, virtually all food items are exchanged by an aerial pass, and prey usually are relinquished to the first fledgling that reaches the parent. Ability to secure food from parents is strongly influenced by the sequence in which siblings begin flying. Fledglings practice prey capture by pouncing on inanimate objects, but spend little time, if any, hunting, and rarely capture prey prior to independence.

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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 six-digit code to the right of their name on their mailing label. For example, if the code is 06/2006, membership runs through June 2006. Questions, call (866) GO-EDGEWOOD or contact membership-coordinator@friendsofedgewood.org.

Name

Address

City State Zip

Day Telephone Eve Telephone

Email

- ❑ **$10 Student/Retired** (includes quarterly newsletter)
- ❑ **$25 Friend** (newsletter)
- ❑ **$50 Advocate** (newsletter, set of 6 Edgewood photo greeting cards)
- ❑ **$75 Supporter** (newsletter plus choose one):
  - ❑ Set of 6 Edgewood photo greeting cards and 1-year subscription to BAY NATURE magazine
  - ❑ Toni Corelli's Flowering Plants of Edgewood
- ❑ **$100 Steward** or ❑ **$250 Guardian** (newsletter, set of 6 Edgewood photo greeting cards, plus choose one):
  - ❑ 1-year subscription to BAY NATURE magazine
  - ❑ Toni Corelli's Flowering Plants of Edgewood
- ❑ **Please do not send any premiums**.
- ❑ **I am enclosing a gift of** _____.

Please send ___ copies of *Common Native Wildflowers of Edgewood* ($2.50), ___ copies of the *Edgewood Vascular Plant List* ($3.00), ___ copies of the Apr-Jun 2004 BAY NATURE magazine ($6.00), ___ copies of Flowering Plants of Edgewood Natural Preserve ($25.00). Includes tax, S&H. All items subject to availability.

I would like to participate in the following:

- ❑ Docent program
- ❑ GIS/GPS mapping
- ❑ Newsletter/web
- ❑ Public relations
- ❑ Weed management
- ❑ Schools outreach
- ❑ Habitat restoration
- ❑ Adopt-A-Highway

UPCOMING EVENTS

❑ *Saturday, March 10,* **DOCENT WALKS BEGIN**. Walks this year run through June 10. They start from the Day Camp every Saturday and Sunday, and from the Clarkia trailhead every Saturday during April and May.

❑ *Monthly,* **BIRD WALKS**. Meet Audubon Society docent Lee Franks at 8 am at the Day Camp kiosk on 3/29, 4/25, and 5/22.

❑ *Monthly,* **ADOPT-A-HIGHWAY**. The next sessions are scheduled for 4/7, 5/6, and 6/2. Contact Ken Seydel to volunteer or for more information.

❑ *April,* **RETURN OF THE BUTTERFLIES!** ❀

(NORTHERN HARRIER, Continued from page 7)

Mortality rates are estimated at 59% in first year and 30% among adults. The longest lifespan reported is 16 years, 5months.

References

The Birds of North America, No 210, 1996; R. Bruce Macwhirter and Keith L. Bildstein. ❀

The Edgewood Explorer is published quarterly 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 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.friendsofedgewood.org, mail us at PO Box 3422, Redwood City, CA 94064-3422, call or fax toll-free at (866) GO-EDGEWOOD (866-463-3439), or email info@friendsofedgewood.org.

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