

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Cornell University

STATE: NY

PROJECT TITLE: Leveraging eDNA for a National Pollinator-Solar Energy Monitoring and Research Network

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002605	DE-0010383	GFO-0010383-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination

Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

A11 Technical advice and assistance to organizations

Technical advice and planning assistance to international, national, state, and local organizations.

B3.1 Site characterization and environmental monitoring

Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Cornell University to use eDNA analyses to characterize pollinator communities at solar facilities in order to address knowledge gaps regarding pollinator interactions with solar energy facilities. Award activities would entail the use of conventional pollinator data as well, and outreach activities with industry and environmental justice advisory groups and local communities.

The proposed project would consist of three Budget Periods (BPs). In BP1 and BP2, up to 30 sites would be surveyed in order to sample pollinators and would be comprised of both solar facility sites and paired reference sites. Sites would be spread around the Northeast, Southeast, Midwest, Pacific Northwest, Southern Texas, and Indigenous Lands across the interior West.

During Tasks 2, 3, 8, and 9, the project team would carry out field sampling for years one and two. A suite of field sampling techniques would be used in order to target a wide array of taxa and are amenable to large-scale deployment across multiple sites simultaneously. Proposed sampling methods at both solar sites and reference sites

would include the following:

- 1) Collection of insect pollinators using timed, targeted sweep netting
 - a. Sweep netting would take place along 100- meter (m) flagged transects
 - b. There would be three transects per site
 - c. Species would be visually identified and would not be collected
- 2) Pan trapping and collection of pollinator specimens
 - a. Pan-trap arrays would be set up at vegetation height on adjustable poles
 - b. There would be three arrays per site
- 3) Blue-vane trapping for larger pollinator species
 - a. There would be one blue-vane trap per site
- 4) Two eDNA collection methods
 - a. Artificial flowers deployed at the sites would be designed to attract pollinators to collect their eDNA by rubbing on the surfaces
 - b. Cut flower heads would consist of flowers growing at the site that would also attract pollinators and the heads containing eDNA would be cut

After sampling, artificial and cut flower heads would be sent to an existing USGS lab for analyses using multiple DNA analysis methods. The award team would also carry out single-species analyses, assays for pollinator indicator species, statistical analyses, and other forms of data analysis. Some preserved insect specimens would be sent to regional insect museums.

Additionally, outreach and engagement would be performed to establish an Environmental Justice Advisory Group (EJAG) in order to implement Diversity, Equity, and Inclusion goals, such as engaging with typically underrepresented communities. The EJAG, once established, would work with the GRID Alternatives Tribal Program, an organization with existing Tribal relationships. An Industry Advisory group and a Technical Advisory Board comprised of land managers, academics, conservation groups, and industry regulators would be developed as well. Continued education and outreach activities would be made available to the public through a website.

Equipment installations would be temporary, and any resulting ground disturbance would be negligible. The transect flags (50-200 per site, depending on site size) are attached to 3 ft. thin wires that would be inserted into the soil to a depth of about 6 inches. They would be placed at the beginning of each field season and removed during the last field work event. Netting activities would be conducted around transects using nets and collection vessels consisting of glass tubes and a lab-grade chemical for sample preservation. Pan traps would consist of 3 or 4 different colored open bowls containing soapy water mounted on posts in various locations at the facilities. Bowls would sit out for 12- to 24-hour study periods 4-6 times during 3 separate growing seasons. Posts would be driven into the ground no more than a foot, and would require the permission of the site owners. Blue vane traps would be deployed over plastic trays in order to prevent spills. The solution in the trap would contain soapy water and be deployed for 48 hours. Artificial flowers and cut flower heads would be deployed for a 24-hour period each month of the field season.

The proposed project would not involve the permanent modification of existing/planned facilities or any change in the use, mission, or operation of these facilities. There are no cultural resources, critical habitats, wetlands, or floodplains within the project areas. A migratory bird nesting survey shall be completed if project activities involving ground disturbance occur between March 15 and September 15. If nests or eggs are found, the area would be cordoned off with a proper buffer until nestlings fledge.

Migratory bird species of conservation concern may be present seasonally within the project areas, as well as endangered and/or threatened insect species, such as the Rusty Patch Bumblebee and Monarch Butterfly. However, because equipment installations would be temporary, limited to standard types of noninvasive surveying tools, and result in negligible ground disturbance, DOE has determined that no impacts to species of concern are to be expected as a result of the proposed activities at this location.

The trap types are not known to collect endangered or threatened species such as the Monarch Butterfly or the Rusty Patch Bumblebee. Additionally, award team members have already obtained the U.S. Fish and Wildlife Service recommended scientific recovery permit (application form 3-200-59) in order to perform activities in the historic range of the Rusty Patch Bumble Bee. Sampling staff would be well trained in identifying species of concern, so all federally listed insect species would be immediately released if caught, and none would be taken. Any and all equipment would be placed carefully to avoid affecting any species of concern, including endangered and/or threatened vegetation species.

The proposed project would not involve the permanent modification of existing/planned facilities or any change in the use, mission, or operation of these facilities. DOE also conducted a review of potential issues related to other resources of concern, including prime farmland, and found no effects that would be expected to result from the proposed project activities.

If any additional sites or regions are to be added beyond the scope of this NEPA Determination, the recipient should contact the Program Officer as an additional NEPA review would be required.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

If during project work cultural or archaeological artifacts are encountered, the recipient shall stop the site-based activities immediately and inform the DOE Project Officer of the finding. A Class III: Intensive Cultural Resources Inventory shall be required prior to re-commencing project work.

Notes:

Solar Energy Technologies Office (SETO)
NEPA review completed by Alex Colling on 7/6/2023.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically
Signed By: **Andrew Montano**
NEPA Compliance Officer

Date: 7/24/2023

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
 Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____