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Final Report for the Earth Discovery Institute: February 2012 – January 2013 **SANDAG/Transnet EMP: South San Diego County Community Outreach and Habitat Stewardship**



This report describes progress of The Earth Discovery Institute (EDI) to conduct conservation outreach efforts in south San Diego County in coordination with the US Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), the Endangered Habitats Conservancy (EHC), the US Bureau of Land Management (BLM), and The Nature Conservancy (TNC), and the Conservation Biology Institute with community and volunteer events that focus on improving public knowledge about and involvement with conserved lands in southern San Diego County. EDI was notified that it would receive EMP funding for this project in February 2012, but project funds were not available until April 2012. In order to maintain project momentum from previously funded efforts and not lose conservation

opportunities at a prime time of year for restoration work and volunteer participation, and with the support of Transnet EMP staff, EDI chose to use reserve funds as match to carry the project through February and March 2012. Consequently, activities taking place during February and March 2012 are included in this report.

EDI's support of partner efforts was well received and in high demand. Over the course of the project, EDI strived to be responsive to the needs of all partners. This resulted in the project exceeding its scope in many areas. For example, the project was able to coordinate/assist with 11 interpretive events, rather than the 4 planned. The project was able to coordinate 19 one-time volunteer events, rather than the 8 planned. Via these 19 events, volunteers provided 1,572 hours of service to land management partners including 9 events and 504 hours in support of sensitive species and habitats.

Earth Discovery Institute's work to involve the community in local conservation has been a great benefit to the south county land managers, especially the San Diego National Wildlife Refuge. With EDI's help, oak woodlands, vernal pools, and native grasslands are being enhanced, and trails improved by volunteers. Students have increasing awareness and appreciation of these precious lands and the sensitive plants and animals that live in them. EDI's conservation outreach and education means we can reach more community members, students, and volunteers than we could with our small staff alone. That work is important and valued in our mission to conserve and recover endangered and threatened species, protect migratory birds, and support the Multiple Species Conservation Program.

Jill Terp, Manager, San Diego National Wildlife Refuge

EDI was also able to initiate a weekly volunteer crew based at Rancho Jamul ER, serving multiple partners, who provided a total of 185 hours of service to south county habitat between July 2012 and January 2013. The initiation of this crew grew from the interest of weekend event volunteers who wanted to make a greater contribution and was not part of the original scope of activities planned for this project. EDI maintained participation in and support for a weekly volunteer crew at Crestridge ER.

I feel we are so fortunate to live in a country that has so much public land, and out of respect for that open space that allows our native flora and fauna to flourish, I appreciate the opportunity to get to know it, to participate in its stewardship and to help protect it for generations to come. We human's have made a mess of our environment in the past, but now, with better science and understanding, I feel honored to have found an organization that allows me, a volunteer, to be part of the solution.

Volunteer Mary Duffy

Task 1: Interpretive Events

Task	Task Name	Description	Quantified Results for Project	Deliverables
1	Interpretive Events	Coordinate or conduct interpretive events such as guided hikes or educational events	At least 4 interpretive events annually for 20 different individuals and a total of 40 participants on lands of at least 3 partners.	Flyers and training materials for events; Quarterly summary of dates, numbers of participants, description of events. Final report with total numbers and photos of events.

For October 2012 – January 2013, EDI conducted and/or supported 2 interpretive events for 362 total interpretive participant contacts, 24 participation hours, and 362 different participants with 1 partner agency. EDI support for these events consisted of at least 2 event announcements to the contact list and posting on relevant list serves and websites. Support also included recording and maintaining participation data. **Over the course of the entire project EDI has coordinated or assisted with 11 interpretive events, 1 of which addressed covered/sensitive species or habitats. Interpretive events have included 565 participants and 431 different individuals.**

Date	Description	Location	Agency Partner	Event Hours	# of Participants	Participation Hours	# of Different Participants
10/20/2012	Refuge Week Celebration	Sweetwater Marsh; SDBNWR	FWS	6	350*	na*	350*
1/19/2012	Hike with a Ranger	Sweetwater Loop; SDNWR	FWS	2	12	24	12
Q3 Total				8	362	24	362
Q2 Total				2	44	88	42
Q1 Total				26.5	159	119	27
Project Total				36.5	565	231	431

*This was a large, pubic, 'drop-in' style event. No sign-in sheet was required. Hours of participation was highly variable and not subject to record keeping. Number is FWS staff estimate.



Task 2: Volunteer Work Days

Task	Task Name	Description	Quantified Results for Project	Deliverables
2	Volunteer Work Days	Coordinate or conduct volunteer work projects at partner sites	At least 8 volunteer work events annually, at least 4 of which will be directed at covered species, including at least 1 event to assist TNC with establishing a Tecate cypress nursery at RJER. Events will include at least 40 different individuals and a total of 120 participants on lands or projects of all partners annually.	Flyers for events. Quarterly summary of dates, numbers of participants, description of events. Final report with total numbers and photos of events.

EDI One-time Volunteers conducted 1,052 hours of work in support of south county restoration projects, a value of over \$25,400.

For October 2012 – January 2013, EDI conducted 7 one-time volunteer workday events with 109 total participants, 434 hours of work, and 105 different participants with 5 partner agencies. Five of the events, (noted in *bold, italics***) addressed covered/sensitive species or habitats.** For each event, EDI's involvement included 2 advance announcements to recruit participation, preparation of and assistance with all registration materials and processes, working with agency partners to organize, transport, and stage required materials, supplies, and refreshments, and to update electronic and paper records regarding participation. EDI has maintained communications with TNC about the Tecate cypress nursery. TNC's progress on the Tecate cypress nursery has not yet required volunteer assistance, though they expect to tap volunteers in the spring and summer of 2013.

Over the course of the entire project EDI has coordinated 19 one-time volunteer events, 9 of which have addressed covered/sensitive species or habitats. One-time volunteer events have included 287 participants and 239 different individuals.

Date	Workday Description	Agency Partner(s)	Event Hours	# of Volunteers	Total Volunteer Hours	# of Different Volunteers
10/20/2012	<i>Riparian Restoration, Dulzura Sycamore Canyon</i>	<i>BLM</i>	4	17	68	17
11/3/2012	<i>Burrowing Owl Burrow Installation/Eagle Scout Project</i>	<i>CDFW</i>	4	23	92	23
11/17/2012	<i>Cactus Wren Restoration Plot Monitoring</i>	<i>USFWS</i>	4	12	48	11
12/1/2012	<i>South Crest Interpretive Sign Installation</i>	<i>CBI & EHC</i>	3	2	6	2
12/8/2012	Jamul Drive Native Oaks and Shrubs Planting	USFWS	4	11	44	10
12/15/2012	Rancho Jamul Native Landscaping	CDFW	4	13	52	11
1/20/2012	Par 4 Trail Reroute to Prevent Erosion	USFWS	4	31	124	31
Q3 Total			27	109	434	105
Q2 Total			8	34	136	36
Q1 Total			38	144	482	98
Project Total			73	287	1052	239

Working with EDI has made it clear to me how non-profits and governmental agencies can work together to the benefit of our natural environment, habitats and those who live around and in them. Participating in projects with EDI has given us an opportunity to create new and exciting chances for the public to enjoy preserved spaces in San Diego County while at the same time making that enjoyment low impact and sustainable. Only through the continued exposure of individuals to open spaces can we hope to have future stewards for the habitat.

Gardner Grady--San Diego Mountain Biking Association

EDI Weekly Volunteers conducted 524 hours of work in support of south county restoration projects, a value of over \$12,600.

EDI supervises and coordinates the work of 2 weekly conservation work crews; one at Crestridge Ecological Reserve responsive to the direction of EHC and CBI, and one based at Rancho Jamul Ecological Reserve responsive to the direction of CDFG, USFWS, BLM, TNC and CBI for all related preserved lands and conservation projects. **For October 2012 – January 2013, 7 different volunteers provided 228 hours of restoration, monitoring, and maintenance work for 5 of our 6 partner agencies.**

Day	Work Description	Agency Partner(s)	Event Hours	# of Volunteers	# of Workdays in this Reporting Period	Total Hours of Conservation Work	# of New Volunteers
Monday	Jamul Volunteers; Native Landscaping, Seed Collection and Cleaning, Habitat Restoration, Sign Installation	BLM, DFG, FWS, CBI	3	5	12	144	0
Friday	Crestridge Volunteers: Native Landscaping, Seed Collection and Cleaning, Habitat Restoration, Trail Brushing, Facilities Maintenance, Sign Installation	EHC, CBI	3	2	14	84	0
Q3 Total				6	26	228	0
Q2 Total				7	17	157	0
Q1 Total				8	24	157	8
Project Total				8	67	542	8

EDI One-time and Weekly Volunteers conducted 141 hours of seed collection and seed cleaning in support of south county restoration projects, a value of over \$3,400.



The Conservation Biology Institute (CBI) has only 3 staff working on land management and monitoring in San Diego County. Over the last 2 years, we have been fortunate to have the assistance of a group of dedicated volunteers. In the past year, these volunteers have contributed over 1,500 hours to habitat restoration efforts on conserved lands, including over 140 hours seed collection and cleaning, and installation of interpretive signs for CBI projects. These efforts have expanded our land stewardship capabilities and enhanced the ability of CBI and our land manager partners to meet our collective conservation goals.

Patricia Gordon-Reedy, CBI

Task 3: Student Field Visits

Task	Task Name	Description	Quantified Results for Project	Deliverables
3	Student Visits	Conduct service-learning field visits for students from school districts adjacent to partner lands	300 students will participate in service-learning field trips annually on lands of at least 3 partners.	Quarterly summary of dates, numbers of students, participating schools, districts and grade levels of students. Final report with total numbers and photos of events.

The Earth Discovery Institute provided 265 hours of science service learning to 106 students from 1 schools in 1 school districts during the October 2012 – January 2013 reporting period. One hundred-six fifth graders from Blossom Valley Elementary in the Cajon Valley School District visited Crestridge ER where they participated in grade level-specific hands-on activities responsive to state of California science curriculum standards. Students learned about the principals of ecosystems, water and the water cycle, and water-related adaptations of native plants and animals. They planted native grass plants in the native grasslands restoration area, contributing 53 hours of volunteer time to restoration. Students learned how make observations of nature (such as how see evidence of water from variations in vegetation) and record those in a personal field journal. **Over the course of the entire project 313 students from 3 schools in 3 different school districts have received over 780 hours of environmental science service-learning instruction in the context of local habitat.**

Date	Field Site	School District	School	Grade(s)	# of Students	Hours of Instruction/Visit	Total Hours of Instruction
12/5/2012	Crestridge	Cajon Valley Union	Blossom Valley	5th	51	2.5	127.5
12/6/2012	Crestridge	Cajon Valley Union	Blossom Valley	5th	55	2.5	137.5
Q3 Total					106		265
Q2 Total					0		0
Q1 Total					207		517.5
Project Total					313		782.5

*Students visiting Crestridge on EMP-supported science service-learning field trips planted over 300 native *Stipa pulchra* plants in the reserve's grasslands restoration area.*



When my husband and I built our retirement home out in the back country of SD east county it didn't take long to fall in love with the native chaparral and wildlife indigenous to this area. By participating in the activities organized by EDI, I have been able to learn more about the local habitat as well as work towards protecting, preserving and enhancing the wild lands of this unique area

Volunteer Mary Jane Quinn

Task 4: Volunteer Patrol

Task	Task Name	Description	Quantified Results for Project	Deliverables
4	Volunteer Patrol	Coordinate volunteer patrol at Crestridge ER	Provide at least 4 training sessions for patrol members; recruit at least 5 new patrol members; coordinate with EHC CER land manager to monitor/compile reports from patrol members	Quarterly summary of dates/topics of training sessions, numbers of new patrol members enrolled, and numbers and types of reports made by patrol members. Final report with total numbers.

On November 14, 2012, a volunteer patrol training session was held addressing California gnatcatchers in San Diego County ecosystems. The session was presented by John Martin, Biologist for the San Diego National Wildlife Refuge. Patrol members received related materials to add to notebooks that each member is given when they join the group. Of the 13 incident reports related to Crestridge and South Crest conserved lands between October 2012 and January 2013, 6 reports were made by patrol members and addressed campfires, illegal motor vehicles, vandalism, and road-kill adjacent to conserved lands. EDI worked with expert presenters to develop support materials for ranger resource manuals. The ranger manual sections created for these 3 sessions are included in the appendix to this document. Volunteer time for the reporting period included 16 hours in meeting attendance and 6.5 hours in incident reporting, for a total of 22.5 hours for the quarter. (EDI has not yet created a mechanism for recording patrolling hours.)

Over the course of the entire project, 31 patrol members attended 3 training sessions (2 hours/meeting) and reported 20 incidents at Crestridge ER/South Crest to land managers. These incidents represented almost 60% of all incidents reported during the project period. Volunteer time for the project included 64 hours in meeting attendance and 17.5 hours in incident reporting, for a total of 81.5 hours.

Reporting Period	Meeting Date(s)	Topics	# Attending Meeting	# Joining	Total # of Incidents Reported this Period	# Incidents Reported by Patrol Members
Q3	11/14/2012	California gnatcatchers	8	1	13	6
Q2	8/18/2012	Badgers in San Diego County Ecosystems	14	5	6	6
Q1	5/24/2012	Cultural History of Crestridge Ecological Reserve	9	3	16	8
Total			31	9	35	20

My volunteer work with EDI has really opened my eyes as to how each element in our environment is interconnected and fragile. I am humbled by the exquisite beauty that is in my very backyard!

*Reserve Ranger Volunteer
Anne Newton*



Task 5: Conservation Education Center

Task	Task Name	Description	Quantified Results for Project	Deliverables
5	Conservation Education Center (CEC) at RJER	Work with CDFG Land Manager to identify and bring various community groups to the CEC at RJER for habitat-related events	Coordinate or conduct at least 3 events annually at the CEC to include at least 1 school group, at least 1 youth group, and at least 1 adult community group or regular volunteer work day event for a total of 30 participants.	Quarterly summary of dates, groups, and topics of events held at the CEC at RJER. Final report with total numbers and photos of events.

Monday Conservation Crew members contributed 30 hours of work to the demonstration garden from October 2012 – January 2013. The riparian restoration event on 10/20/2012 included a training component that addressed the importance of riparian habitat for native animals, and the effects of wildfire on the target area. Nine San Diego County Parks and Recreation youth participated in that event. An Eagle Scout-Boy Scout group installed five new Burrowing owl burrows at Rancho Jamul Ecological Reserve on November 3, 2012. The instructional and safety aspects of the presentation were conducted at the CEC. EDI will conduct a native plant sale at the CEC on November 10, 2012. The CDFW identified a room at the facility to be developed as a classroom. Project funds were used to purchase tables, white boards, and storage units for the room. EDI is seeking funds to complete preparation of the space and plans to make use of the space for students in the fall of 2013. **Over the course of the entire project 44 youth and 89 adults (133 total individuals) participated in 12 events at the California Department of Fish and Wildlife Conservation Education Center at Rancho Jamul Ecological Reserve.**

Date	CEC Event Description	Group Description	# of Youth	# of Adults	# of Participants
Mondays, Oct. 2012-Jan 2013	Rancho Jamul ER Native Landscaping	Volunteers/Adults	0	5	5
10/20/2012	Riparian Restoration, Dulzura Sycamore Canyon with orientation at RJER CER	Volunteers/Youth and Adults	9	8	17
11/3/2012	Burrowing Owl Burrow Installation/Eagle Scout Project with orientation, initial instruction at RJER CER	Volunteers/Youth and Adults	17	6	23
11/10/2012	Native Plant Sale	General Public	na	na	na
Q3 Total			26	19	45
Q2 Total			1	16	17
Q1 Total			17	54	71
Project Total			44	89	133



Task 6: Newsletter

Task	Task Name	Description	Quantified Results for Project	Deliverables
6	Newsletter	Publish and distribute electronic and paper newsletter of community events and habitat information focused on covered/listed/sensitive species	Publish and distribute 4 quarterly newsletters annually to EDI and south county supporter electronic lists. Print copies of quarterly newsletter to distribute to at least 10 strategic community locations	Quarterly summary with copy of newsletter issues and numbers of electronic and paper copies distributed. Final report with list of species addressed, all publication dates and total numbers of distributed newsletters.

EDI produced and electronically distributed the Fall newsletter during this reporting period. It described many smart phone 'apps' that can help people understand and enjoy nature. After attempts early in the project, EDI stopped efforts to distribute paper copies of the newsletter in community locations. Creating paper copies was expensive and time intensive and paper copies were not consistently picked up from locations where they were placed. EDI continues to put newsletters at information kiosks and at information tables at volunteer and interpretive events. Sample newsletters are included in Appendix. **Over the course of the entire project, each of 4 newsletters was distributed to 700-953 electronic subscribers. The residential fire safety issue was also distributed by postal mail to 81 neighbors of Crestridge Ecological Reserve.**

Reporting Period	Newsletter Issues (s)	Newsletter Publication Date	# Distributed Electronically*	# Distributed Paper	# Locations	Newsletter Content
Q3	Fall 2012	December 2012	953	25	2	Apps for Nature, Education Program Partnership with SPAWAR, Outreach Projects Being Conducted with Partners, Composting Workshop Fundraising Efforts, Fundraising and Donations
Q2	Summer 2012	August 2012	991	25	2	Badgers and Habitat Conservation, Outreach Projects Being Conducted with Partners, New Website, Fundraising Efforts, Fundraising and Donations
	Fire Safety 2012	July 2012	927	81	2	Residential Wildfire Safety: Current Science of Wildfire in Wildland-Urban Interface Areas, How Conservation Agencies Help Protect their Neighbors, Preparedness Tips from the Fire Safe Council of California, Wildfire Prevention, Preparation, and Safety Resources
Q1	Spring 2012	April 2012	915	60	5	Bobcats and Poisons, Dogs in the Habitat, Education Program Update, Reserve Rangers, Corporate Support, South Crest Hike, Upcoming Conservation Events/Save the Date
Total	4 Issues		4,290	191	5	

Task 7: Website

Task	Task Name	Description	Quantified Results for Project	Deliverables
7	Website	Maintain EDI website as location for habitat information and patrol reporting	Website is active and has pages for newsletters with habitat information and for patrol reporting	Quarterly updates of website. Final report with summary of all website updates and use by community.

Over the course of the entire project, EDI launched its new website in August 2012 with publicity and RSVP mechanisms for all 11 events since the launch. The site also features 25 resources links for teacher and students. Newsletters are archived on the website. One incident report was made via the website. Patrol members seem to find phone calls, emails, and text messages more convenient to communicate with EDI staff about incidents/observations. The majority of event participants RSVP via links on the website.

Task 8: Signage

Task	Task Name	Description	Quantified Results for Project	Deliverables
8	Signage*	Install rule and interpretive signs to inform recreation users of appropriate uses and habitat issues	Install at least 45 signs on at least 3 partner properties.	Quarterly summary including maps with locations of installed signs and list of sign types. Final report with totals of signs installed by type with photos.

During the final project period, EDI participated in sign fabrication and installation with 2 partners, the Conservation Biology Institute and the Endangered Habitats Conservancy. Two types of signs related to CBI's ongoing research and restoration project on EHC's South Crest properties: A large (16"X20") sign was installed at the project margins along the most commonly used recreational trail that bisects the project area. EDI facilitated fabrication of EHC 'Habitat Restoration in Progress' signs (paid for by EHC) that will be used around the research/restoration plots. However, biological considerations defined by CBI (possibility of burning some of the plots in Spring 2013) prevented installation of these signs within the EDI project period. At Crestridge ER, EDI worked with EHC on 2 signage projects. First, EHC is undertaking a gradual process of trail rerouting in the Horsemill oak grove. The grove has multiple historic trails which are also used by authorized and emergency motor vehicles to access more westerly portions of the reserve. This trail/road redundancy is contributing to disturbance and compaction in the grove which includes many protected Engelmann oaks, has been affected by recent wildfire and the Gold-spotted oak borer, and forms the largest closed-canopy oak riparian habitat in the reserve. EDI designed and fabricated nine different/30 total informational and directional signs to be used to direct users/drivers to the appropriate route. Twenty of these signs have been installed, with ten in reserve for portions of the reroute to be designated in Spring 2013 and to replace any signs that may be damaged or vandalized.

Second, EDI's education program had previously coordinated students to create trail signs to direct recreational users onto reroutes in the Horsemill CSS and grassland areas. The original signs were drawn on paper and laminated, then installed by the students. Over the last year, these laminated signs have deteriorated badly. EDI and EHC had observed that users seemed more responsive to student-created trail rerouting signs than to more traditional/institutional signs. So, EDI scanned student art and recreated the signs to be fabricated from metal. Seven different designs/directional indicators were created into a total of 28 signs, 18 of which have been installed with 10 in reserve for new areas or replacements. **During the final period of the project, 16 types of signs were designed, 72 signs were fabricated, and 40 signs were installed by EDI volunteers.**

Reporting Period	Type of Sign	# Fabricated	# Installed	Area Installed	Related Partner(s)	Related Project
Q3	South Crest Restoration Interpretive Sign	4	2	South Crest	CBI/EHC	South Crest Brachypodium Removal & Native Plant Restoration
Q3	EHC Habitat Restoration Sign	20*	0	South Crest	CBI/EHC	South Crest Brachypodium Removal & Native Plant Restoration
Q3	Crestridge Oak Grove Trail Rerouting Signs (9 different information & directional signs)	30	20	Crestridge ER Horsemill Oak Grove	EHC	Trail Rerouting to Protect Oaks
Q3	Kids Art Trail Signs (7 different images/directional indicators)	28	18	Crestridge ER Horsemill Area Trails	EHC	Trail Signage in Trail Reroute Areas
Q3		72	40			
Q2	na	0	0	na	na	na
Q1	na	0	0	na	na	na
Total		72	40	9	35	20

Help the Crestridge Oak Grove

Soil compaction, wildfire, drought, and pests are all threats to the trees that comprise this grove. Over the next few years, more trees will be planted and some trails will be narrowed or rerouted. This will support the health of the trees, the hundreds of native animals that depend on them, and help keep this grove thriving and beautiful for human visitors as well.



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



AREA CLOSED FOR HABITAT RESTORATION



ENDANGERED HABITATS CONSERVANCY
P.O. Box 22438, San Diego, CA 92192-2438



Help the Crestridge Oak Grove

**Authorized
Service &
Emergency
Vehicles**



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South Crest Habitat Restoration

Why is this area important?

South Crest supports threatened and endangered species, and is a habitat link between the Cleveland National Forest to the north and the San Diego National Wildlife Refuge, McGinty Mountain, and Sycuan Peak to the south.

Why restore habitat?

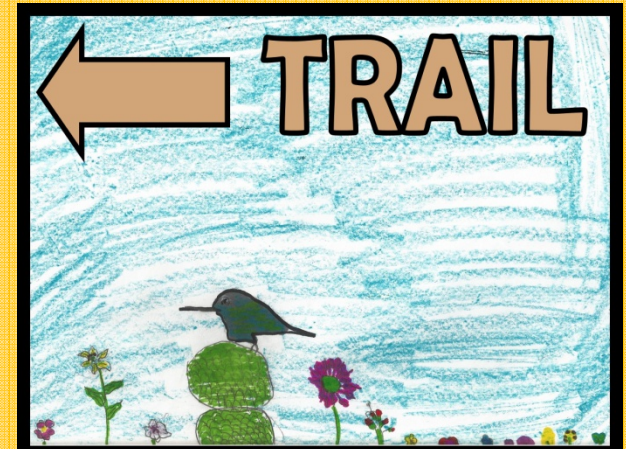
Farming, vehicles, and fire have damaged native vegetation on this mesa, creating disturbances or "gaps" in the landscape. Non-native, weedy grasses fill these gaps and out-compete native plants, alter soil ecology, eliminate wildlife habitat, and increase fire frequency. Restoring habitat allows native plants and animals to thrive and reduces fire damage.

What is the restoration process?

The first phase of restoration - site preparation - involves removing dead plant material and controlling non-native species. In Phase 2, native species are seeded into prepared sites. The goal is to "tip" the balance back to a natural system. This is a 2-year project; however, full restoration may not be achieved for many years.

How can you help?

Preventing traffic (hikers, bikers, dogs) within restoration areas is critical to protect exposed soil and young plants. Please respect signs and fences, and stay on trails. Contact Earth Discovery Institute at (619) 447-4715, or www.earthdiscovery.org if you would like to participate in volunteer events related to this project.



In several years of volunteer involvement, I have observed "high hopes" of dedicated environmentalists (not to mention Harvester Ants) moving whole meadows and hillsides of plants, one seed at a time. I, myself, have even planted some little acorns that hopefully will grow into mighty oaks; so my efforts may be the equivalent of a Scrub Jay. But what I have learned is that innumerable little efforts can be combined to accomplish something great.

Volunteer Mickey Johnston

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Appendix

Volunteer Patrol Training Manual Materials

Kumeyaay Culture

Badgers: Their Local Presence and Environmental Significance

Gnatcatchers: Identifying and Understanding this Important Species

Newsletters

Winter 2012

Spring 2012

Fire Issue 2012

Summer 2012

Fall 2012

Event Fliers 2012