

## Threat Reduction Stewardship Grant Application

Applicant Name: Earth Discovery Institute  
Address: 120 North Park Dr., El Cajon, CA 92021  
Phone: 619-318-2432  
Email: christine@earthdiscovery.org  
Name of Property: El Monte Preserve (AKA Hanson Pond)  
General Location: 14000 El Monte Road, Lakeside, CA 92040  
Jurisdiction: County of San Diego  
Total Acres: 142  
Estimated Acres Requiring Management: 142  
Owner(s) of Property: Endangered Habitats Conservancy  
Land manager(s) of property (include name[s]): Chris Manzuk

### Project Name: El Monte Preserve Bat Hotel

#### Brief project summary that includes your primary goal and objectives. (200-word maximum)

The goal of the proposed project is to aid the recovery of locally declining bat species, by: 1) Creating a thermally stable, long-term (i.e., 50-75 years) roost site, or “bat hotel” on the El Monte Preserve; 2) Creating replicable building plans for the “bat hotel,” so it can be used as a prototype on other conserved lands; and 3) Engaging and educating the public about the ecological importance and conservation value of bats, both online and through in-person educational events.

Both the Townsend’s big-eared bat (*Corynorhinus townsendii*) and pallid bat (*Antrozous pallidus*), California Species of Special Concern, were observed within 3.5 miles of the El Monte Preserve during 2017 bat surveys conducted at El Monte County Park (Stokes 2018). de Boer Engineering will build the roosting structure in close coordination with Drew Stokes, Wildlife Biologist and local bat expert for the San Diego Natural History Museum. Together, de Boer Engineering and Mr. Stokes designed the structure to be long lasting, low maintenance, and cost efficient. We envision the “bat hotel” as a prototype for additional structures to be constructed on suitable preserves throughout the MSCP Plan Area, thereby contributing to a long-term recovery strategy for this taxon on a landscape scale.

**Quantify expected results (add bullets as necessary)**

- A thermally stable, long-term bat roost structure on the El Monte Preserve
- Bat species inventory for the property
- “Bat Hotel” building instructions and materials list for use by other MSCP Plan Area Land Managers
- In-person engagement of 48 people through outreach events, and engagement of approximately 500 people online through Earth Discovery Institute’s website.
- Final Report

**Brief description of dedicated staff and/or consultants/contractors that would work on the Project.**

- Subcontractor, de Boer Engineering, has been licensed since 1979 and is a general engineering company. Mr. de Boer has assembled 250 bat panels for Caltrans bridges throughout southern California.
- Endangered Habitats Conservancy Senior Land Manager, Chris Manzuk, has worked for the Conservancy for 6 years. Mr. Manzuk is responsible for managing 16 Reserves (10,000 acres) throughout San Diego County.
- Subcontractor, San Diego Natural History Museum (SD Nat) Wildlife Biologist, Drew Stokes, has almost 20 years of experience researching, preserving the livelihood, and physically handling all species of bats in southern California. He is regarded as San Diego’s local bat expert.
- Earth Discovery Institute (EDI) Conservation Director, Christine Beck, has over 25 years of working on species conservation projects in San Diego County. For 12 years, Ms. Beck helped implement local Natural Community Conservation Plans such as the Multiple Species Conservation Program Plan.
- EDI Executive Director, Sarah Maisonneuve, is a PhD Candidate in Ecology with more than a decade of experience establishing and managing ecological research and conservation projects around the globe.

**Funding Needs Summary**

Budget Item	Requested Funding Amount	Description
Personnel Expenses	\$11,660	EDI staff time for project management and fieldwork (i.e., bat survey training with Drew Stokes and monitoring use of the bat hotel).
Consultant/Contractor Expenses*	\$64,000 \$ 2,180	de Boer Engineering for purchase of all materials, and to build and install the bat hotel at El Monte Preserve. SD Natural History Museum Wildlife Biologist to conduct field surveys and liaison on bat hotel construction and installation with Conservancy Land Manager and de Boer Engineering.
<b>TOTAL</b>	<b>\$77,840</b>	

Total in-kind match = **\$ 9,780**:

The Endangered Habitats Conservancy will provide **\$ 7,200** of in-kind salary match for a Senior Land Manager (60 hours @ \$120/hour) to assist with site access, site preparation, and bat hotel installation (see attached EHC letter of support).

The San Diego Natural History Museum will provide **\$ 2,180** of in-kind salary match for a Wildlife Biologist (20 hours @ \$109/hour), to conduct bat surveys and data analysis. In addition, Mr. Stokes has agreed to conduct baseline bat surveys of the El Monte Preserve in April 2022; however, these hours have not been included as match.

## Project Application

### Project Purpose

The goal of the proposed project is to aid the recovery of locally declining bat species, by: 1) Creating a thermally stable, long-term (i.e., 50-75 years) roost site, or “bat hotel” on the El Monte Preserve; 2) Creating replicable building plans for the “bat hotel,” so it can be used as a prototype on other conserved lands; and 3) Engaging and educating the public about the ecological importance and conservation value of bats, both online and through in-person educational events.

The Earth Discovery Institute, in cooperation with the Endangered Habitats Conservancy, proposes to build potential day and night roost habitat for locally occurring bat species including the Townsend’s big-eared bat (MSP Rank SO species) and pallid bat (MSP Rank SL species). Building roost habitat for these two species is identified as a 2022 management priority in the MSP Roadmap Transnet Management Priorities 2022-2026 document (SDMMP 2021). Both of these bat species were once common and widespread throughout the County (Stokes 2018), but are now listed as California Species of Special Concern due to loss of roost sites, foraging habitat, and direct extermination of colonies (Stokes 2018, SDMMP 2017). Both species are sensitive to disturbance at roost sites, including encroaching urbanization as well as direct disturbance from humans (e.g., removal of the man-made structure bats are using for roost site, cave exploration).

Historically, the Townsend’s big-eared bat was considered “widely and commonly distributed from the sea coast to the desert” in San Diego County (Krutzsich 1948 as quoted in Stokes 2018). The species was found “wherever suitable roosting places” were available with “no preference for any particular associated vegetation”. The Townsend’s big-eared bat is an obligate cave-roosting species, commonly roosting in caves and cave-analogs, including abandoned mines and other man-made structures. In San Diego County, its range is strongly associated with the presence of caves and boulder habitat. During surveys conducted in 2017, only one Townsend’s big-eared bat colonial roost site was detected within the MSCP Plan Area (Stokes 2018).

The pallid bat was considered “widely and commonly distributed west of the divide” in San Diego County (Krutzsich 1948 as quoted in Stokes 2018). Krutzsich stated roosts were often large and “have been long used” indicating high roost site fidelity. Of the 12 known historic colony sites in San Diego County, all of which were in man-made structures, none remain. There are two new known colonial roosts that have been documented in the past decade; both are in vulnerable settings on private, non-conserved land (Stokes 2018).

The El Monte Preserve has many features that make it an ideal location for the proposed project (Figure 1): 1) it is adjacent to a portion of the San Diego River, 3.5 miles downstream of an area where both the Townsends big-eared bat and pallid bat were detected during 2017 surveys; 2) it has a pond that holds water year-round; 3) it has flat, open areas for foraging; 4) it is closed to the public; and 5) beginning in February, an active 15-acre cactus scrub restoration project funded by the Wildlife Conservation Board, through the State’s Local Assistance Grants Program. Cactus scrub is a preferred pallid bat foraging habitat (Drew Stokes, pers. comm. January 26, 2022).

De Boer Engineering has constructed and overseen installation of 250 bat panels on bridges being retrofitted or constructed by Caltrans throughout southern California. Together, Mr. de Boer and Drew Stokes, Wildlife Biologist and local bat expert for the San Diego Natural History Museum, created the design of the proposed bat hotel. The hotel will measure 7 feet wide by 7 feet long by 5 feet tall and constructed of Styrofoam/wire mesh sprayed with a concrete/stucco-like mixture

(please see de Boer Engineering cost estimate for a complete description). These materials will be durable but lighter in weight than traditional bat concrete panels. The roof will be corrugated aluminum that is also sprayed with the concrete/stucco mixture. The hotel will be mounted onto a 20-foot tall pole that will be buried 3-5 feet below ground, and it will be installed as one piece. Once installed, the bat hotel will be approximately 15 feet off the ground. The area where the hotel will be installed is mostly bare ground, so we anticipate no direct disturbance to native vegetation, other than possible trimming of broom baccharis (*Baccharis sarothroides*; Figure 3).

In April 2022, prior to the grant agreement term and hotel installation, Mr. Stokes has agreed to conduct baseline bat surveys on El Monte, at no charge. After construction of the bat hotel, Earth Discovery Institute staff, in close coordination with Mr. Stokes, will monitor use of the bat hotel one afternoon/evening on a quarterly basis or five times during the grant agreement term. The Earth Discovery Institute will purchase an Echo Meter Touch Pro 2 for use with an iPad or iPhone, as match for this grant. According to the product website, this device “lets you hear and record bats as they fly by, and automatically identifies the most likely species”. Mr. Stokes recommended the device as a good outreach tool, but cautioned that it could not be used as scientific verification of presence by a particular bat species. We would rely on Mr. Stokes’s bat detection equipment and surveys for verification of hotel bat use. The project will be considered successful if one bat species is observed roosting in the hotel.

The Earth Discovery Institute’s (EDI) mission is to inspire stewardship of San Diego’s native biodiversity through education and conservation. Since its inception in 2000, EDI has worked on resource conservation projects throughout eastern San Diego County, offered a suite of environmental education programs for school-age children, and hosted numerous outreach events for adults and children. The proposed project will expand our outreach program to include five guided walks focused on local bats, their ecology, preferred habitats, and local conservation efforts. These walks would coincide with the timing of the quarterly bat surveys, but be held on different dates than the surveys. During each of the five walks, EDI staff would use the Echo Meter Touch while sitting a respectful distance from the bat hotel, giving people an opportunity to watch bats exiting and entering the roost structure. As part of his in-kind salary match for the proposed project, Mr. Stokes has offered to be present for at least one of these walks and give a short presentation on his bat research/studies.

The El Monte Preserve is owned and managed by the Endangered Habitats Conservancy (Conservancy). The Conservancy is a nonprofit land trust organization whose mission is to acquire, manage, monitor, and maintain land in Southern California for habitat protection and restoration, agricultural preservation, and other conservation purposes. Incorporated in 2005, the Conservancy currently manages approximately 10,000 acres of conserved open space lands within the County Subarea Plan Preserve including the El Monte Preserve. The Conservancy has agreed to maintain the bat hotel as part of the other long-term management responsibilities funded by the Preserve’s endowment; however, the hotel has been designed to require little long-term maintenance.

The El Monte Preserve is located along the upper San Diego River in Lakeside, an unincorporated community in San Diego County, California (Figure 1). This property is within the County Subarea Plan Area, more specifically within the Metro-Lakeside-Jamul Segment.

#### References:

Krutzsch, P. H. 1948. Ecological study of the bats of San Diego County, California. MA Thesis, Univ. Calif., Berkeley, Calif. 184 pp.

San Diego Management and Monitoring Program (SDMMP). 2017. MSP: A Strategic Habitat Conservation Roadmap Volume 2D: Goals and Objectives for Species Focus Management Species. Section 7.1 Pallid Bat (*Antrozous pallidus*) – Category SL and 7.4 Page V2D.7-1 to 7-4 and Section 7.4 Townsend’s Big-eared Bat (*Plecotus townsendii pallescens*) – Category SO Page Page V2D.7-11 to 7-14.

Stokes. D. 2018. DRAFT Final report for focused pallid bat (*Antrozous pallidus*) and Townsend’s big-eared bat (*Corynorhinus townsendii*) surveys in San Diego County, California. Prepared for San Diego Management and Monitoring Program by the San Diego Natural History Museum. 28 pp.

### Scope of Work by Task

Please break down the application into discrete tasks and include a task name, description of each task, quantifiable expected results, and discrete deliverables for each task.

#### Exhibit A – Proposed Project Scope of Work

Task No.	Task Name	Task Description	Quantifiable Results/Deliverables
1.	Bat Hotel Construction	de Boer Engineering will build the bat hotel at its workshop off site and transport to El Monte, once completed. In coordination with Conservancy Senior Land Manager and Drew Stokes, de Boer will install the hotel.	Thermally stable, long-term bat roosting structure at the El Monte Preserve.
2.	Bat Surveys, Monitoring, and Data Analysis	Drew Stokes will conduct bat surveys and data analysis, and assist EDI staff with quarterly monitoring of the hotel.	Baseline bat inventory for the El Monte Preserve, and scientific verification of whether bats are roosting in the hotel.
3.	Bat Outreach and Education	EDI will lead quarterly bat walks (5 total) at El Monte to include 8 attendees per walk. EDI will add content to its website and social media accounts about the bat hotel project, the local bat species that might use it, and other information regarding local bat species conservation and ecology.	500+ members of the public more engaged and educated about local bat natural history and conservation efforts. EDI website content devoted to the bat hotel, its importance, and general local bat ecology.
4.	Report Writing	Complete and submit Final Report at the end of the grant agreement term.	A final report that includes “how-to-build” instructions with a material list for use by other MSCP Preserve land managers..
5.	Project Management / Administrative	EDI staff will be responsible for project management.	Quarterly invoices and progress reports

### Budget by Task

**Exhibit B – Proposed Project Budget**

Task No.	Task Name	Grant Request
1.	Bat Hotel Construction and Installation	\$64,000
2.	Bat Surveys, Structure Monitoring, and Data Analysis (incl. subcontractor, San Diego Natural History Museum Wildlife Biologist)	\$ 4,560
3.	Bat Education and Outreach	\$ 3,250
4.	Report Writing	\$ 1,900
5.	Project Management / Administrative	\$ 4,230
<b>Subtotal</b>		<b>\$77,840</b>
		\$
<b>Total</b>		<b>\$77,840</b>

### Project Schedule

**Exhibit C – Proposed Project Schedule (Assumes fall 2022 NTP)**

Task No.	Task Name	Proposed Start Date	Months Needed to Complete Task	Task End Date
1.	Bat Hotel Construction	0.25 Month from NTP	1 Month	03/01/2023
2.	Bat Surveys, Structure Monitoring, and Data Analysis	3 Months from NTP	15 Months	04/30/2024
3.	Bat Outreach and Education	3 Months from NTP	15 Months	04/30/2024
4.	Report Writing	16 Months from NTP	0.5 Months	06/01/2024
5.	Project Management	0.25 Months from NTP	18 Months	06/15/2024

The bat hotel will take one month to construct and install on the site. Any delay in the NTP could result in the first quarterly bat survey and bat walk being conducted after April 30<sup>th</sup>, 2023. We do not anticipate that unexpected weather conditions will cause delays in project implementation.

## Notice Regarding Prevailing Wages

California law requires that public works projects pay prevailing wages for workers.

Applicant acknowledges that any work that qualifies as a "public work" within the meaning of California Labor Code Section 1720 shall cause Applicant and its subcontractors to comply with the provisions of California Labor Code Sections 1775 et seq, which includes the payment of prevailing wages to all workers performing prevailing wage work.

X Yes  No

Applicant acknowledges that if Applicant or its subcontractors will engage in the performance of a public work as defined by California Labor Code Sections 1720 et seq. and will utilize persons who are not employees of a public entity, registration and payment of an annual registration fee to the California Department of Industrial Relations (DIR) shall be required of each entity performing the work. This requirement applies to anyone affected by the public works statutes found in the California Labor Code, including but not limited to landscapers, fencers, surveyors, soil testers, dredgers, heavy equipment operators, and inspectors.

X Yes  No

Applicant acknowledges that if Applicant will award any subcontracts for the performance of a public work:

- Applicant shall notify SANDAG 30 calendar days prior to the award of each subcontract so SANDAG can create a Project Registration Form (aka PWC-100 form) for each subcontract using the DIR online database. Applicant will provide to SANDAG the name, DIR registration number, and contractor's license numbers of each subcontractor so SANDAG can verify, prior to Applicant's award of the subcontract for a public work, that the selected subcontractor is currently licensed and registered with the DIR. If SANDAG finds that the selected subcontractor is not licensed and registered with the DIR, SANDAG will promptly notify Applicant and Applicant will not be permitted to award the subcontract to the selected subcontractor.

X Yes  No

- Applicant shall notify SANDAG ten business days prior to the subcontractor performing the prevailing wage work so SANDAG can prepare for labor compliance monitoring.

X Yes  No

- If there are any changes to a subcontractor or lower-tier subcontractor, Applicant will advise SANDAG of these changes as soon as those changes are known to the Applicant.

X Yes  No

## Required Statements from Applicant

Yes No

- The applicant has read and understands the Sample Grant Agreement (Agreement) and Invoice Template (Attachment 4).
- If the Board of Directors approves the proposed project application, the applicant agrees to sign and return the Agreement to SANDAG, without exceptions or amendments, within 45 days of receipt.
- The applicant agrees to comply with SANDAG's Board Policy No. 035, Competitive Grant Program Procedures, which outlines "Use-it-or-lose-it" project milestone and completion deadlines. Board Policy No. 035 is included in the Agreement, and also available at: [sandag.org/organization/about/pubs/policy\\_035.pdf](http://sandag.org/organization/about/pubs/policy_035.pdf)
- The applicant understands that 10% of all invoiced amounts will be retained until the completion of the proposed project.
- The applicant understands that all invoices must be accompanied by written, documented support of the charges for requested reimbursement of grant funds and payment will not be made by SANDAG until all documents are satisfactorily submitted.
- The applicant understands that invoices and reports must be submitted on a quarterly basis within three weeks after each period close covering January 1 to March 31; April 1 to June 30; July 1 to September 30; and October 1 to December 31.
- The applicant understands that the EMP quarterly report template (to be sent to the grantee after NTP is issued and can be found at [sandag.org/index.asp?classid=17&projectid=447&fuseaction=projects.detail](http://sandag.org/index.asp?classid=17&projectid=447&fuseaction=projects.detail)) must be used to document quarterly progress and that invoices with errors will be returned to the grantee for correction prior to being processed by SANDAG staff.
- The applicant understands that the final invoice must be accompanied by written, documented support of the charges for requested reimbursement of grant funds; a final report (prepared in accordance with the final report template to be sent to grantee after NTP is issued and can be found at [sandag.org/index.asp?classid=17&projectid=447&fuseaction=projects.detail](http://sandag.org/index.asp?classid=17&projectid=447&fuseaction=projects.detail)); and all outstanding deliverables in order to receive final payment and have retained funds released.
- The applicant understands that to be considered eligible for funding, a resolution complying with the requirements of Board Policy No. 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 prioritized project applications. SANDAG will provide applicants with advance notice of the Regional Planning Committee's anticipated meeting date.
- The applicant agrees to submit all project data/information to SANDAG and to upload data and reports to a project page created by the applicant on the SDMMMP web portal in a format consistent with regional management databases.

I have the authorization to submit this application (Grant Application and required supplementary materials) on behalf of my organization.

Christine Beck, Conservation Director

**Applicant Name and Title (print or type)**

*Christine Beck*

**Applicant Signature**

31 January 2022

**Date**

de Boer

General Engineers

Lic A, B, #371272 since 1979

760.805.2640 [jimdbrr@gmail.com](mailto:jimdbrr@gmail.com)

Proposal for a multi-species bat shelter including design, construction, and installation for the El Monte site.

Scope of work:

1. Survey the site and start the design process.
2. Design the shelter/bat hotel based on the existing elevation and site survey including input from Drew Stokes field biologist of birds and mammals department and department of bioservices, San Diego Natural History Museum, as well as staff of the Earth Discovery Institute.
3. Source and acquire necessary materials. Construct the shelter/bat hotel at our facility.
4. Transport, excavate for foundation, and install the structure per design.
5. Clean up and leave the site as found.

Description of the structure

The bat structure is a 7' x 7' welded steel framed house with cement coated high density structural foam walls with an insulated corrugated steel hip roof. The outside walls have panels based on a design that we have installed on many bridges and bridge piers for CalTrans. The entire structure is supported at a height 17' on a steel vertical support. The bottom of the structure is open and has bat panels on the inside. The bottom edges are sloped to discourage bird nesting. On two opposing sides there are openings leading to a chamber in the center. The combination of bat panels and internal chambers will accommodate both crevice and cavity roosting bats species such as the pallid bat and Townsend's big-eared bat. The roof has an overhang to provide shade and contribute to controlling a constant thermal mass for the panesl.

Cost for design, materials, fabrication, delivery, transportation, equipment for installation, and installation: \$64, 000.



Hanson Pond

15-acre cactus scrub restoration

Figure 1. Map of El Monte Preserve showing locations of proposed bat hotel and 15-acre cactus scrub restoration project.



Figure 2. Location where the bat roosting structure will be erected on the El Monte Preserve. Hanson Pond can be seen in the background, looking west/northwest.