

NATIONAL PARK SERVICE FINANCIAL ASSISTANCE: NOTICE OF INTENT TO AWARD

This announcement is not a request for applications.

This announcement is to provide public notice of the National Park Service's intention to award financial assistance for the following project activities. *Refer to Section 2. Grants.gov Posting Determination.*

ABSTRACT	
Grants.gov Opportunity Number	P20AS00060
Project Title	Data Driven Analysis and Forecasting: A Partnership for Everglade
Recipient	University of California San Diego
Anticipated Federal Funding	\$79,313 For project year one.
Non-Federal Cost Share	NA
Total Anticipated Award Amount	\$415,313 Five year total
Award Instrument	☐ Task Agreement ☒ Cooperative Agreement ☐ Grant Agreement
Anticipated Period of Performance	May 1, 2020 - Dec 21, 2025
Legal Authority	54 USC §101702 Cooperative Agreements - (a) Transfer of Service +
CFDA # and Title	CFDA: 15.945 Cooperative Research & Training Programs - Resou +
Single Source Justification Criteria	Unique Qualifications
National Park Service Point of Contact	Emmett Collin Johnson, Financial Assistance Awarding Officer

Section 1. Project Summary

PROJECT GOALS AND OBJECTIVES

Project Goals: 1. Develop open-source empirical dynamic modeling tools for analysis of complex non-linear systems. 2. Apply modeling tools to the formulation of NPS positions on specific Everglades restoration project features. 3. Provide an opportunity for graduate level training in the new and important field of ecosystem-scale restoration science.

Project Objectives: 1. Create empirical dynamic modeling tools specific to Everglades restoration efforts. 2. Apply these tools to a specific Everglades restoration related project. 3. Educate management on the use of information from this approach. 4. Provide ongoing opportunities for graduate students to engage in the development and application of this skill set.

STATEMENT OF PUBLIC PURPOSE

The principal purpose of the relationship is to develop useful empirical dynamic modeling tools to guide the National Park Service and specifically scientists and managers at Everglades National park in the selection of the best management practice and restoration actions for achieving the publicly recognized and congressionally authorized goal of Everglades Restoration, to improve the well-being of the National Park for the benefit of the public. This partnership will provide an opportunity for Everglades National Park and Scripps Institute of Oceanography at UCSD to combine and use high performance computing, complex observational data, and broad ecological understanding to make restoration-related decisions for the benefit of the organizations involved, their students, and the public as a whole.

STATEMENT OF WORK SUMMARY

A. Project Summary – The Sugihara Lab is a recognized leader in the analysis of complex ecological systems¹, with emphasis on the identification of causal links, while the SFNRC operates under congressional mandate to conduct scientific research and analysis to inform Everglades Restoration. The SFNRC maintains a large, inter-agency environmental monitoring network, and a rich database of ecological and environmental data spanning the Everglades over decadal timescales. Linking these two entities is expected to:

1. Provide state-of-the-art ecological analysis informing Everglades Restoration. This step is critical to the development of NPS positions on restoration and current water management activities to optimize current conditions within Everglades National Park and adjacent lands.
2. Merge state-of-the-art computer science techniques with empirical dynamic modeling tools. This step addresses the specific need to improve computer data processing techniques to allow for information to be derived from broad scientific data sets.
3. Develop data-driven nonlinear system analyses for Everglades hydrological forecasting. This aspect is critical to move our decision-making process from being a primarily model based analytical process to a data-driven process. It is the critical connecting step necessary to get the full value from the broad array of monitoring that has been put in place to support the Everglades restoration effort.
4. Provide graduate research opportunities in the fields. This final aspect is the key component to getting a long-term return from this current investment by developing a next generation of ecological scientists with very sophisticated computational skills.

RESPONSIBILITIES OF THE PARTIES

A. The recipient shall be responsible for the following items under this agreement:

Through this program, the recipient will produce advanced state-of-the-art ecological analysis products, create empirical dynamic modeling tools and apply those data-driven tools to Everglades Restoration through nonlinear system analysis. Provide graduate research opportunities in the fields of ecology, machine learning and natural systems pertinent to large scale ecological restoration efforts, contributing to the development of the next generation of systems scientists.

B. The NPS Responsibilities:

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A task agreement is proposed;

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A cooperative agreement is proposed;

therefore substantial involvement by NPS is anticipated during the period of performance of this agreement. In support of this agreement NPS will:

1. Assist UCSD in obtaining data for analysis, framing analytical questions of interest to management for both current water management operations and future Everglades restoration activities.
2. Assist in the form of providing resource data and identifying priorities.
3. Provide the time and abilities of our lead research scientist for substantial involvement in the development of computational products.
4. Provide information about past model-driven restoration related decision efforts as appropriate to help guide the formulation of data-driven products.
5. Provide opportunities for students to interact with working environmental science and resource management professionals.
6. Allow UCSD researchers to use park computers to perform assigned tasks

☐

A grant agreement is proposed, therefore no substantial involvement on the part of the NPS is anticipated for the successful completion of the statement of work. It is anticipated that involvement will be limited to actions related to monitoring project performance and technical assistance at the request of the recipient.

Section 2. Grants.gov Posting Determination

- ☐ The National Park Service intends to award a task agreement under a previously competed or single source justified award.
- ☒ The National Park Service intends to award a single source justified cooperative agreement. *Refer to Section 3 Single Source Justification.*
- ☐ The National Park Service intends to award a single source justified grant agreement. *Refer to Section 3 Single Source Justification.*

Section 3. Single Source Justification

NATIONAL PARK SERVICE SINGLE SOURCE POLICY REQUIREMENTS

National Park Service Policy FAP&P 1443-2015-06 requires a written justification which explains why competition is not practicable. The justification must address one of the following criteria.

In order for an assistance award to be made without competition, the award must satisfy one or more of the following criteria:

- (1) Unsolicited Proposal – The proposed award is the result of an unsolicited assistance application which represents a unique or innovative idea, method, or approach which is not the subject of a current or planned contract or assistance award, but which is deemed advantageous to the program objectives. The unsolicited proposal must demonstrate an innovative capability or concept not currently available to the government, and prepared without Government involvement. ;
- (2) Continuation – The activity to be funded is necessary to the satisfactory completion of, or is a continuation of, an activity presently being funded, for which competition would have a significant adverse effect on the continuity or completion of the activity;
- (3) Legislative intent – The language in the applicable authorizing legislation or legislative history clearly indicates Congress' intent to restrict the award to a particular recipient of purpose;
- (4) Unique Qualifications – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as location, property ownership, voluntary support capacity, technical expertise, or other such unique qualifications. Successful past performance, familiarity with existing requirements, capabilities that can be obtained or matched by a competitor, or a positive reputation, are not considered to be unique qualifications.
- (5) Emergencies – Program/award where there is insufficient time available (due to a compelling and unusual urgency, or substantial danger to health or safety) for adequate competitive procedures to be followed.

NPS did not solicit full and open competition for this award based the following criteria:

- ☐ Task Agreement issued under previously competed or single source master cooperative agreement per Section 2 above. Single Source Justification not applicable.
- ☐ Unsolicited Proposal ☐ Continuation ☐ Emergency
- ☐ Legislative Intent ☒ Unique Qualifications

Explanation of the proposed recipient's qualifications or the criteria of the proposed project which requires use of the single source criteria cited.

The most direct evidence of the unique expertise of this recipient is the team's publication record. Two examples include original work and a more recent publication, both in the journal Science, working on complex interactions in ecological systems. These and other publications establish Dr. Sugihara as a uniquely qualified world leader in this particular area of research and analysis.

Sugihara, G., K. Schoenly and A. Trombla. 1989. Scale invariance in food web properties, Science 255: 48-52.

Sugihara, G., R.M. May, H. Ye, E. Deyle, M. Fogarty and S. Munch, 2012. Detecting causality in complex ecosystems. Science 338: 496-500.

Section 4. Department of the Interior Secretary's Priorities

This award will support the following DOI Secretary priority(ies):

Other Key Initiatives:

- ☐ Employment of veterans.
- ☐ Supporting DOI Infrastructure needs.
- ☐ Creating jobs in the American economy.
- ☐ Access to outdoor recreation opportunities.

Priority 1: Creating a conservation stewardship legacy second only to Teddy Roosevelt

- ☒ Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment.
- ☐ Examine land use planning process and land use designations that govern public use and access.
- ☐ Revise and streamline the environmental and regulatory review process while maintaining environmental standards.
- ☐ Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity.
- ☐ Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands.
- ☐ Identify and implement initiatives to expand access to DOI lands for hunting and fishing.
- ☐ Shift the balance towards providing greater public access to public lands over restrictions to access.

Priority 2: Utilizing our natural resources

- ☐ Ensure American energy is available to meet our security and economic needs.
- ☐ Ensure access to mineral resources, especially the critical and rare earth minerals.
- ☐ Refocus timber programs to embrace the entire 'healthy forests' lifecycle.
- ☐ Manage competition for grazing resources.

Priority 3: Restoring trust with local communities

- ☐ Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands.
- ☐ Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.

Priority 4: Ensuring sovereignty means something

- ☐ Support tribal self-determination, self-governance, and sovereignty.
- ☐ Solidify mutual interests between the U.S. and the freely associated states and territories.

Priority 5: Generating additional revenues to support DOI & National interests

- ☐ Ensure that the public receives the full market value for the natural resources produced on Federal lands.
- ☐ Ensure that fees or costs levied for DOI services are reasonable and targeted to achieve cost recovery.
- ☐ Consider the impact of DOI decisions on economic development and job creation.

Priority 6: Protecting our people and the border

- ☐ Actively support efforts to secure our southern border.
- ☐ Ensure DOI law enforcement staffing addresses public safety risks anticipated on DOI land.
- ☐ Promote a "public service" demeanor within our law enforcement community.

Priority 7: Striking a regulatory balance

- ☐ Reduce the administrative and regulatory burden imposed on U.S. industry and the public.
- ☐ Ensure that Endangered Species Act decisions are based on strong science and thorough analysis.

Priority 8: Modernizing our infrastructure

- ☐ Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure.
- ☐ Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs.
- ☐ Prioritize DOI infrastructure needs to highlight:
 1. Construction of infrastructure;
 2. Cyclical maintenance;
 3. Deferred maintenance.

Priority 9: Reorganizing for the next 100 years

- ☐ Improve alignment and integration of the DOI organizational structure. Redistribute organizational resources (people and funding) to enhance mission achievement and improved public service.
- ☐ Improve organizational alignment with Executive Branch counterparts with major land management assets or influence.

Priority 10: Achieving our goals and leading our team forward

- ☐ Senior executives are expected to provide leadership in achieving goals of the President and the Secretary.
- ☐ The Management Team is expected to:
 1. Ensure cost-effective operations and quality service to the public;
 2. Facilitate organizational cooperation and conflict resolution;
 3. Ensure the workplace environment is conducive to employee productivity and safety;
 4. Hold individuals accountable for actions that violate DOI policies and requirements.

The proposed project does not support any of the DOI Secretary priorities, but the project is being funded for the following reasons: