



THE EARTH DISCOVERY INSTITUTE
AT THE CRESTRIDGE COMPLEX



EDI'S MISSION

...to conduct innovative, effective education and outreach programs that are integrated with environmental conservation

EDI'S HISTORY

...began as a program of EHL in 2001, conducting conservation education and outreach

...became a freestanding non-profit organization in 2008



EDI AND THE CRESTRIDGE COMPLEX

PUBLIC USE

and the EHC – CBI - EDI Connection

- EDI serves as the public interface to recreational users and neighbors of EHC-owned and managed lands.
- EDI works with EHC and CBI to assure that education and outreach efforts are biologically sound and management plan-driven.



EDI AND THE CRESTRIDGE COMPLEX

IN THE REALM OF PUBLIC USE

Enforcement

Environmental Education

Community Outreach

Volunteers

Partnerships



ENFORCEMENT

EDI supports EHC relationships with law enforcement and fire agencies by facilitating communication with appropriate agency.

- CDFG Wardens
- SD County Sheriff
- Cal Fire
- San Miguel and Lakeside Fire Departments
- SD County Animal Control



ENFORCEMENT

Wildland Management

Key enforcement issues in the complex include...

- Illegal use of motor vehicles
- Vandalism of signs related to
- Creation of unauthorized trails
- Campfires/homeless encampment
- Dogs off leash



ENVIRONMENTAL EDUCATION



For EDI, environmental 'service-learning' better describes our educational philosophy and approach. Integrates...

- **state science curriculum standards by grade level** which makes participation valuable to teachers



ENVIRONMENTAL SERVICE-LEARNING



Integrates...

- **ecologically valuable (i.e. driven by management plan objectives) habitat restoration activities** which makes participation valuable for land managers





Since the Cedar Fire in 2003, students have planted almost all the plants (15,000+) introduced to restore 10 acres of CSS habitat and 4 acres of grasslands habitat in an area of the reserve badly degraded by past livestock grazing.



ENVIRONMENTAL SERVICE-LEARNING



Integrates...

- **support of students to conduct follow-up that manifests their science learning in service projects in their schools, homes and neighborhoods** which makes participation valuable for the community.





COMMUNITY OUTREACH

Why?

- **build public understanding of the value of (and ultimately, support for) habitat conservation**

How?

- **events**
- **Information/communication**



COMMUNITY OUTREACH

Events

- **Interpretive**
- **Volunteer habitat stewardship**
- **note... useful to view all events and even informal contacts with the public as interpretive**




COMMUNITY OUTREACH




Communications

- **Kiosks, signs**
- **Brochures, fliers**
- **Electronic messages, newsletters**

Brochures

DOGS ON LEASH AT CRESTRIDGE ECOLOGICAL RESERVE



Newsletters



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Saving the Planet, One Student, One Steward at a Time

Death of Crestridge Bobcat Illustrates Possibility of Widespread Wildlife Poisoning

Bobcat Basics

Seeing a bobcat while hiking or riding in the wild or seeing one moving through our backyards is a wonder that those lucky enough witness it will not soon forget. The bobcat (*Lynx rufus*) is one of the larger of the predator species that inhabit San Diego County's wildlands. Bobcats are carnivores, relying on rats, mice, voles, gophers, squirrels, and rabbits for most of their diet. Bobcats are bigger than domestic cats but smaller than most full grown coyotes, weighing in as adults at

2000. Some fortunate biologists, land managers, and recreational users have been privileged to see these mostly nocturnal animals from time to time during daylight hours, and tracks and scat of bobcats have been observed regularly in Crestridge and other conserved lands in the county.

The Threat from Poisons

Recently, a regular recreational user and his dog located a dead bobcat near the Horsemill Road entrance to Crestridge. Examinations by a local veterinarian and the state veterinary laboratory in San Bernardino indicate that this animal could be a victim of an emerging condition related to the bobcat's consumption of animals that have ingested poisons. Laurel Seney, a UCLA doctoral candidate and moderator of UrbanCarnivores.com, is studying the effects of anticoagulant rat poisons on southern California bobcat populations.



Healthy Bobcat

Although more research is still needed to determine whether a causal relationship exists, here's what scientists know so far. Bobcats may be normal carriers for parasitic mites that burrow into the skin and cause mange, a condition that when severe causes irritation and loss of hair. Domestic animals with healthy immune systems are typically able to keep the infestations at a very low level that does not compromise their health. Recently, many more bobcats have been dying in an emaciated state associated with extreme cases of mange. Emaciation may occur from the mites consuming the animal's resources faster than the animal can hunt, capture and eat prey. Mrs. Seney reports that "In Southern California, National Park Service biologists were the first to document an outbreak of the disease in a local bobcat population within Thousand Oaks, CA. Once the outbreak occurred, the survival rate for the population dropped from near 80% to 26%. During the course of the epidemic, more than 50% of the radio-collared bobcats in the study area died of notoedric mange. Increasingly, cases are being reported in other areas across California..."

Animals stricken with this extreme mange condition and tested for anticoagulant rodenticide exposure have high levels

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between 12 and 25 pounds. They are solitary and territorial animals. Male and female territories overlap, while males tend to maintain separate territories from other males. Females typically bear 2-4 kittens after about 60 days of gestation. Kittens stay with the mother for about 8 months, learning to hunt and survive.

Bobcat presence has been documented consistently in Crestridge Ecological Reserve since it was established in the

Interpretive Signage



Crestridge Native Grasslands Restoration

For many decades, non-native weeds have comprised over 90% of all plants in this 10-acre meadow. These weeds keep native plants from growing, and gradually invade a wider area. In an ecological reserve, one of the major goals is to replace non-native with native plants to keep the native ecosystem in balance. This balance supports the local and migrating native animals that depend on this habitat to survive.

This meadow is being restored with native plants. Students from Cajon Valley Union and other San Diego school districts as well as community volunteers plant and care for the area. They are providing service to the community while learning science and restoration skills.

Some trail routes may be affected during the restoration. Signs will direct you to open trails. Your cooperation will help eliminate the largest source of non-native seeds in Crestridge and support a stronger, healthier home for the native plants and animals that depend on the area. In time, native animals such as burrowing owls and badgers that were likely residents in the past may re-inhabit the area.



Black-shouldered Kite
(*Elanus leucurus*)
A grassland hunter

Purple needle grass (*Nassella pulchra*)

- Purple needle grass, the state grass of California, is the primary native plant used in this restoration project.
- This native perennial grass is a signature species for our state, since it is the most extensive and widespread native grass in California, with a range extending from the California-Oregon border to Baja California.
- It is a beautiful, hardy, and can live over 100 years.
- Its seed was used by Native Americans as a food source.
- During the period of Mexican ownership of California and the huge cowhide and tallow industry they developed, grasses of the Central Valley, including *Nassella pulchra*, were the basis of cattle grazing and subsistence.
- It is an important food source for many animal species such as mice, voles, kangaroo rats, rabbits and ground squirrels, who are in turn hunted by coyotes, foxes, bobcats, snakes, and birds of prey.
- The deep root systems (6-15 feet) of the grass support their own survival as well as that of oak seedlings, by maintaining moisture in the soil for the seedlings and by promoting the growth of mycorrhizal fungi, which are important to the health of oaks.

Source: http://www.netstate.com/states/symb/grasses/ca_grass.htm



Purple needle grass (*Nassella pulchra*)
Photo by Gary B. Monroe



For more information, or to get involved please contact
the Earth Discovery Institute at www.earthdiscovery.org or (619) 447-4715.



VOLUNTEERS

Volunteer stewardship activities make a valuable contribution to habitat improvement and maintenance at a time when agencies are struggling to find adequate resources to care for habitat and conservation facilities.



VOLUNTEERS

One-time events can

- **focus efforts of a large group and accomplish a lot of work quickly**
- **take advantage of themes and special days (e.g., national trails day)**
- **introduce basic conservation concepts to members of the public**



**Scout Troop and SDMBA
build ½ mile sustainable
trail reroute in 4 hours**



**Scout Troop builds
entrance information
kiosk in 1 day**



VOLUNTEERS

Serial events can

- build skills in the volunteer corps, creating a group that can take on more challenging projects
- maintain areas that need consistent attention
- introduce complex conservation concepts to members of the public
- include patrols and neighbors who keep land manager apprised of important safety, habitat, and legal issues



Crestridge Friday Volunteer Crew



Small, but mighty!

- Maintains native plant demonstration garden
- Hand weeding in restoration areas
- Trail brushing
- Other duties as assigned



Annual Native Plant Sale





PARTNERSHIPS

One of EDI's most important functions for the Crestridge complex is to build partnerships that support the biological goals of EHC and CBI while building a corps of stewards who will value the land and its ecosystems throughout their lifetimes.



PARTNERSHIPS

- help land managers meet their conservation goals
- can increase efficiency of staff efforts
- create community support for conservation
- extend and strengthen resources beyond those of any single organization

Reserve neighbors spot unknown plant, contact EDI ... Stinkwort (*Dittrichia graveolens*)! CBI confirms, maps boundaries, EHC and CBI define intervention strategy, EDI coordinates communication, property owners and EHC conduct treatment on respective properties.



Students display and demonstrated service-learning projects to families and community at CER



CalFire crew on PT hike finds illegal encampment on CER, informs EDI



CBI trains EDI staff and volunteers to collect seed

