



Back to Natives Restoration, Inc. a 501(c)(3)
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'Saving Habitat One Person at a Time'

Back to Natives Restoration, a 501(c)(3) non-profit organization connects the community to habitat restoration through service learning and native plant education. Back to Natives (BTN) assists in the recovery of Orange County's biodiversity. We incorporated as a non-profit in 2007, but our first project was in 2005 when 200 volunteers came together to plant a butterfly habitat at the Upper Newport Bay Ecological Reserve. The Back to Natives Nursery at Santiago Park in Santa Ana, staffed by community volunteers, grows plants for habitat restoration and to raise funds for service learning and environmental education programs. The Back to Natives Native Plant Reserve (Cuesta Kato) provides habitat for birds and butterflies in Dana Point.

MJV Request for Proposal 2016

Project Rationale/Description:

Back to Natives is raising funds to restore the habitat for monarch butterflies at the Back to Natives Native Plant Reserve in Dana Point, CA. Back to Natives received a donation of land from Kato Properties in late 2015. The 2.5 acres of land along Del Obispo Drive in Dana Point are about a mile from the Pacific Ocean, less than a ½ mile from San Juan Creek, and less than 2 miles from the Dana Point State Marine Conservation Area. It is undeveloped and will remain so to provide habitat for birds and butterflies.

The project will focus on creating habitat for the Monarch butterfly, including planting and/or seeding with locally native milkweed species. Numerous locally native nectar plants will also be included with the goal of creating a monarch breeding and migration habitat. The project will be carried out by volunteers participating in a service learning program. Participants are high school and college age volunteers – as well as community members. Education and outreach will be incorporated to increase interest, awareness and engagement in monarch conservation efforts. The main audience for our outreach will be project participants, but the outreach will reach a broader audience during volunteer recruitment at community events, a PR campaign to draw media attention to the project, a social media campaign, and other outreach efforts.

Program participants will also conduct monitoring to track the monarch population and habitat establishment at Cuesta Kato. A concurrent project to grow locally native milkweed at the Back to Natives Nursery in Santa Ana will also be conducted as a service learning program with interns documenting the successes and failures of milkweed growth in order to increase understanding of milkweed propagation. The milkweed we grow will be used in habitat restoration projects, including that at Cuesta Kato, and also sold to raise funds for our environmental education, service learning, and habitat restoration projects.

A more detailed project need statement is included at the end of this proposal.



Scope of Work: What is to be accomplished within the time and funding allocated

1. Service learning habitat restoration program at Cuesta Kato

Service learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. Back to Natives uses the environment as a context for learning while maximizing hands-on outdoor engagement opportunities for community members, especially local urban and underserved youth. This innovative partnership-based project integrates conservation education and meaningful environmental stewardship. The program addresses the need for habitat restoration, but it also addresses the very important need to get youth outdoors.

Volunteer groups from throughout Dana Point and Orange County will monitor the habitat, remove invasive, non-native species, and seed and plant with appropriate native plant species, focusing our efforts on establishing a healthy population of locally native milkweed. Cuesta Kato provides an ideal location to educate community volunteers about Orange County's natural heritage. Less than a ½ mile from San Juan Creek, and less than 2 miles from the Dana Point State Marine Conservation Area, the location serves as an important wildlife waystation and is important to the health of the San Juan watershed.

Restoration priorities are determined based on the most critical non-native invasions. Back to Natives has already determined that throughout the Reserve, several species of non-native plants have taken root and are spreading. The plan is to create islands of healthy habitat by removing the invasive plants and restoring the site with appropriate native, mostly Coastal Sage Scrub species. Coastal Sage Scrub is an endangered ecosystem that holds a number of endangered species, including the California gnatcatcher. Generally located on high value coastal zone real estate and threatened by land development, the ecosystem represents the struggle between ecological preservation and human population expansion. Restoring Cuesta Kato will prevent the spread of invasive non-native species, promote the spread of native plant species like milkweed, provide habitat for birds and butterflies like monarchs, protect the watershed, and make the landscape more pleasant for the community.

2. Service learning milkweed propagation program at the Back to Natives Nursery

BTN also holds 12 volunteer days *each month* in our native plant nursery at Santiago Park, where we grow plants for use in habitat restoration projects, including at Cuesta Kato. Plants are also sold to raise funds for our environmental education, service learning, and habitat restoration projects. We partner with several OC high schools and colleges to bring students out to service learning projects, including Cal State Fullerton, Cal State Long Beach, Chapman University, Godinez Fundamental High School, Orange County High School of the Arts, Saddleback and Segerstrom High School to name a few. ***Volunteers and interns will document the successes and failures of milkweed growth in order to increase understanding of milkweed propagation.***

3. Monitoring to track the monarch population at Cuesta Kato

Monarch monitoring will be led by Fiorella Gardella, an experienced researcher, credentialed teacher and trained informal environmental educator (she currently works at the Environmental Nature Center in Newport Beach as a Naturalist). Fiorella will lead small groups of high school and college students in monitoring the site for monarchs, engaging them in real-world research and data collection. Students will watch for migrants, and look for eggs, caterpillars, and chrysalis. Student volunteers will have fun and learn concepts that are basic to science, such as standardization of methods, data collection and sampling protocols. Our Citizen Scientists, led by educator/researcher Fiorella Gardella, will utilize the protocols from the website "Journey North" (www.journeynorth.org):

Protocol Type: Opportunistic, First sighting, Sighting

Data Type(s): Presence only

Survey Focus: Adults, Juveniles, Milkweed

Incidental Data Collected: Weather, Habitat notes

Visit Frequency: Opportunistic, during monthly volunteer events, or more frequently depending on the season.

Protocol Notes: Observers report when they see the first adult, milkweed, egg/larvae of the spring season. In fall, observers will report adult migrants. Anecdotal, non-migratory sightings will also be reported and this includes any winter breeding.

4. Monitoring to track habitat establishment at Cuesta Kato

Successful monitoring can prevent many problems associated with restoration projects by providing early warning signals if a project is not on track, improve ongoing project coordination, and to ensure that project goals are being met. BTN utilizes three main types of project monitoring:

- **Pre-implementation monitoring**—Provides baseline information to compare with post-implementation data to determine whether the restoration is having the desired effect. Staff and volunteers do line transects at the start of each project to record the percentage of native vs. non-native cover, which natives and non-natives are present, and which native animals are utilizing the habitat.
- **Effectiveness monitoring**— Staff and volunteers repeat the initial line transects in the middle of each project to record the percentage of native vs. non-native cover, which natives and non-natives are present, and which native animals are utilizing the habitat.
- **Validation monitoring**— Staff and volunteers repeat the initial line transects at the culmination of each project year to record the percentage of native vs. non-native cover, which natives and non-natives are present, and which native animals are utilizing the habitat.

5. Evaluation of Project Participants

The Project Participant Evaluation is designed to assess the effect of the project on participant awareness and engagement in monarch conservation efforts, knowledge and attitudes about the issue of invasive plants in our wildlands, and the need to restore habitat for the benefit of biodiversity. All volunteers – high school and college age students, as well as community members – participating in the service learning program described above will participate in the evaluation process. Data collection will include pretests and posttests, participant logs and written observations, and interviews with some participants. Data will be collected on variables that have been linked to environmentally responsible behaviors. These variables included participants' environmental sensitivity, perceived knowledge of ecology/issues/action strategies, personal responsibility, perceived skill, and intention to act. Results will guide the development of future programs.

End point: A habitat restoration project like this should take about 5 years to come to an “end point” where the majority of target non-native plants are gone and native plants are established. However, in an urban area like Orange County, no habitat restoration project can ever be ignored as non-native invasives continue to be introduced. The area must be monitored regularly and non-native invasives removed immediately upon discovery so that re-infestation does not occur. For the purposes of this grant proposal, the project will begin in June 2016 and reach an “end point” in May 2017, but the program is likely to continue as described in this proposal for about five years.

Tangible Deliverables

1. Restore habitat at Cuesta Kato, establishing 25% coverage of native plants by May 2017. Currently coverage is about 5%.
2. Create habitat for the Monarch butterfly by planting 100 locally native milkweed plants and seeding with three pounds of locally native milkweed seed by May 2017.
3. Document the Monarch population at Cuesta Kato through May 2017.
4. Grow 1000 locally native milkweed plants at the Back to Natives Nursery in Santa Ana by May 2017. Document the successes and failures of milkweed growth in order to increase understanding of milkweed propagation.
5. Provide at least 300 volunteers with a service learning program in Cuesta Kato between June 2016 and May 2017.
6. Provide 900+ hours of habitat restoration services for the habitat in Cuesta Kato between June 2016 and May 2017.
7. 90% of program participants will understand the importance of habitat restoration and biodiversity, and exhibit increased interest, awareness and engagement in monarch conservation efforts.

Approach:

With the help of BTN staff, student volunteers perform belt transects to survey the plants present. They will also monitor the Monarch population during appropriate seasons with the help of a trained Environmental Educator in a Citizen Science project. These activities give volunteers the opportunity to interact with individuals who have a career in science while providing Back to Natives with accurate scientific data regarding the success of our efforts. Participants visit the project site at least once a month during the project year to remove invasive non-native plants, and seed and plant native plant species, focusing on locally native milkweed. Volunteers also hand water the plants if it does not rain adequately. They collect seed and help propagate native plants at the Back to Natives Nursery at Santiago Park to plant in the restoration site.

Key project personnel:

Reginald Durant is the Executive Director of Back to Natives Restoration. Durant designed and installed the Orange County Native Butterfly House as Grounds Coordinator at the Environmental Nature Center in Newport Beach. Durant coordinated with the County of Orange, the Coastal Commission and the Department of Fish and Game to develop the Butterfly Habitat at the Peter and Mary Muth Interpretive Center at the Upper Newport Bay Ecological Reserve. He founded the Land Steward Peer Network – a peer network for restoration ecology professionals. He is educated in Ecological Restoration, and has a BA from the University of California, Irvine.

Lori Whalen is the volunteer Director of Education and Community Relations for Back to Natives. She has worked in the environmental education field for 15 years. She is the staff Education and Community Relations Director at the Environmental Nature Center (ENC) in Newport Beach, where she develops and directs the implementation of natural and social science education programs for preK – 12th grade students, including training and supervision of staff and volunteers. Lori is responsible for the ENC's marketing and communications, as well as the administrative functions of the ENC's educational and volunteer programs. Prior to working at the ENC, Whalen was a staff Naturalist for The Nature Conservancy's Irvine Ranch Land Reserve, where she coordinated the public tour program and managed 130 long-term volunteers. Whalen has a bachelor's degree in Animal Science from Cal Poly Pomona and a master's degree in Communications from Cal State Fullerton.

Fiorella Gardella teaches outdoor environmental and social science education to children. Her goals are to strengthen students' awareness and appreciation for the environment, as well as enhance their knowledge of science concepts and protecting the natural environment. Fiorella has more than 9 years of experience as an educator and researcher. She is knowledgeable in sustainability and environmental issues. She gained her experience as a middle school science teacher in Florida and has also taught environmental education summer programs in Peru and California. Fiorella received her Bachelor of Arts degree in Social Ecology at University of California, Irvine and her Master of Arts degree in Teaching from Miami University.

Trina Ming is a graduate from the University of California, Irvine with a Bachelor of Arts in Environmental Science and a minor in Global Sustainability. She is an Intern II, and staff, at Back to Natives. Prior to working at Back to Natives she conducted native plant research at California State University of Long Beach as well as being a field and nursery intern at the Palos Verdes Peninsula Land Conservancy.

Quarterly Project Timeline:

- Summer 2016** Volunteer recruitment begins. Program marketing begins. Volunteers take transects and determine the percentage of cover of native vs. non-native plant species. Monarch monitoring begins. Non-native invasive removal begins. Milkweed propagation and growth success documentation begins at the Nursery.
- Fall 2016** Volunteer recruitment continues. Program marketing continues (including promotion of Halloween volunteer event at which volunteers come dressed as butterflies). Monarch monitoring continues. Non-native invasive removal continues. Milkweed propagation and growth success documentation continues at the Nursery. The first milkweed and nectar plants are planted in the ground, and milkweed seeds are sown onsite at Cuesta Kato, after the rains begin.

- Winter 2016-7** Volunteer recruitment and program marketing continues. Non-native invasive removal continues. Milkweed propagation and growth success documentation continues. The second round of milkweed and nectar plants are planted in the ground, and milkweed seeds are sown onsite at Cuesta Kato. Volunteers take transects and determine change in percentage of cover of native vs. non-native plants.
- Spring 2017** Volunteer recruitment and program marketing continues (marketing ramped up before Earth Day in anticipation of increased interest in environmental activities. City officials invited to hike the property to see our progress). Non-native invasive removal continues. Milkweed propagation and growth success documentation continues. Monarch monitoring resumes. Volunteers take transects and determine change in percentage of cover of native vs. non-native plants.

Proposed Budget and Budget Justification:

Project Task	per hour	total	Orange County Community Foundation	Monarch Joint Venture	Captain Planet Foundation	SUBTOTAL TASK
Staff salaries	\$40	48	\$ 1,920.00			\$ 1,920.00
Citizen Science - monarch monitoring	\$20	64		\$ 1,280.00		\$ 1,280.00
Propagation Equipment			\$ 2,000.00	\$ 1,000.00	\$ 300.00	\$ 3,300.00
Plants/Seed			\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 2,500.00
Tools			\$ 1,500.00	\$ 1,000.00	\$ 500.00	\$ 3,000.00
Gloves			\$ 200.00	\$ 260.00		\$ 460.00
Weed Hounds			\$ 500.00	\$ 260.00		\$ 760.00
Printing/Outreach			\$ 280.00	\$ 200.00	\$ 200.00	\$ 680.00
Site Insurance/per year			\$ 2,000.00	\$ -		\$ 2,000.00
Liability Insurance/per year			\$ 600.00	\$ -		\$ 600.00
TOTAL			\$ 10,000.00	\$ 5,000.00	\$ 1,500.00	\$ 16,500.00

The budget above details the anticipated expenses associated with this project. We are requesting \$5000 from MJV. The \$1280 for the Citizen Science/Monarch Monitoring part of the project is based on an estimate of the cost of the time for our educator (Fiorella Gardella) to be on site (\$20/hour for 64 hours over 8 months). The staff salary portion, which MJV is **not** being asked to pay for, is to pay two employees, our Executive Director and Intern II, for their time spend on site and preparing for and cleaning up after each Cuesta Kato event. Staff time at the Nursery, and the service learning program that occurs there, is currently funded by other grants, as well as plant sales. Staff time spent marketing this program and its volunteer opportunities, as well as volunteer coordination, is being provided in kind by Lori Whalen. Other Project Funds are described in the budget.



Project Need Statement

Ecosystem Protection

Most of us already understand why monarch conservation is important. There has been a significant 40% decline in the western monarch population. According to the Western Monarch Overwintering Population Counts, many southern California monarch overwintering sites had fewer monarchs than the year prior. There is much work to do to ensure a positive direction for monarchs and the conservation of their habitat.

The environmental issue of ecosystem protection is of vital importance to monarchs, our community, and beyond. Invasive plants can blanket landscapes, making outdoor recreation difficult. Invasive plants significantly degrade wildlife habitat. Nationally, invasive species are the second-greatest threat to endangered species, after habitat destruction. Many invasive plants increase fire fuel loads and are dangerous near homes. An increase in native plant growth provides habitat and numerous other ecosystem services. Ecosystem services include the purification of air and water, detoxification and decomposition of wastes, regulation of climate, and regeneration of soil fertility. Such processes have been estimated to be worth trillions of dollars annually (Daily et al. 1997).

Nature Deficit Disorder

In the book “Last Child in the Woods” author Richard Louv describes “nature deficit disorder” - human beings, especially children, are spending less time outdoors resulting in a wide range of behavioral problems and other issues like childhood obesity. About 9 million children (ages 6–19) are overweight or obese. Lack of interaction with nature may also result in attention disorders and depression. According to a University of Illinois study, interaction with nature has proven to reduce symptoms of ADD in children. According to research, “Overall, our findings indicate that exposure to natural settings in the course of common after-school and weekend activities may be widely effective in reducing attention deficit symptoms in children” (Jim Barlow, News Bureau).

Lack of interaction with nature may also result in children receiving lower grades in school. Studies of students in California and nationwide show that schools that use outdoor classrooms and other forms of experiential education produce significant student gains in social studies, science, language arts, and math (Richard Louv, Orion Magazine). Lack of exposure to nature results in children having limited respect for their natural surroundings, putting wild, open spaces at greater risk of development as those children grow up and become decision makers.

During the program, community volunteers learn about the importance of biodiversity and habitat restoration, as they perform community service to improve the Reserve for both wildlife and humans. The project educates volunteers about the issue of invasive plants in our wild lands, and makes them aware of the need to restore habitat for the benefit of biodiversity. The program is also intended to introduce potential science careers, and generate interest in the environment. Volunteers will learn what it is like to be an ecologist, as they participate in the entire restoration process, from beginning to end.

As you can see your grant would go far to help us accomplish quite a bit at Cuesta Kato over the next year. Thank you for your consideration! If you have any questions, or if you need anything at all, please feel free to call me at 949-335-8656. For additional information on Back to Natives Restoration, visit us online at backtonatives.org.

Sincerely,



Lori Whalen
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