Grant Submission Form

For Consideration for *TransNet* Environmental Mitigation Program (EMP) Fiscal Year 2011 Funding for Land Management

(Applications cannot exceed twelve (12) pages, including all attachments.)

Applicant Name[1]:	Institute for Conservation Research, Zoological Society of San Diego
Address:	15600 San Pasqual Valley Road, Escondido, CA 92027
Name of Property:	Multiple properties throughout San Pasqual Valley / Lake Hodges Subwatershed
General Location:	San Pasqual Valley, Escondido, CA
Jurisdiction:	Multiple (see below).
Total Acres:	Approximately 15,000 in the subwatershed
Estimated Acres Requiring Management	60 acres of critical habitat
Owner(s) of Property[2]:	City of San Diego Park and Recreation and Public Utilities Departments, California Department of Fish & Game, San Dieguito River Valley Conservancy, California Parks and Recreation.

Land manager(s) of property (include name(s)), years of experience managing habitat lands, existing land management responsibilities, and references): Application is proposed for consideration under the following eligible activity area (pick only one):

Bryan Endress: Institute for Conservation Research, Zoological Society of San Diego
Years experience managing habitat: 11 years experience in land management and restoration. *Existing land management responsibilities:* Currently responsible for managing and restoring 900 acre MSCP at the Safari Park. *References*: Allison Alberts (Chief Conservation and Research Officer, Zool. Society of San Diego: aalberts@sandiegozoo.org), Trish Smith (The Nature Conservancy: trish_smith@tnc.org), Christine Moen (Manager S. W. Riverside County Multi-Species Reserve. Phone: 951-926-7416).

Nicole McGinnis: Natural Resources Manager, Watershed & Resource Protection, City of San Diego Public Utilities Department. *Years experience managing habitat lands:* 7 years managing over 41,000 acres of Public Utilities Department rural land holdings. *Existing land management responsibilities:* Provide management recommendations for department-owned lands to City officials; manage projects in support of habitat preservation, restoration and creation, watershed management and water quality. References: John Martin, Refuge Biologist, United States Fish and Wildlife Service, Paul Schlitt, Environmental Scientist, California Department of Fish and Game, Michael Beck, San Diego Director, Endangered Habitats League, Jerre Stallcup, Conservation Biologist, Conservation Biology Institute

Betsy Miller: MSCP Biologist, Park and Recreation Open Space, City of San Diego. *Years experience managing habitat lands*: 8.5. *Existing land management responsibilities:* Rare plant monitoring, development of MSCP area specific management directives and natural resource management plans, and adaptive management strategy development for over 22,000 acres of City of San Diego open space. *References*: Chris Zirkle (City of San Diego Park and Recreation Open

[1] While collaboration is encouraged in the development of the grant proposal, the proposal must identify one organization as the lead enitity which will enter into an Agreement with SANDAG.

[2] If the applicant is not the landowner, please submit a letter or right-of-entry permit from the land owner granting permission to perform the land management duties as outlined in the application. Failure to provide the letter or right-of-entry permit will lead to disqualification of the application. **Attach letter or right-of-entry permit if applicable.**

Space Deputy Director: 619-533-6721), Keith Greer (SANDAG: 619-699-1900), Jeanne Krosch (City of San Diego City Planning and Community Investment MSCP Senior Planner.

Jason Price: Associate Wildlife Biologist, Region 5 Reserve Manager, California Department of Fish and Game. *Years experience managing habitat lands*: 3+ years managing approximately 10,000 acres of Fish and Game Lands on 11 different reserves located throughout San Diego County. *Existing land management responsibilities*: Manages Reserves for wildlife and habitat through protection and restoration. *References*: Supervisor: Karen Miner, Senior Environmental Scientist, Supervisor.

Darren Scott Smith, Environmental Scientist, California State Parks. *Years experience managing habitat lands*: 10 years managing State Parks Lands in southern California. *Current land management responsibilities*: Natural Resource Program Manager for 10 State Parks; develop management plans; implement habitat monitoring and maintenance work plans; manage environmental stewardship restoration and invasive plant projects; Design and participate in environmental community outreach programs. *References:* John O' Leary, Professor of Geography, San Diego State University, Janet Franklin, Professor of Biology, Arizona State University, Patricia Masters, President, Torrey Pines Association, Mike Hastings, Executive Director, Los Penasquitos Lagoon Foundation, Mike Sweesy Habitat Restoration Division Manager, Dudek and Associates.

Jason Lopez: Resources and Trails Manager, San Dieguito River Park Valley Open Space Park. *Years experience managing habitat.* Over 8 years. *Existing land management responsibilities:* Responsible for management, exotic plant control, and restoration on hundreds of acres with the San Dieguito River Watershed. References: Leslie Wollenweber, San Dieguito River Valley Conservancy.

Leslie Wollenweber: Conservation Programs Director, San Dieguito River Valley Conservancy. *Years experience managing habitat lands:* 5 years managing invasives control and habitat restoration projects on ~1,000 acres in San Dieguito Watershed. *Existing land management responsibilities:* Management of grant-funded invasives control and habitat restoration projects; coordination of volunteer-based habitat restoration activities; chair of San Dieguito Invasives Management Group. *References:* Shawna Anderson, Principal Environmental Planner, San Dieguito River Park, Shea O'Keefe, USDA Natural Resources Conservation District, Jerre Stallcup, Conservation Biology Institute.

PLEASE NOTE: All Project Collaborators listed have written support letters for this proposal. Due to limitations on proposal length (12 pages) and the number of letters (6), we are unable to attach the letters. However, we are more than happy to share the letters upon request.

☐ *Invasive Control and Habitat Restoration*

☒ *Species-Specific Management*

☐ *Habitat Maintenance, Access Control/Management, and Volunteer Coordination*

Brief Project Summary (200-word maximum)

The goal of this project is to develop and begin implementing a subwatershed-level management plan to restore and manage native habitat to support a stable, resilient Coastal Cactus Wren (CACW) population in the San Pasqual Valley/Lake Hodges region of the San Dieguito Watershed. This subwatershed is one of the most biologically significant areas in S. California for CACW and requires immediate attention. The primary landowners and managers of the area are submitting this proposal to come together to indentify, prioritize, and implement habitat management within the subwatershed context to ensure quality habitat and healthy CACW populations. To achieve these goals we will evaluate CACW habitat quality, distribution, size, and connectivity, as well as map known locations of CACW pairs and then use this information to indentify key sites to target management and restoration to maximize effectivness both ecologically and economically. We are particularly interested in increased connectivity of existing high quality, yet isolated habitat patches to provide support for

CACW movement, dispersal and colonization throughout the subwatershed. To do this, we will enhance and restore 60 acres of habitat based landscape priorities and utilize best restoration techniques to ensure successful restoration. This project will result in more effective management and reduced costs in the future.

Quantify Expected Results (add bullets as necessary)

- Development of a habitat management and restoration plan for coastal cactus wrens (CACW) and their habitat for this biologically significant subwatershed.
- Development of clear communication pathways for landowners, managers, and leases to ensure effective collaboration, coordination, and implementation.
- Expand CACW habitat by restoring and enhancing 60 acres of cactus scrub in key areas in the subwatershed
- Increase landscape connectivity by reducing distances between core habitat.
- Develop and produce guidelines for CACW habitat enhancement and restoration by synthesizing best practices and techniques.

Funding Needs Summary

1. Please indicate how much funding is being requested from SANDAG and any matching funding proposed:

Budget Item	Requested Funding Amount	Proposed Matching Funds*	Description
Personnel Expenses Staff	**$279,556**	**$122,342**	Includes staff time for non-administrative work on the project
Personnel Administrative Expenses	**$0**	**0**	Includes all staff time to administer the contract
Consultant Expenses	**$36,000**	**$0**	Includes all costs for consultant services
Other Direct Expenses	**$12,500**	**$9,000**	Includes all equipment, supplies, millage, etc.…
Indirect Costs[3]	**$55,770**	**0**	All indirect charges (e.g.,,overhead) on the project, if any.

*if applicable

2. Are there matching funds available? If yes, how are the matching funds assured (100-word maximum)?

☒ Yes ☐ No

Explain how matching funds are assured.

The matching funds come from the annual labor and operating budgets of the Applied Plant Ecology division at the Institute for Conservation Research (San Diego Zoo). In addition, many of the grant partners are able to provide matching funds for restoration on their land (an additional $20,460; see budget). We are not requesting or officially matching administration funds because Indirect Costs on the grant (17%) support grant administration activities.

PROJECT PROPOSAL

(Maps and/or graphics can be referenced and pasted at the end of this Word document or attached as a separate digital file.)

A. Project Purpose

1. What eligible management activities will be done on the property and why?

(1) Coordinated land management between landowners, land managers and leases.

3 Indirect Costs are only allowable with either: (1) an indirect cost allocation audit approved by a qualified independent auditor or (2) the applicant's proposed method for allocating indirect costs must be submitted in accordance with OMB guidelines and approved by SANDAG. Indirect costs will not be reimbursed until one of the two conditions above are satisfied and and indirect cost allocation plans must be renewed annually.

(2) Habitat restoration, exotic plant control, and habitat enhancement on 60 acres.

2. **What is the biological significance of the property for endangered or covered species, sensitive habitats, core habitat areas, wildlife linkages, and/or regional habitat conservation planning?**

Based on a wealth of data and field surveys conducted by a wide range of professionals (e.g. USFWS, USGS, Kris Preston, Rob Hamilton, and many others of the Cactus Wren Working Group) throughout San Diego, Orange, Riverside, and L.A. Counties, the overwhelming consensus is that the Lake Hodges-San Pasqual Valley subwatershed likely contains the greatest number of CACW pairs and some of the best core habitat remaining in S. California, and is therefore one of the most biologically significant areas in terms of CACW survival and persistence. At the San Diego Zoo Safari Park alone, there are at least 30 family groups (2011 surveys). However, the habitat throughout the subwatershed – which is a Core Biological Area within the Multiple Species Conservation Program's (MSCP) Multi-habitat Planning Area (MHPA) – is currently fragmented, suffers from disturbances (below) and lacks subwatershed management to effectively manage and support a resilient and persistent CACW population. CACW and their habitat are found on the property of 6 different land management groups (all who are partners on this proposal), and currently there are not integrated management and restoration activities to protect and manage this critically important area. This project proposes to coordinate both land managers and on-the-ground management actions, as well as implement the MSCP conditions of coverage for CACW within the Lake Hodges/San Pasqual Valley.

3. **Does the site suffer from natural, human, or domestic animal disturbance (e.g., off-road vehicle use, uncontrolled access, unauthorized grazing, fire, flooding, erosion, exotic species invasion, and/or feral cats)?**

The primary threats to core habitat include frequent, intense wildfires and the conversion of CACW core habitat to exotic-dominated grasslands. Threats are exacerbated by the fragmented landscape, which increasingly isolates CACW populations, by making it more difficult to disperse, colonize and/or move in response to disturbances. The 2007 Witch Creek fire burned extensive areas within the subwatershed. While some areas recovered well (San Diego Safari Park), others did not (particularly around Lake Hodges). Threats are exacerbated by the fragmented landscape, which increasingly isolate CACW populations, making it more difficult to disperse, colonize and/or move in response to disturbances. In addition, the large number of both public and private property owners makes large-scale restoration projects difficult.

4. **Is immediate action needed to address a problem to prevent the site from degrading further? Would the further degradation potentially affect covered species?**

It is critically important to develop and implement a subwatershed-level habitat restoration and management plan in Lake Hodges and San Pasqual Valley, particularly because we have a fragmented landscape divided and managed by a number of different landowners and jurisdictions. Without management at this scale, the most biologically relevant and significant population of CACW in S. California along with their core habitat will continue to degrade, and future restoration and management plans will not be optimized or coordinated, further risking CACW populations and their habitat. This proposal addresses the limited utility of some high quality existing habiat becuase of their isolation. Isolation and fragmentation limits CACW populations in the region and increases the probabilty of CACW extirpation in isolated patches due to disturbances (e.g. wildfire) or stochastic events.

5. **Does the proposal use efficient and proven methods and/or strategies to address the land management needs that would result in a high likelihood of success and reduce future land management costs (e.g., control of small outbreak of aggressive exotic species, fencing to prevent damage to rare plant populations)?**

The fundamental concept of this proposal is to conduct a project designed to maximize success and reduce future costs of land management. To do this, we need to work at the subwatershed level rather than at the individual property or habitat patch level. In this way, efforts and actions of the land managers will be coordinated and prioritized based on the overarching goal of maintaining and supporting a resilient CACW population throughout the area, not just on one specific piece of property. Restoration techniques and plans proposed here are not only informed by the personal experiences of the group, but also

based on the lessons learned from the entire Coastal Cactus Wren Working Group (a consortium of individuals and organizations focuses on CACW conservation and management). This ensures that current best practices will be utilized.

6. **Does the proposal implement a strategic approach which covers large geographic areas (e.g., watershed or subwatershed extent) involving multiple partners and providing multiple benefits (e.g., part of a larger coordinated effort that is high economy-of-scale)?**

This proposal covers the Lake Hodges-San Pasqual Valley subwatershed (approximately 15,000 acre area, bounded in the West by Lake Hodges Dam and in the east just east of San Pasqual Academy) and MSCP Core Biological Area, and includes all of the major landowners and leases that support CACW and their core habitat. This includes: California Department of Fish & Game, California Department of Parks and Recreation, City of San Diego, San Dieguito River Valley Conservancy, San Dieguito River Park, and the San Diego Zoo.

By coordinating habitat management, each individual land management unit, as well as the overall subwatershed will benefit. Moreover, since a part of this project includes gathering, synthesizing, implementing and publishing best land management and restoration activities from the broader Cactus Wren Working Group, the entire region will benefit from the work further ensuring a high economy-of-scale. The most recent Cactus Wren Symposium (June 3, 2011) highlighted the need to synthesize, develop, and share best restoration techniques, and byproducts of this proposed effort will also benefit organizations involved in CACW conservation and habitat restoration across coastal S. California.

Robb Hamilton's surveys in 2008 evaluated 14 separate habitat patches throughout the subwatershed, some of which are separated by nearly 4 kilometers (much greater than the recommended distance of 1 km between habitat patches). In reality, there are many other smaller habitat patches of varying quality throughout the area; however, we lack details on their spatial location, habitat quality, proximity to current CACW pairs, and the distance between the different patches to properly prioritize and target management and restoration activities. This project proposes to do just this.

7. **How would the project result in measurable biological success to implement the Natural Communities Conservation Program regional preserve system? What measurable results would be used to determine success of the project?**

Success will be measured in several ways. By the end of the project, we will have:

- A published (and online) habitat management and restoration plan for CACW for the area.
- The development of clear communication pathways for the landowners, managers, and leases to ensure effective collaboration, coordination, and implementation. This will be measured by the frequency and participation at meetings and discussions.
- Restoration of 60 acres of coastal sage scrub and cactus scrub in key areas.
- Increased landscape connectivity by reducing distances between core habitats.
- Produce a manual highlighted best best practices and techniques for restoration and management.

8. **How would the project involve public outreach/public participation to identify the land management activities being funded and promote awareness of grant-funded project? In your proposal please estimate the following, if any:**

    a. **number of individuals in public to benefit from the project,**

Very difficult to quantify, but we envision visitors and users of open-access areas of the subwatershed will benefit from the habitat restoration efforts.

    b. **number of proposed volunteer hours on project,**

We envision approximately 200-300 volunteer hours for this project.

    c. **use of signage and interpretation features to be used to educate public on purpose of project, and**

Interpretive elements, such as signs, brochures, press releases, and websites will be utilized to engage the public about the importance of native habitat, coastal cactus wrens, and biodiversity conservation and the role of SANDAG and project partners in supporting regional conservation and management. Additionally, this project will be highlighted to Zoo members

(over 250,000) as well as the general public in traditional (Conservation Update, ZooNooz) and online publications and websites (Facebook, Twitter, Global Action Team, Conservation Clips, etc.).

d. outreach efforts on public access, if proposed.

Not planned for this project.

B. Scope of Work by Task

Project Objective: Develop and begin initial implementation of a subwatershed-level management plan to restore and manage native habitat to support a stable, resilient Coastal Cactus Wren population in the San Pasqual Valley/Lake Hodges region of the San Dieguito Watershed. To accomplish this goal, activities have been divided into a series of Tasks and Phases to be implemented over a three-year period (January 1, 2012-December 30, 2014).

Task 1: Development of Habitat and Restoration Management Plan. In order to restore and manage effectively and in a cost-effective manner, it is important to develop a management plan for the subwatershed that incorporates the different habitat patches found under different land managers jurisdictions. To accomplish this, we have divided the development of Task 1 into three primary components or phases: (1) an analysis of the quality, distribution, size and connectivity of CACW habitat in relation to the location of known CACW family groups, (2) an analysis of best practices to enhance and restore habitat, and (3) utilize information from Phases 1 and 2 to develop a comprehensive, collaborative habitat restoration and management plan. By focusing on these three components, we will not only be able to not only prioritize habitat restoration activities at the subwatershed level, but also be able to then harness best practices and techniques to implement the restoration in an efficient and effective manner (Task 2).

Phase 1: Distribution, Connectivity and Quality of CACW habitat. Recent work by the broader Coastal Cactus Wren Working Group (presented in early June 2011) focused on the importance of habitat quality, size, and connectivity in order to manage CACW at the subwatershed and watershed levels. This information, in addition to information on known locations of CACW in our area will serve as the foundation for prioritizing habitat management actions. To do this, we will use a combination of site assessments, spatial analyses, and data from partners.

The first step will be to gather and incorporate known locations of CACW in the subwatershed into a GIS database. This information will come from a number of sources including past records (Robb Hamilton's 2008 surveys), knowledge of land managers (PI's on this grant), as well as on-going work banding and monitoring CACW in San Pasqual Valley by Barbara Kus's USGS team. This information will provide us with a basic understanding of current distributions and numbers of CACW in the subwatershed. This information will then be complemented with data generated from an assessment of CACW suitable habitat, its size, distribution, and connectivity. Again, some of this data will come from past efforts (e.g. Robb Hamilton's 2008 evaluation, USFWS mapping projects from 2009-present). However, due to the scope of past efforts, not all sites were visited and mapped, and the quality of these sites may have changed drastically since little work has explored how well these areas have recovered from the 2007 wildfires. Observations by current land managers suggest some areas have recovered quite well (San Diego Zoo Safari Park), while others, such as some areas near Lake Hodges, have not.

To evaluate this, we will identify core habitat patches, map their locations, sizes and shapes using GPS and GIS technology, and then conduct an evaluation of habitat quality and needs. Site assessments will follow current recommendations by the Coastal Cactus Wren working group (presence and cover of cacti > 1 meter, suitable cover of native shrubs, and mininal exotic plant cover), as well as evaluating and measuring several new variables the group thinks may be important such as percent cover of bare ground (important for foraging) and the presence of Mexican elderberry (provides cover and perching habitat). Any evidence of CACW activity (nests, sightings, etc.) will also be documented and added to our database on known CACW locations (above).

From the data collected above, we will then be able to conduct spatial analyses to assess the size, distribution, quality and other landscape variables (e.g. aspect, elevation, land ownership) of the habitat patches to identify and prioritize

areas for restoration and enhancement based on the ecology and needs of CACW. We are particularly interested in identifying areas to target restoration and enhancement so that habitat patches are no greater than 1 km from another habitat patch (current best recommendations). Having all of the major land managers involved in this process is a critical part of the project, because it allows us to incorporate local expert knowledge from the area to ensure habitat evaluations, maps, and analyses are accurate and appropriate. Moreover having the entire group develop priorities based on this information will help the group and each individual land manager begin to make management decisions within the broader subwatershed context.

Phase 2: Best practices for habitat restoration and management. We are committed to utilizing best practices for restoration and enhancement activities. However, those best practices remain unclear. Currently many individuals, groups, and organizations are actively restoring CACW habitat in S. California and utilizing a wide variety of techniques and methods. The most recent Coastal Cactus Wren Workshop in early June highlighted the tremendous need to synthesize and evaluate past and current restoration methods because it remains unclear under what situations different techniques are warranted. This information is desperately needed in order to develop cost-effective management and restoration activities, especially due to the limited amount of money often available for restoration.

Therefore, we propose to interview, document and evaluate the state of current knowledge and best practices based on the expert knowledge and experiences managers in the broader region. Essentially, this will build on Robb Hamilton, Mark Dodero, and others restoration guidelines drafted several years ago but update them based on the lessons learned from the broader CACW management community. Information and data (including select site visits) will be gathered from a number of restoration practitioners and experts, such as Trish Smith (Orange County), John Martin (USFWS), Margot Griswold (Chiquita Canyon Conservation Area), Megan Lulow (Irvine Ranch), Jason Lopez (San Dieguito), Mark Dodero (Recon), and other key practitioners. We will use these data to learn from and build on current knowledge and experience, and to guide the implementation of our restoration plan (Task 2) and maximize the cost-effectivness of our activities. Not only will this data be useful to us, but we will also develop and publish a free manual on best practices and techniques based on our findings to share with the greater Coastal Cactus Wren Working Group and others working on CACW habitat restoration.

Phase 3: Development of Management Plan based on Phase 1 & 2.
The development of a comprehensive, collaborative management plan will be done using an iterative and recursive process of adding information, discussing implications with partners, adding additional important information, and developing priorities and key issues. We will hold meetings and updates every 2-3 months to discuss observations, current findings, and other relevant information in order to develop a highly collaborative, effective plan. At less frequent intervals (semi-annual), we will solicit input from outside CACW experts for their feedback and suggestions (such as Trish Smith, Kris Preston, Robb Hamilton). This approach should maximize our groups' ability to develop a plan based on and informed by the knowledge and expertise within the land managers of the subwatershed but also informed by the broader CACW community.

The plan will prioritize management actions and serve as a guide for land managers. This will allow us to evaluate, balance, and ultimately prioritize different management actions based on current information at the subwatershed level in order to ensure the subwatershed goal of supported a resilient, healthy CACW population. This information is critically needed so that the limited funds for restoration not only are targeted to the proper areas (e.g. to increase connectivity of isolated patches) but also utilize appropriate and effective restoration techniques. The development of such a plan is vitally important given the incredibe value of this subwatershed for CACW in San Diego County and the greater Southern California region. The San Pasqual Valley/Lake Hodges subwatershed is one of the last strongholds of CACW in the county, and it is vitally important that the diverse array of land managers (represented in this proposal) are acting in a coordinated fashion to ensure healthy CACW populations.

Deliverables and Measures of Success: success will be demonstrated by the production of these products.

- Phase 1: Maps, and summary data as well as various forms of spatial data available for conservation and

management planning.

- Phase 2: Manual that documents and synthesizes information on best practices, lessons learned, and specific techniques utilized across the region in support of habitat enhancement and restoration.
- Phase 3: Habitat Enhancement, Restoration, and Management Plan for the San Pasqual Valley/Lake Hodges Area.
- Phases 1-3: Establishment of communication process among land managers in the region to increase coordination, collaboration, and implementation of landscape management plan.

Task 2: Habitat Restoration: I Management Plan Implementation

Based on the findings from Task 1, we will then begin habitat enhancement and restoration activities to support our overall goal. For Task 2, we propose to conduct habitat restoration and enhancement activities on 60 acres within the subwatershed (30 acres/year in 2013 and 2014). Because Task 1 in not complete, we cannot state the locations of priority areas specifically, but we suspect the primariy issue will focus on increasing connectivity of isolated patches. This will be confirmed in Task 1. Initial restoration and habitat enhancement will involve planting of propagated and salvaged *Opuntia*. There are two reasons for our focus exclusively on *Opuntia* at this time. Not only is *Opuntia* a key requirement for CACW occupancy, it is also the slowest growing of the restoration species (as opposed to elderberry, buckwheat, etc.). Thus establishing *Opuntia* as soon as possible is critical. Additionally, it remains unclear (see Task 1; Phase 2) what combination and at what density other native species should be planted. Observations in the subwatershed as well as those presented at the June 2011 Coastal Cactus Wren symposium from across the region indicate that CACW will nest in areas with cactus but otherwise dominated by exotic grasses. While perhaps not ideal, simply planting cactus now may be sufficient in the short term, with the addtion of other native species later as new information and recommendations emerge (which will be a product of Task 1).

Based on Robb Hamilton's experiences as well as others it is estimated that 40 acres of cactus-containing scrub is needed to support 5+ CACW territories for a period of decades. Thus the 60 acres proposed here would be sufficient to create one new habitat patch, in addition to enhancing 20 acres of existing habitats throughout the area. Task 1 will determine the specific location(s) of the activity, and will determine if this is done to add on to existing habitat or to create of new patches in order to increase connectivity.

Specific restoration techniques will be informed by current research and experience of the group (Jason Lopez, Bryan Endress, etc.) as well as the results from Task 1, Phase 2. At present, we expect to plant a series of five 10x10m 'islands' of propagated cacti on each acre with direct planted (dry rooted 6 months) pads interspersed between the islands. Densities will be 150 plants/acre, again based on recommendations and experience of land managers and the broader CACW community. Both John Martin (USFWS) and Bryan Endress (ICR) are currently using these methods on other CACW restoration projects. Sites will be herbicided as needed to promote establishment and reduce competition between cacti and exotic species. We will also explore planting salvaged large cacti (> 1 meter in height) on some of the areas given the recent success of moving large cacti have had in Orange County (Margot Griswold). We currently have 10 large CACW 'ready' cacti that we will utilize for habitat restoration. These will be planted and located in the areas of greatest need as identified in Task 1.

Deliverables and Measures of Success:

- Propagation of 9,000 of prickly-pear cacti (density 100 direct/acre & 50 propagated/ acre).
- Move and plant 10 large (> 1 m) Opuntia.
- 60 acres of enhancement planting of cacti based on watershed level priorities to maximize effectiveness.
- Additionally, success will be measured by monitoring 1st year survival and establishment of cacti and percent cover of native and exotic species.

Grant Submission Form

C. Budget by Task

Item/Task	2012 TransNet Request	2012 ICR Match	2013 TransNet Request	2013 ICR Match	2014 TransNet Request	2014 ICR Match	TOTAL
TASK 1							
Senior Personnel							
Project Director: Dr. Bryan Endress 15% of time/year for three years @ $60/hour (salary +benefits).	$0	$17,905	$0	$17,905	$0	$17,905	$53,716
Postdoctoral Research Fellow. 100% full time for 2.5 years, with 75% of time focused on Tasks 1 and 25% on Task 2. Take lead in coordinating between land managers; designs and conducts habitat quality assessments, spatial analyses, and documenting best practices; develops reports and management plan in collaboration with all partners.	$48,000	$0	$48,000	$0	$24,000	$0	$120,000
Other Personnel							
Biological Technician: Half-time position, split 25% for Task 1 and 25% for Task 2. For Task 1, position will assist Postdoctoral fellow with habitat quality assessments, data entry, analyses, best management practice synthesis. Half time for Task one is based on 1,040 hours/year @ $32/hour (salary+ benefits).	$16,926	$0	$16,926	$0	$16,926	$0	$50,778
GIS Technician. 15% of time. Provide additional GIS and spatial analysis support for project @ $32.55/hour (salary + benefits).	$0	$10,155	$0	$10,155	$0	$10,155	$30,466
Graduate/undergraduate Summer Fellow: Two, 12 week fellowships to assist with habitat quality assessments @ $9,120/student.	$0	$9,120	$0	$9,120	$0	$0	$18,240
Materials and Supplies							
Vehicle use, gasoline, computes, field supplies, and GIS software	$0	$2,000	$0	$2,000	$0	$2,000	$6,000
TASK 2							
Senior Personnel							
Postdoctoral Research Fellow. 100% full time for 2.5 years, with 75% of time focused on Tasks 1 and 25% on Task 2. Take lead in coordinating between land managers; designs and conducts habitat quality assessments, spatial analyses, and documenting best practices;	$16,000	$0	$16,000	$0	$8,000	$0	$40,000
Other Personnel							

Biological Technician: 1/2 time position, split between Tasks 1 and 2. For Task 2 (25% each) position will collect, propagate, care for and assist in planting cacti. Half time for Task 2 is based on 1,040 hours/year @ $32/hour (salary+ benefits).	$16,926	$0	$16,926	$0	$16,926	$0	$50,778
Restoration Crew- Field crew of 8 to implement 30/acres/year for 2 years (years 2 & 3). Based on past experience this will take 1,800 hours @ $16/hour (no benefits)	$0	$0	$9,000	$5,400	$9,000	$5,400	$28,800
Graduate/undergraduate Summer Fellow: One 12 week fellowships to assist with cacti propagation, assessment of restoration @ $9,120/student.	$0	$0	$0	$0	$0	$9,120	$9,120
Materials and Supplies							
Misc.operating supplies for, propagation and care and planting (pots, soil, augers, shovels, etc.) @ $5,000/year for two years.	$0	$1,000	$5,000	$1,000	$5,000	$1,000	$13,000
Herbicide applicator license training.	$2,500	$0	$0	$0	$0	$0	$2,500
Herbicide application for site preparation @ $18000/year for 2 years.	$0	$0	$18,000	$0	$18,000	$0	$36,000
Total Direct Costs	$100,352	$40,181	$129,852	$45,581	$97,852	$45,581	$459,398
Indirect Costs / Administration (17%)	$17,060		$22,075		$16,635		$55,770
Total	$117,412	$40,181	$151,927	$45,581	$114,487	$45,581	$515,168
Total Transnet Request:	$383,826						
Total ICR Match:	$131,342						
Total Project Costs	$515,168						

Other Matching Notes: An additional **$20,460** of matching funds (labor and supplies) is available for this project from the other collaborations on the proposal. This has not been entered into the above table because some of the additional matching funds can only be used if the restoration occurs on or adjacent to those organization's properties (e.g. California State Parks). However, because we need to wait until Task 1 is complete to determine the exact location(s) of the restoration, we are not sure which matching funds will be included in addition to those listed above. Matching by the City of San Diego and San Dieguito River Valley Conservancy can be regardless of site location in the subwatershed. If fully utilized the total match for this proposal would be **$151,804**. Confirmed matching funds include:

City of San Diego Parks & Recreation: Total: $8,920. Labor (Task 1): $5,574 (80 hours over 2 years at $69.68/hour for Task 1); Labor (Task 2): $3,346 (80 hours over 2 years @ $41.83/hour.

San Dieguito River Valley Conservancy: Total $800. Labor: 800 (Task 1).

California Department of Fish and Game: Total $5,040. Task 1 $240 (Labor), Task 2: $4,800 (Labor).

California State Parks: Total $5,700. Labor**:** $3,200**;** Materials & Supplies: $2,500 for invasive control or revegetation on or adjacent to our land. Donor site for cactus pads or seed collection. Access to state lands for monitoring, control, and restoration.

Grant Submission Form

D. Project Schedule

Please include a specific start and end date for each task described in the Scope of Work (section B above). This should include both tasks by number and the month and year of the start and end dates. Please include tasks for both quarterly reporting on the status of the grant project and a final report on the outcome of the grant project. You may add or subtract row and columns as needed (or insert an Excel spreadsheet).

Task # and Name	Proposed Start Date	Proposed End Date
Task 1: Phase 1: Habitat quality, distribution, and connectivity.	1/1/2012	1/1/2013
Task 1: Phase 2: Best restoration practices and information/data synthesis	10/1/2012	6/1/2013
Task 1: Phase 3: Development of management plan	7/1/2013	6/1/2014
Task 2: Phase 1: Habitat restoration and enhancement	6/1/2013	12/31/2014

NOTICE REGARDING PREVAILING WAGES

SANDAG's EMP Land Management Grants are funded with *TransNet* revenues consistent with the *TransNet* Extension Ordinance adopted by the voters in November 2004, (SANDAG Ordinance 04-01). Although SANDAG Ordinance 04-01 does not require payment of prevailing wages, a recent appellate court case (Asuza Land Partners v. Department of Industrial Relations 191 Cal. App. 4th 1 (2010)), may require that *TransNet*-funded public works projects pay prevailing wages to workers. The Asuza case held, in part, that all construction of public improvements required as a condition of regulatory approval is subject to prevailing wage law, including public infrastructure constructed at private expense. Before submitting a grant application to SANDAG, applicants are strongly encouraged to seek advice from an attorney regarding whether the Asuza case will subject the proposed grant project to prevailing wage laws consistent with Labor Code Section 1720 *et seq*. If awarded an EMP Land Management Grant, the grant agreement between SANDAG and the grantee requires grantee's compliance with all federal, state and local laws and ordinances applicable to the agreement.

REQUIRED STATEMENTS FROM GRANTEE

☒ Yes ☐ No The proposed grantee has read the standardized agreement.

☒ Yes ☐ No If the SANDAG Board of Directors approves the grant, the proposed grantee agrees to sign and return the standardized agreement to SANDAG, without exceptions, within 45 days of receipt.

☒ Yes ☐ No The proposed grantee agrees to comply with SANDAG's Board Policy 035 "Competitive Grant Program Procedures," which outlines "use-it-or-lose-it" project milestone and completion deadlines. Board Policy 035 is included in the standardized agreement, and is also on SANDAG's website at the following link: http://www.sandag.org/organization/about/pubs/policy_035.pdf

☒ Yes ☐ No The proposed grantee understands that that 10% of all invoices will be retained untill the completion of the project.

☒ Yes ☐ No The proposed grantee understands that that all invoices must be accompanied by written support of the charges for both requested reimburancement of grant funds and matching funds.

☒ Yes ☐ No The proposed grantee understands that approval of funding by the SANDAG Board of Directors, the applicant will provide a copy of their approved indirect rate audit or their proposed methodology to SANDAG for review and approval which must occur prior to the executation of the grant agreement.

☒ Yes ☐ No The proposed grantee understands that a resolution including the requirements of Board Policy 035, Section 4.1, must be submitted to SANDAG at least **two weeks** prior to the recommendation by the Regional Planning Committee of the list of grant projects to be considered eligible. SANDAG will provide applicants with advance notice of the Regional Planning Committee's anticipated meeting date.

I have the authorization to submit this grant on behalf of my organization.

Paula Brock CFO

Grantee Name/Title (print or type)

Paula Brock 6/10/11 mm/dd/yy

Grantee Signature **Date**