

Edgewood



Explorer

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EDGEWOOD CLOSURES UNDER CONSIDERATION

Cutbacks in the proposed County budget for 2004-2005 are threatening the closure of Edgewood Park and three other County parks on Tuesdays, Wednesdays, and Thursdays. The other parks are San Bruno Mountain, Junipero Serra, and San Pedro Valley.

The Board of Supervisors will conduct budget hearings at the end of June to hear public comments on the proposed budget. The issue of parks closures will come up as part of the Environmental Services Agency hearing scheduled for Wednesday, June 30 at 9 am in the Board's Chamber at the County Government Center in Redwood City.

If you have concerns about these closures, you are invited to express them at the hearings.

FREE BAY NATURE SUBSCRIPTION AVAILABLE WITH FRIENDS OF EDGEWOOD MEMBERSHIP

For a limited time, new or renewing members of Friends of Edgewood who choose the \$50 level or above will receive a *free* 1-year subscription to Bay Nature magazine. Members who already have a Bay Nature subscription will receive a 1-year extension.

The subscription, valued at \$19, is one of the premiums that come along with membership. At the \$50 level, members also can receive the *Edgewood Checklist of Plants* and a boxed set of Edgewood photo greeting cards.

Also, back issues of the Apr-Jun issue of Bay Nature are available for \$5. This is the issue that contains a feature article on Edgewood.

To take advantage of either of these offers, please use the membership form on page 7.

PLANTS THAT LIKE HOSTS

By Toni Corelli

Visitors and docents have often asked me about the parasitic relationships some vascular plants have, especially when I talk about it in reference to the Indian warrior. In researching this relationship I found that many other plants at Edgewood also have plant/host relationships. These plants are within four families and seven genera at Edgewood (see the table on page 5).

Parasitism for vascular plants is a relationship in which one organism uses the nutrients and water and sometimes photosynthates (carbohydrates) of another plant, the **host plant**. Nutrients and water are transported by thread-like **haustoria** produced by the root system of the parasitic plant that permeate and become embedded in the host tissue. To be a true vascular plant parasite the plant must produce haustoria. The vascular plants that produce haustoria are in two groups.

Holoparasite / Obligate Group – these are nonphotosynthetic so are obligated to and must have a host to survive. They obtain water and nutrients from the host xylem and photosynthates from the host phloem. Within this group are the fleshy-stemmed holoparasites (holo = complete) in the Orobanchaceae family and the nonphotosynthetic annual vines in the

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SPRING 2004 SCHOOL FIELD TRIPS

By Carol Hankermeyer



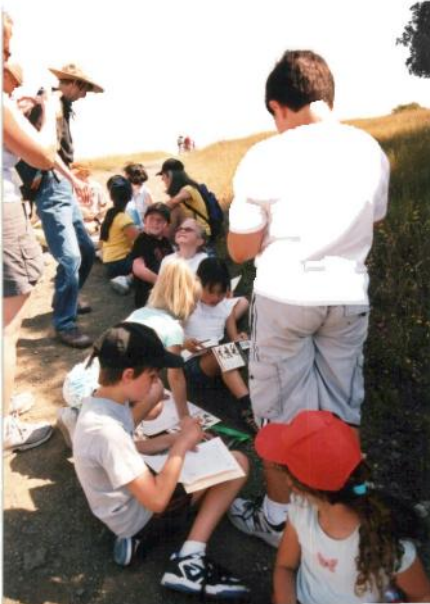
An unusually high percentage of homeschoolers participated in the Schools Outreach program this season. In fact, nearly half of the requests for hikes came from that education sector. I speculate that flexibility with scheduling and with meeting the state standards of education is the reason they are able to arrange field trips much more easily than public schools.

The interesting challenge of leading homeschool groups is adapting the material and field trip format to accommodate a wide age range, from kindergarten to high school in some cases, with a few preschoolers tagging along with parents. Instead of the homogeneous classroom unit, docents must teach to family units, who prefer not to be separated by age. The docents' ability to adapt to this teaching situation was

remarkable.

Outreach hosted 3 homeschool groups with a total of 75 students.

One public school we served this spring was Highlands Elementary from San Mateo. Four second grade



DOCENT POST-SEASON PARTY PLANNED

By Carolyn Strange

To celebrate the conclusion of another successful wildflower walks season, all active (and temporarily inactive) docents and docent "alums" are invited to a post-season party on Saturday, June 26, 10am - 1pm, at Edgewood's picnic area. The gathering will be both fun and functional, social as well as strategic. Of course it's an opportunity for docents to meet, share stories, and learn from each other. This year especially, because the walks program experimented with new hikes and trailheads, docents need to gather and share experiences, perspectives and feedback that will be critical in planning next year's walks.

Our docents, who provide a major interface with the public, are seen as experts on the Preserve. And rightly so. This gathering also offers a good opportunity for docents to learn about one of the next big milestones in Edgewood's history—the planned interpretive center. We'll tour the site, brainstorm uses for the new Center, and discuss how to increase public awareness and support, not just for the Center, but ultimately for Edgewood.

Lunch and refreshments will be provided, thanks to a San Mateo County Parks and Recreation Foundation grant.

classes, a total of 84 students, were required to complete a unit on learning plant structure and local wildflowers. For their field trip, all classes chose to visit the Edgewood serpentine grassland in April to identify and draw flowers. We were impressed with their enthusiasm and their ability to recognize the plants by name.

The teachers and parents of all visiting schools were extremely appreciative of the docents and inspired by the uniqueness and beauty of Edgewood. And I can't say enough in gratitude and praise of those dedicated and talented docents who helped me lead these field trips:

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(PLANTS THAT LIKE HOSTS, Continued from page 1)

Cuscutaceae family. The Orobanches are root parasites, and they have their parasitic connection with the roots of the host plant. The Cuscutas are stem parasites, and they have their parasitic connection with the stems of the host plant.

Hemiparasite / Facultative Group – these are partial (hemi = half) parasites capable of both photosynthesis and parasitism and do not require a host (facultative = optional). However, in nature, when without a host they are usually smaller and not as vigorous. They obtain most of their water and nutrients from the host xylem. Our members of hemiparasites are in the Scrophulariaceae family. When the new edition of *The Jepson Manual* comes out in 2008, the genera listed in the table within the Scrophulariaceae family will be included in the Orobanchaceae family, based on molecular studies and their parasitic relationships. These members of the Scrophulariaceae are root parasites.

Nonphotosynthetic Mycotrophic Group

The coralroot orchids are not considered “true” vascular plant parasites because they do not have haustoria. They are called a nonphotosynthetic mycotrophic (myco = fungus, trophic = turning) plant. They have a symbiotic relationship with the mycorrhiza of living soil fungi and absorb carbohydrates and minerals from this fungal partner, which in turn absorbs these nutrients from the roots of nearby plants.

There are various reasons why plants from several different evolutionary lines have evolved these relationships with host plants. Research has shown that parasitism in the group of holo- and hemiparasites evolved only once, but the loss of chlorophyll has occurred multiple times within the descendants of that first parasitic species. Some of the advantages of the parasitic relationship are a steady supply of water and nutrients for seed production. Although this may be a drain on the host, in most cases it does not lead to the death of the host.

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RED-SHOULDERED HAWK

By Lee R. Franks

Birds and people are “sight animals.” For both, the eyes are the dominant sense organs, vastly more important than their inferior sense of smell. The reasons for our sensory similarity to birds can be found in human evolutionary history. At one point the ancestors of *Homo sapiens* were small, tree-dwelling primates. When leaping from limb to limb and snatching insect prey with the hands, sharp, binocular vision was very handy; those of our forebears that tried to smell the location of a branch on which to land were unlikely to survive to reproduce. And since in the breezy treetops odors quickly dissipate, they do not provide good clues for detecting food, enemies, or mates. Birds, flying higher and faster than primates leap, naturally also evolved sight as their major device for orienting to the world.

The term “hawk-eyed” accurately describes raptors like the Red-shouldered Hawk, *Buteo lineatus*. They have eyes designed for high “visual acuity.” There is, in fact, evidence that hawks can distinguish their prey at something



like two or three times the distance that a human being can detect the same creature. One way they have attained such a high degree of acuity is by having relatively large eyes. But more than size alone appears to account for the astonishing performance of the eyes of hawks. Evolution has arranged the structure of their eyes so that each eye functions very much like a telescope. The eye has a somewhat flattened lens placed rather

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HABITAT RESTORATION

By Ken Himes

We're making good progress this year in our continuing battle against invasive species at Edgewood. Visitors can notice a marked reduction in the amount of yellow star-thistle present.

To keep the momentum going, we are planning a special weeding day on Saturday July 17 from 9 am to 12 noon. All are welcome to join us in this rewarding activity. Meet at the Edgewood Trailhead at the intersection of Cañada Rd. and Edgewood Rd., or go directly to the West Kiosk and look for the map.

In addition to this special weeding day, we continue to conduct our regular weeding sessions on Friday mornings year-round and on Wednesday evenings through October 27. For details, call me or consult <http://edgewood.thinkersrus.net/>.

(RED-SHOULDERED HAWK, Continued from page 3)

far from the retina, giving it a long focal length, which produces a large image. A large pupil and a highly curved cornea admit plenty of light to keep the image on the retina bright.

The Red-shouldered, a mid-sized hawk (19 in.) does most of its hunting from a perch. Sitting atop a fencepost, utility pole or tree, it waits patiently to detect snakes, mice, and frogs. They prefer riparian and oak woodlands, but also occupy eucalyptus groves and residential areas. The pair that breeds at Edgewood nest in a large eucalyptus tree near the parking lot. The breeding season is about 150 days, beginning in February. They usually lay 3 eggs.

Appearance

Distinguished by its "red" shoulder patches, black and white checkered flight feathers, heavily banded tail, and dark rufous chest with white, horizontal streaks. The sexes look alike, but the female is larger in size. Their tails, which are relatively long for a mid-sized hawk, are marked by several wide dark bars with

intervening narrow white bars and a white tip. Wings appear 2-toned when viewed from below, with rufous inner feathers contrasting with black and white wing linings.

Behavior

Flies with wings and tail outspread when circling above territory. When hunting in open, flies low and directly toward prey. Flies 6-15 meters high through trees below the canopy, often gliding or swooping up to nests. Leaves nest by dropping off to pick up speed and clear branches before flapping. The female roosts on nest until young are 3-4 weeks old. The male generally roosts several hundred meters away from nest. These birds are solitary or in pairs year-round. They are rarely found in flocks, even during migration.

Sounds

The Red-shouldered Hawk is the most vocal raptor in our area. Adults and juveniles call at any time of year, but calling becomes more regular and frequent between November and May, peaking in the January to April period. Female vocalizations are noticeably lower-pitched than those of the male. While their vocal array consists of seven calls, the most common is the **kee-aah**, which has accent on the first syllable and a drawn-out second syllable with a downward inflection. This call is usually performed 5-10 times, followed by a 10-20 minute interval of silence. The call is used when announcing territory in early spring, up to start of incubation, after which adults become much more quiet. The call is also used as an alarm.

Breeding

Red-shouldered Hawks maintain their territories and home ranges throughout the year and begin to pair in February. Courtship lasts about 3 weeks, with nest building/refurbishing starting before courtship ends. Egg laying takes place in March, with hatching occurring about 5 weeks later. The nesting period averages about 6-7 weeks with nest departure generally taking place in June. Their nests are composed mostly of live or dead sticks, dried leaves, strips of bark and lichens. The inner cavity is lined with finer

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(PLANTS THAT LIKE HOSTS, Continued from page 3)

References

Coffey, G. (2004). Indian Paintbrush: The Sunset Shades of Castilleja. Bay Nature, April-June 2004.

Marvier, M.A. (1998). Parasite Impacts on Host Communities: Plant Parasitism in a California Coastal Prairie. Ecology: Vol. 79, No. 8.

Mills, J.N. and Kummerow, J. (1988). Root Parasitism in Indian Paintbrush. Fremontia, Vol. 16 No. 3, October 1988.

Olmstead, R.G. (2002). Whatever Happened to the Scrophulariaceae? Fremontia, Vol. 30 No. 2, April 2002.

Purcell, J. (1974). Influences of Host and Environment on the Distribution and Reproductive Success of *Pedicularis densiflora*. Research Paper for Bio. 178 taught by Dr. Harold Mooney.

Taylor, D.L. and Bruns, T.D. (1999). Population, habitat and genetic correlates of mycorrhizal specialization in the 'cheating' orchids *Corallorhiza maculata* and *C. mertensiana*. Molecular Ecology (1999) 8, 1719-1732 © 1999 Blackwell Science Ltd

Web Pages

<http://www.botgard.ucla.edu/html/botanytextbooks/lifeforms/parasiticplants/>

[http://www.science.siu.edu/parasitic-plants/`](http://www.science.siu.edu/parasitic-plants/)

| Family | Plant Name | Type of Parasite | Host Plant(s) | Habitat; Flowering Time |
|------------------------------------|--|----------------------------------|--|--|
| CUSCUTACEAE dodder family | <i>Cuscuta californica</i> California dodder | holoparasite/ obligate | members of Asteraceae (mostly annuals) | grassland; May-August |
| OROBANCHACEAE broom-rape family | <i>Orobanche californica</i> ssp. <i>Jepsonii</i> Jepson's broom-rape | holoparasite/ obligate | goldenaster | chaparral, woodland; July-September |
| | <i>Orobanche fasciculata</i> clustered broom- rape | holoparasite / obligate | buckwheat | grassland; April-August |
| SCROPHULARIACEAE figwort family | <i>Castilleja affinis</i> Indian paintbrush | hemiparasite / facultative | bunch grasses, chamise, sagebrush, buckwheat ¹ | chaparral, woodland; March-August |
| | <i>Castilleja foliolosa</i> woolly Indian paint brush | hemiparasite / facultative | sagebrush | chaparral; March-August |
| | <i>Castilleja</i> spp. ³ cream sacs, owl's clover, valley tassels | hemiparasite / facultative | members of Poaceae ^{1, 2} | grassland; March-May |
| | <i>Cordylanthus</i> spp. ³ bird's-beak | hemiparasite / facultative | oaks ^{1, 2} | chaparral, grassland; July-October |
| | <i>Pedicularis densiflora</i> Indian warrior | hemiparasite / facultative | oaks, chamise | chaparral, woodland; January-July |
| | <i>Triphysaria</i> spp. ³ butter-and-eggs, dwarf orthocarpus | hemiparasite / facultative | members of Poaceae ^{1, 2} | grassland; March-May |
| ORCHIDACEAE orchid family | <i>Corallorhiza</i> spp. ³ coralroot | nonphotosynthetic mycotrophic | soil fungus | woodland; April-July |

¹ Need more information what host plants are at Edgewood; information is from the literature.

² These species are generalists and their host plants can be from other families as well.

³ Includes all species at Edgewood.

(RED-SHOULDERED HAWK, Continued from page 4)



shreds of inner bark, mosses and lichens. Pairs, not necessarily the same birds, may reuse the same nest for many years. The nest in the Park has been used for the past 4 years.

References

The Birds of North America, No 107, 1994;
Scott T. Crocoll

The Birder's Handbook; Paul R. Ehrlich, David S. Dobkin, and Darryl Wheye

Picture Credits

The pictures for this article depict the actual Red-shouldered Hawks that live at Edgewood. They were photographed by George Raiche and appear on his website, www.digibird.com. There you will find a fascinating photo-history of their nesting activities for the past four years. `

(FIELD TRIPS, Continued from page 2)

John Allen, Toni Corelli, Barbara Erny, Herb Fischgrund, Paul Heiple, Pat Lisin, Pat Oren, and Jan Simpson. If we only had more of you, we could expand the program and invite more schools to participate.

It is crucial for children to experience and value such natural treasures as Edgewood offers to ensure such places will be preserved and protected in perpetuity. If the spirit moves you to use your talents in leading children's field trips, there is a great need for you. Please contact me through Schools Outreach on the Edgewood website, www.friendsofthewood.org. `

ADOPT-A-HIGHWAY UPDATE

By Ken Seydel and Bill Korbholz

Our road warriors now clean the eastern side of I-280 alongside Edgewood on the first Saturday or Sunday of every month.

Two new treasure hunters were added to our list in April. We welcome Lucy Krensky and Mignon Belongie! It's a good thing that we have some new people – most of our regulars had other commitments on this beautiful spring day. Our regulars in attendance were Alan Hackabay, Billy James, and Ken Seydel.

Cleaning monthly makes the job much easier, and keeps the area next to our preserve much more presentable. This time we collected only 9 bags. Of course we had the usual money – but only 25 cents! Billy found a very nice snake skin (empty), and Ken found a 4 ½ foot gopher snake skin (full).

The spring flowers were just beginning to show, and it was a very nice outing.

The May pickup turned out to be a somewhat unwieldy experience. It took place in 3 shifts. Kathy and Bill Korbholz had a conflict with Sunday May 2, so they went on May 1 and filled 7 bags.

Then Katherine Greene and Carolyn Dorsch came on the regularly-scheduled Sunday and got another 5 bags, but Carolyn's trash picker broke and they weren't able to finish. So Katherine and Bill went back the following Thursday evening and filled 2 more bags, for a total of 14.

All told, the May pickup required about 20 hours, including travel time. We were rewarded with 35 cents, a broken man's watch, and a pleasant time in the spring sun.

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. `

CARLMONT KIDS COME THROUGH

By Nick Ramirez and Ken Himes



Nick lays out the plan to Carlmont students

This year was our most successful year yet with the Carlmont High School weeding program. We had over 270 students join us on 4 consecutive weekends (both Saturday and Sunday) plus

occasional Wednesday evenings. Nick supervised all weekend dates, with Ken's help in scouting potential sites, and then flagging and mapping them.

Two science teachers from Carlmont accompanied the students on the weekends, as did park aide assistant Angie Anderson, whose position was funded by the Parks Foundation.

Italian thistle was the sole weed targeted by this program, and really significant progress was achieved. Because of the flexibility in getting the students to remote sites easily, isolated colonies of Italian thistle that had previously not been treated were reached and eliminated. Moreover, it was possible to time activities to address the most urgent needs of specific sites.

Because of this "strike force" approach, many colonies of Italian thistle in the area around the Franciscan and Serpentine Trails have been reduced to negligible numbers.

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 06/2001, membership runs through June 2001. Questions, contact Carolyn Dorsch at membership-coordinator@friendsofedgeswood.org.

- \$15 Basic Membership (includes newsletter)
- \$25 Family Membership (newsletter)
- \$7 Student/Retired Membership (newsletter)
- \$50 Supporting Membership (newsletter, *Edgewood Checklist of Plants*, boxed set of Edgewood photo greeting cards, and 1-year subscription to BAY NATURE magazine)
- \$100 Benefactor Membership (above premiums plus Toni Corelli's Flowering Plants of Edgewood Natural Preserve)
- \$250 Patron Membership (above premiums plus 16x20 photo-poster)
- I am enclosing a gift of _____.
- Please send ___ copies of the *Edgewood Checklist of Plants* (\$2), ___ copies of *Common Native Wildflowers of Edgewood* (\$2), ___ copies of the Apr-Jun 2004 BAY NATURE magazine (\$5), ___ copies of Flowering Plants of Edgewood Natural Preserve (\$25). Includes tax, S&H. All items subject to availability.
- Please do not send any premiums.

Name

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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

q Saturdays and Sundays through June 13, **WILDFLOWER WALKS**. Day Camp, 10 am.

q Sat. June 26, **DOCENT POST-SEASON PARTY**. See article on page 2.

q Sun., June 27, **SUNDAY BIRD WALK**. Meet Lee Franks at the Day Camp kiosk at 8:00 am. Note: this is the last bird walk until October.

q Sun. July 11, Sat. August 7, Sun. September 5, **ADOPT-A-HIGHWAY**. Contact Ken Seydel for information.

q Sun. August 1, **TOUR DE PENINSULA**, a 33-mile bike ride, with shortcuts! Proceeds benefit the San Mateo County Parks Foundation. See <http://www.rhodyco.com/toureddep.htm>.

FRIENDS RECEIVE GRANT TO CONTINUE EGIS PROJECT

By Bill Korbholz

Last March the Friends of Edgewood received a grant from the ESRI Conservation Program of \$4,000 to update and maintain the GIS software used for the EGIS (Edgewood Geographic Information System) project.

This grant complements the original grant received in April, 2003 valued at \$14,000 that provided the initial software, books, and training to enable the project to become a reality.

The Friends of Edgewood are very grateful for the generosity of the ESRI Conservation Program in supporting this mapping project.

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.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 for the next
Friends of Edgewood
General Membership
Meeting:
Sun. Oct. 17!**