# **Attachment B**

# **The National Aquatic Resource Surveys Data Analysis Innovation Challenge**

**Phase 2: Requirements and Evaluation Criteria**

## **Requirements:**

To be eligible to win a cash prize, applicants must meet the following requirements:

* Have submitted an Intent to Participate application. For information on the Intent to Participant requirements, see Attachment A.
* Use NARS data from one or more surveys (i.e. data from at least one of the following: National Lakes Assessment (NLA) 2007, National Rivers and Streams Assessment (NRSA) 2008-2009, National Coastal Condition Assessment (NCCA) 2010, National Wetlands Condition Assessment (NWCA) 2011, NLA 2012, NRSA 2013-2014, NCCA 2015, NWCA 2016, NLA 2017, NRSA 2018-2019)
* Address questions at the national, regional or other subpopulation area of interest such that results are applicable broadly.
* Complete and attach the Challenge Application form with your Research Project/Report submission (see Attachment C).
* Identify the Challenge Category under which the project is to be evaluated (choose one only).
	1. Meets any other requirements of the individual Category selected (see the main Challenge description on Challenge.gov).
* Submit a Research Project/Report that
	1. Includes the following items
		+ Title
		+ Names and affiliations of the author/coauthor(s)
		+ Clear identification of which NARS datasets were used
	2. Does not exceed 20 single-sided pages (10 double-sided) (including graphics/figures) with three additional pages allowed for references/citations. Additional pages can also be included to submit faculty support/recommendations and will not count against the page limit.
	3. Meets the following font and formatting requirements
		+ Calibri or Times New Roman font size 11 or 12.
		+ Margins are ½ inch or larger on all sides.
		+ Submitted in Word or PDF. If the submission includes a tool or application, it must be in a format that EPA can access and review. If you are unsure whether EPA will be able to access your planned tool/application, please contact us at NARS-challenge@epa.gov.
* If submitting as a student or student team include proof that authors, with the exception of academic advisors serving as co-authors, are currently enrolled in a graduate program or postdoctoral position. If EPA determines the submitted information is insufficient, the entry will still be considered but not as a student project.
* Submit your Challenge research report/project by 11:59 PM Eastern Time on September 30, 2022 to NARS-challenge@epa.gov

The Phase II submissions which meet the above requirements will be reviewed and evaluated based on the scoring criteria below.

## **Evaluation Criteria**

For details on each of the categories, see the challenge description on Challenge.gov.

### **Prize Category 1: Climate Change**

Projects in this category will use NARS data to examine questions related to climate change and its impact on the environment and human health. For example, projects may analyze changes in taxonomic communities, temperature impacts on water quality conditions, or other aspects of climate impacts. These projects may identify signals or patterns of a changing climate in the data that can be used over time to measure resiliency and the effectiveness of mitigation on the health of aquatic resources. Projects in this category may also be submitted that support the goal of conserving 30 percent of our lands and waters by 2030 that is described in the [President’s Executive Order on climate change](https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/). For example, such projects could develop analytical tools that apply data on the chemical, physical and biological integrity of waters and other factors to support prioritization of lands and waters for protection.

**Clarity and Significance of Research Question and Approach (40 points)**

* Relationship of project and results to NARS Prize Category Objectives (Climate Change) (15)
* Degree to which the application demonstrates the innovative/original nature of the project and results (10)
* Effectiveness of the technical approach used in the project/results (15)

**Project Outcomes (50 points)**

* Clarity of the results and/or products (15)
* Overall benefits of the results to the public and ability to inform decision making at community, regional, national levels (20)
* Degree to which the application demonstrates how the results advance water quality research and knowledge and how they will be disseminated (15)

**Use of NARS data (10 points)**

* Effectiveness of NARS data usage for the project outcome (the more integral the use of NARS data is in the project, the more points awarded)

**Bonus Points: (total of 10 possible bonus points)**

* 1. Weights/Population estimates. One or the other of the point categories below, not both. If both apply the proposal will have up to 5 points added.
		+ Proper application of statistical survey weights in the analysis conducted (5 points)

Or

* + - Use of population estimates from NARS reports or dashboards (2 points)
	1. Multiple surveys
		+ Application of NARS data from more than one waterbody type (coastal, rivers/streams, lakes, wetlands) in the analysis (5 points)

### **Prize Category 2: Environmental Justice/Equity**

Projects in this category will address questions related to Environmental Justice (EJ). Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. OW is inviting analyses into patterns in the distribution of healthy or degraded waters linking environmental information from NARS with socio-economic data, indicators of access to sanitation, metrics from EJ Screen (https://www.epa.gov/ejscreen), etc.

**Clarity and Significance of Research Question and Approach (40 points)**

* Relationship of project and results to NARS Prize Category Objectives (Environmental Justice) (10)
* Degree to which the application incorporates social science research as well as environmental science/research (5)
* Degree to which the application demonstrates the innovative/original nature of the project and results (10)
* Effectiveness of the technical approach used in the project/results (15)

**Project Outcomes (50 points)**

* Clarity of the results and/or products (15)
* Overall benefits of the results to the public and ability to inform decision making at community, regional, national levels (20)
* Degree to which the application demonstrates how the results advance water quality research and knowledge and how they will be disseminated (15)

**Use of NARS data (10 points)**

* Effectiveness of NARS data usage for the project outcome (the more integral the use of NARS data is in the project, the more points awarded)

**Bonus Points: (total of 10 possible bonus points)**

1. Weights/Population estimates. One or the other of the point categories below, not both. If both apply the proposal will have up 5 points added.
	* + Proper application of statistical survey weights in the analysis conducted (5 points)

Or

* + - Use of population estimates from NARS reports or dashboards (2 points)
1. Multiple surveys
	* + Application of NARS data from more than one waterbody type (coastal, rivers/streams, lakes, wetlands) in the analysis (5 points)

### **Prize Category 3: Nutrient Assessment**

Projects in this category will contribute to the science of assessing nutrients in our nation’s waters at the national and regional scales. The Office of Water welcomes projects that address questions related to developing and applying innovative approaches for setting nutrient benchmarks that can be used to assess water quality at the national/regional scales in support of the Clean Water Act 101(a) objectives (restore and maintain the chemical, physical, and biological integrity of the Nation's waters) and the 101(a)(2) interim goal (fishable/swimmable). OW also welcomes projects that analyze patterns among NARS chemical, physical and biological data; landscape factors; and/or human activities to support prioritization of protection and restoration activities; or explore changes and trends in nutrient concentrations. Projects in this category must address questions that cover broad geographic, multi-jurisdictional areas such as aggregate ecoregions or large river basins, etc.

**Clarity and Significance of Research Question and Approach (40 points)**

* Relationship of project and results to NARS Prize Category Objectives (Nutrients) (15)
* Degree to which the application demonstrates the innovative/original nature of the project and results (10)
* Effectiveness of the technical approach used in the project/results (15)

**Project Outcomes (50 points)**

* Clarity of the results and/or products (15)
* Overall benefits of the results to the public and ability to inform decision making at community, regional, national levels (20)
* Degree to which the application demonstrates how the results advance water quality research and knowledge and how they will be disseminated (15)

**Use of NARS data (10 points)**

* Effectiveness of NARS data usage for the project outcome (the more integral the use of NARS data is in the project, the more points awarded)

**Bonus Points: (total of 10 possible bonus points)**

* 1. Weights/Population estimates. One or the other of the point categories below, not both. If both apply the proposal will have up to 5 points added.
		+ Proper application of statistical survey weights in the analysis conducted (5 points)

Or

* + - Use of population estimates from NARS reports or dashboards (2 points)
1. Multiple surveys
	* + Application of NARS data from more than one waterbody type (coastal, rivers/streams, lakes, wetlands) in the analysis (5 points)

### **Prize Category 4: Innovative and next generation of water quality assessment**s

Projects in this category will contribute innovative approaches to assessing national/regional water quality including the next generation of data analysis approaches that could be used in NARS (methods, benchmarks, etc) or other federal, state, tribal and local monitoring programs. Projects in this category could include but are not limited to such topics as developing and evaluating novel tools for assessing water quality (e.g., methods, indicators, models) and/or approaches for assessing statistical survey results (condition, changes, trends); correlating natural or human activities with water quality conditions; approaches that combine temporally intensive datasets with the spatially representative NARS data; analyses that use NARS and other data to predict or extrapolate water quality conditions to unmonitored waters; analyses of cumulative risks posed by exposure to mixtures of contaminants; determining likely sources of poor water quality or factors related to protecting good water quality, etc.

**Clarity and Significance of Research Question and Approach (40 points)**

* Relationship of project and results to NARS Prize Category Objectives (15)
* Degree to which the application demonstrates the innovative/original nature of the project and results (10)
* Effectiveness of the technical approach used in the project/results (15)

**Project Outcomes (50 points)**

* Clarity of the results and/or products (15)
* Overall benefits of the results to the public and ability to inform decision making at community, regional, national levels (20)
* Degree to which the application demonstrates how the results advance water quality research and knowledge and how they will be disseminated (15)

**Use of NARS data (10 points)**

* Effectiveness of NARS data usage for the project outcome (the more integral the use of NARS data is in the project, the more points awarded)

**Bonus Points: (total of 10 possible bonus points)**

* 1. Weights/Population estimates. One or the other of the point categories below, not both. If both apply the proposal will have up to 5 points added.
		+ Proper application of statistical survey weights in the analysis conducted (5 points)

Or

* + - Use of population estimates from NARS reports or dashboards (2 points)
	1. Multiple surveys
		+ Application of NARS data from more than one waterbody type (coastal, rivers/streams, lakes, wetlands) in the analysis (5 points)