Sensor and Instrument Infrastructure (SI)

NEON Research Support Services (NRSS) Request Form

Researchers may request the following or a combination of 1) access to NEON site infrastructure (e.g. towers, power, communications, etc., 2) access and coordination to sampling locations, 3) support from NEON program field staff to collect data or samples, or 4) support from NEON field staff to maintain systems and/or instrumentations installed on NEON site infrastructure. Our goal is to provide you all the services you need to complete your project from start to finish.

NEON does not own the property on which NEON infrastructure and observational plots are located. Site hosts and landowners grant access to researchers for sampling at NEON sites. Battelle can help coordinate permission in some cases; however, it is primarily the responsibility of the researcher to gain access permission, and all required local, state, and federal permits.

Science activities at NEON sampling locations must not compromise NEON measurements or impair Battelle relationships with site hosts. We are committed to the long-term study of these sampling locations, thus sample site integrity and our working relationships with site hosts are imperative. We evaluate research support requests based on the feasibility for NEON support and we carefully consider how non-destructive or destructive sampling activities impact site integrity and NEON data.

Completion of this request form will facilitate the evaluation and pricing estimate of this MDP NEON Research Support Services Request and should be completed for projects seeking funding and those with funding already secured.

Before creating your request, thoroughly review the [NEON Research Support Services User Guide](https://www.neonscience.org/sites/default/files/NEON%20Research%20Support%20Servicess%20User%20Guide%20v20240710.pdf). Complete all parts of this Request Form. Additional information deemed relevant by the PI to the request may also be provided, as appropriate.

For projects seeking funding, submit this request form at least 6 weeks prior to any institution or funding agency deadlines. For funded projects, submit this request form at least 8 weeks prior to the start of data collection. For target of opportunity requests, submit as soon as possible and efforts will be made to conduct a quick evaluation and pricing of the request.

**Submit this request and any questions to** ResearchSupport@BattelleEcology.org

# Section 1: Contact Information

* List all investigators, their roles, affiliations, emails and phone numbers.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Investigators | Role | Affiliation | Email | Phone |
|  | PI |  |  |  |
|  | Co-I |  |  |  |
|  | Co-I |  |  |  |
|  | Co-I |  |  |  |

* Who should be the Primary Contact for this request?

# Section 2: Project Overview

## 2.1 Type of Request

* Is this a Standard Request or Target of Opportunity Request?

|  |  |
| --- | --- |
| [ ]  Standard | [ ]  Target of Opportunity (expedited review) |

* What services are you requesting? (check all that apply)

|  |  |  |  |
| --- | --- | --- | --- |
| [ ]  Site Coordination | [ ]  NEON Field Staff Support | [ ]  Instrument Installation Support | [ ]  Instrument Maintenance Support |

* What date do you need the budget, and/or Letter of Support/Collaboration from NEON?
	+ This date should be the date your institution needs this information (which may be sooner than the proposal deadline).

## 2.2 Funding

* Funding Status: Funding Secured or Seeking Funding

|  |  |
| --- | --- |
| [ ]  Funding Secured | [ ]  Seeking Funding |

## 2.3 Funding Agency and Program

|  |  |  |
| --- | --- | --- |
| Funding Agency | Program | Solicitation Website |
|  |  |  |

* What is the expected funding notification date? (mm/dd/yyyy)

## 2.4 Project Title

* For proposals seeking funding, this title should match the grant proposal title. The title will be used in the Letter of Collaboration/Support. Draft titles are acceptable; however, you need to provide notification of the final title prior to the Letter of Support/Collaboration being provided.

## 2.5 Project Summary

* Provide a quick overview of the proposed research project (one sentence to one paragraph).

## 2.6 Technical Objectives:

* Provide technical objectives for the project as related to the NEON Research Support Services requests.

## 2.7 Proposed use/role of NEON:

* Describe the research activity and why access to NEON’s sites, services or infrastructure is required.
* If needed, please describe the activity NEON field personnel will perform.

## 2.8 Duration of THE project:

* What are your planned start and end dates of your project’s interaction with Battelle & the NEON program? Start and end dates will be used to encompass the entirety of the collaboration with Battelle as needed for contracting purposes. If applicable, be sure to include sufficient time to receive final invoices for work completed prior to your funding ending.

|  |  |
| --- | --- |
| Start Date:  | End Date:  |

## 2.9 Duration of Field Work:

* How long will the field work last? (years, months or days)
* For the timeline above, will this research project be continuous or intermittent?

## 2.10 Proposed Field collection Start Date:

* What date are you proposing to start data collection? Is this timeframe flexible? (mm/dd/yyyy)

## 2.11 Proposed Field collection End Date:

* What date are you proposing to complete data collection? (mm/dd/yyyy).

## 2.12 NEON Sites ([Site list link](https://www.neonscience.org/field-sites/field-sites-map/list))

* At which NEON site(s) do you propose to conduct the research? Are you unsure or interested in advice for selecting sites? Please use the four-letter site code (see Table at end of document for a list of NEON sites and site ID codes).

# Section 3: Technical and Logistical Requirements

## 3.1 Description of proposed activities

* What is the research question and why does it require the use of NEON SI Infrastructure?
* What data or samples will be collected and by what methods?
* Describe the instrument and measurement technology to be deployed

## 3.2 Proposed NUMBER and location

* How many units will be deployed per site?
* What location(s) within the site will the instrument(s) be placed? (e.g. soil plots, tower, instrument hut)
* Where exactly on the NEON tower or other infrastructure does the assembly need to be located? (e.g. tower height, soil depths, etc.)
* What are the dimensions of the required space for the instrument?
* Are there space or clearance requirements around the instrument or enclosure that needs to be considered? (e.g. 24 inches in front to open the enclosure to access the datalogger, 1 meter away from tower structure, etc.)

## 3.3 Instrument deployments

* How many separate instrument deployments are being requested?
* When during the duration of the project will these deployments occur? (e.g. installed during spring, and removed before winter, year-round, etc.)
* If multiple deployments, what is the proposed duration (# of weeks or months) for each deployment?

## 3.4 Instrumentation

* What is the make and model instrument or sensor to be deployed? Please also list associated equipment, dataloggers, equipment.
* Please provide a web link to the instrument manual or specifications sheet. Or email a PDF of the manual along with this request.

## 3.5 power requirements

* What voltages does your sensor, computer, instrument, require? (e.g. 240VAC, 120VAC, 24VDC, 12 VDC, etc.). List out each instrument or device and their voltage requirements.
* If the instrument uses 120VAC will it also work with 240VAC? Many modern instruments that operate on 120VAC will also operate on 240VAC – check with the manual or manufacturer.
* How many amps does your sensor, computer, instrument, require? (e.g. 12 amps @ 13.5 VDC, 5 amps @ 240VAC, etc.). List out each instrument or device and their amperage requirements.
* What is the maximum power demand for the entire system? (e.g. all components including communications, heaters, dataloggers, etc.)

## 3.6 mechanical interface

* How do you propose this instrument is mounted to the infrastructure?
* Would you require assistance from NEON engineers to assist with mounting, or would you be able to fabricate appropriate mounts?
* Do you have any photos of this instrument attached or installed to similar infrastructure? Please insert photos here or at the end of the document.

## 3.7 Data acquisition interface

* What is the data sampling frequency? (e.g. 10 Hz, 30 minutes, etc.)
* Where will the data be collected and/or stored? (e.g. locally on SD cards, sent via Ethernet to auxillary computer, etc.)
* What is the data format? (e.g. text, CSV, binary, compressed zip files, etc.)

## 3.8 Command and control

* Does the instrument require and NEON-supplied command and control? (e.g. power on/off, heating on/off, condition specific on/off, etc.)

## 3.9 network communications

* Does the instrument need to be connected to the Internet?
* If the instrument is connected to the Internet, what is the estimated amount of data to be transmitted? (e.g. 13MB every 30 min, 25GB/month, etc.)
* Does the instrument require remote access?
* If remote access is required, what is the remote access method? (e.g. VNC, Remote Desktop, GoToMyPC, etc.)

## 3.10 Electronic interference

* Has this instrument been tested for radio frequency (RF) emissions?
* If there are RF emissions, what are these frequencies?
* Is this instrument affected by other RF emissions?
* If affected by RF emissions, how?
* Has this sensor been tested for conducted emissions?

## 3.11 Field calibration

* Is regular field calibration of the instrument required?
* If regular field calibration required, what standards will be used?
* What frequency will the instrument need to be calibrated at? (e.g. monthly, annually, none, etc.)
* If calibration supplies are required, how will they be made available?

## 3.12 installation

Any work conducted on or around NEON infrastructure will require NEON personnel to be present regardless of who will be doing the installation.

* Will you be doing the installation of the sensor yourself, or are you expecting NEON personnel to do the installation?
* How long do you anticipate installation to take (hours)?
* NEON personnel will assist with installation on NEON infrastructure, how many personnel would you anticipate needing.

## 3.13 Maintenance plan

Standard NEON preventive maintenance schedule and site visits for NEON’s Instrumented Systems is about once every 2 weeks.

* Does this instrument require regular preventive maintenance?
* What frequency of maintenance would be required?
* What consumable materials are required, and will you provide preventive maintenance consumables?
* Describe your plan for responding to instrument failure? (e.g. send spare for replacement, remove and send back for repair, etc.)

## 3.14 Site work by NEON field staff

* How many NEON field staff do you anticipate or are proposing will be needed for this activity?
* How frequently would NEON field staff need to visit each location, i.e., number of times per day, per week, per month?
* Will visits be at regular and pre-planned intervals, or irregular and unpredictable?

## 3.15 Site visits by PI research personnel

Most NEON field sites allow for PI research personnel to directly visit and work at a site. If you propose this, please complete the following questions. Please note site work and visits should be coordinated through the Field Science Manager in the domain office.

* When during the year would the site visits occur?
* How frequently would PI research personnel visit each sampling location at a field site?
* Will visits be at regular and pre-planned intervals, or irregular and unpredictable?
* How many individuals would normally visit at any one time?
* Do you anticipate work to occur in close proximity of in-situ sensors (tower or in-stream sensors)?
* Do you anticipate work to occur in close proximity of other NEON sampling locations?
*

## 3.16 Additional Research equipment

* To establish research plots or other units, will long-term infrastructure (including plot markers) need to be installed? If so, please describe (including number, size, and material).

## 3.17 Decommissioning/clean-up/restoration

* Describe your plan for decommissioning the research sites, including removing all markers, equipment, etc., and to the extent possible, restoring research sites to their original state.

# Section 4: DATA management

Requesters are required to abide by [NEON’s Data Policy](http://www.neonscience.org/assignable-assets).

* Describe how data and/or metadata will be collected and stored.
* Describe how and when will data or data derived from samples and specimens collected be made publically available.

# SECTION 5: SAFETY and training

* Describe your plans for training PI research personnel to ensure that they operate in a safe and environmentally compliant manner, and that they understand any guidelines and restrictions pertaining to conducting the research at NEON sites.
* Describe your plans for training NEON field personnel on data or sample collection, relevant protocols, and other instructions required for field sampling or observations.

# section 6: permitting

**NEON does not own the property on which NEON infrastructure and observational plots are located.**

Check the Field Site Coordination website below for a link to the NEON Research Support Services Site Access Information spreadsheet. The spreadsheet provides contact information for obtaining appropriate permissions and permits as well as additional information about which NEON field sites are open to additional non-NEON research activities.

NEON Field Site Coordination website:

<https://www.neonscience.org/resources/research-support/field-site-coordination>

Researchers are required to obtain access and use permits from the site host and any applicable local, state, and federal agencies. In some situations, NEON can assist with this. Also, in a small number of situations NEON permits will suffice if NEON staff are completing the activity.

Thank you for completing this application.

In addition to the above information, we may be able to assist:

* Evaluating the potential impact of proposed activities on NEON measurements and observations.
* Selecting optimal locations for your research objectives ensuring efficient use of resources and high-quality data.
* Contacting site hosts to coordinate field sampling at NEON sites.
* Finding additional information about field sites, permitting or other questions.

**Submit this request and any questions to** **researchsupport@battelleecology.org**

# NEON Sites

|  |  |
| --- | --- |
| **Terrestrial** | **Aquatic** |
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| --- | --- | --- |
| **Domain #** | **Site ID** | **Site Name** |
| D01 | BART | Bartlett Experimental Forest |
| D01 | HARV | Harvard Forest |
| D02 | BLAN | Blandy Experimental Farm |
| D02 | SERC | Smithsonian Environmental Research Center |
| D02 | SCBI | Smithsonian Conservation Biology Institute |
| D03 | OSBS | Ordway-Swisher Biological Station |
| D03 | DSNY | Disney Wilderness Preserve |
| D03 | JERC | Jones Ecological Research Center |
| D04 | LAJA | Lajas Experimental Station |
| D04 | GUAN | Guanica Forest |
| D05 | TREE | Treehaven |
| D05 | UNDE | UNDERC |
| D05 | STEI | Steigerwaldt Land Services |
| D06 | KONA | Konza Prairie Biological Station - Relocatable |
| D06 | KONZ | Konza Prairie Biological Station |
| D06 | UKFS | The University of Kansas Field Station |
| D07 | ORNL | Oak Ridge |
| D07 | MLBS | Mountain Lake Biological Station |
| D07 | GRSM | Great Smoky Mountains National Park, Twin Creeks |
| D08 | LENO | Lenoir Landing |
| D08 | TALL | Talladega National Forest |
| D08 | DELA | Dead Lake |
| D09 | WOOD | Woodworth |
| D09 | NOGP | Northern Great Plains Research Laboratory |
| D09 | DCFS | Dakota Coteau Field School |
| D10 | CPER | Central Plains Experimental Range |
| D10 | STER | North Sterling, CO |
| D10 | RMNP | Rocky Mountain National Park, CASTNET |
| D11 | CLBJ | LBJ National Grassland  |
| D11 | OAES | Klemme Range Research Station |
| D12 | YELL | Yellowstone Northern Range (Frog Rock) |
| D13 | NIWO | Niwot Ridge Mountain Research Station |
| D13 | MOAB | Moab |
| D14 | SRER | Santa Rita Experimental Range |
| D14 | JORN | Jornada LTER |
| D15 | ONAQ | Onaqui |
| D16 | WREF | Wind River Experimental Forest |
| D16 | ABBY | Abby Road |
| D17 | TEAK | Lower Teakettle |
| D17 | SOAP | Soaproot Saddle |
| D17 | SJER | San Joaquin Experimental Range |
| D18 | TOOL | Toolik |
| D18 | BARR | Barrow Environmental Observatory |
| D19 | BONA | Caribou-Poker Creeks Research Watershed |
| D19 | DEJU | Delta Junction |
| D19 | HEAL | Healy |
| D20 | PUUM | Pu'u Maka'ala Natural Area Reserve |

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| --- | --- | --- |
| **Domain #** | **Site ID** | **Site Name** |
| D01 | HOPB | Lower Hop Brook |
| D02 | LEWI | Lewis Run |
| D02 | POSE | Posey Creek |
| D03 | FLNT | Flint River |
| D03 | SUGG | Ordway-Swisher Biological Station - Suggs Lake |
| D03 | BARC | Ordway-Swisher Biological Station - Barco Lake |
| D04 | GUIL | Rio Guilarte |
| D04 | CUPE | Rio Cupeyes |
| D05 | LIRO | Little Rock Lake |
| D05 | CRAM | Crampton Lake |
| D06 | MCDI | McDiffett Creek |
| D06 | KING | Kings Creek |
| D07 | WALK | Walker Branch |
| D07 | LECO | LeConte Creek |
| D08 | MAYF | Mayfield Creek |
| D08 | TOMB | Lower Tombigbee River at Choctaw Refuge |
| D08 | BLWA | Black Warrior River near Dead Lake |
| D09 | PRPO | Prairie Pothole  |
| D09 | PRLA | Prairie Lake at Dakota Coteau Field School |
| D10 | ARIK | Arikaree River |
| D11 | BLUE | Blue River |
| D11 | PRIN | Pringle Creek |
| D12 | BLDE | Blacktail Deer Creek |
| D13 | WLOU | West St Louis Creek |
| D13 | COMO | Como Creek |
| D14 | SYCA | Sycamore Creek |
| D15 | REDB | Red Butte Creek |
| D16 | MART | Martha Creek |
| D16 | MCRA | McRae Creek |
| D17 | TECR | Teakettle 2 Creek |
| D17 | BIGC | Upper Big Creek |
| D18 | TOOK | Toolik Lake |
| D18 | OKSR | Oksrukuyik Creek |
| D19 | CARI | Caribou Creek, Caribou-Poker Creeks ResearchWatershed |

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