Special Projects Competition

Measuring the Ecological and Economic Effects of Existing and Reefed Outer Continental Shelf Facilities in the Gulf of Mexico on Recreational Fishing

SPECIAL PROJECTS "L" ANNOUNCEMENT

Competition:
Measuring the Ecological and Economic Effects of Existing and Reefed Outer Continental Shelf Facilities in the Gulf of Mexico on Recreational Fishing

Closing Dates and Deadlines:
May 6, 2021 at 11:59 PM Eastern Time

Eligible Sea Grant Programs:
This competition is open to all Sea Grant programs. The project must take place within the United States or territories or their respective waterways. The focus must be on the Gulf of Mexico and neighboring U.S. States, but considering national economic impacts. The lead PI must be from an institution within a state bordering the Gulf of Mexico.

Award Time Frame:
The proposed start date should be no earlier than September 1, 2021, with projects to be completed no later than two years after the project start date.

Funding Availability:
The National Sea Grant Office (NSGO), in partnership with the U.S. Department of the Interior's Bureau of Safety and Environmental Enforcement (BSEE), anticipates that up to **$800,000** of federal funds will be available to a Sea Grant Program in order to support a research project measuring the ecological and economic effects of recreational fishing on existing and reefed outer continental shelf facilities. The NSGO anticipates making one award. No matching funds are statutorily required for this competition.

Project Description (program priorities):
The objective of the project is to support studies that contribute to future development of a decision support tool that can evaluate the economic contribution and value of recreational fishing attributed to the offshore energy facilities on the Gulf of Mexico (GOM) Outer Continental Shelf (OCS).[1] The future decision support tool is intended to allow GOM OCS resource managers to estimate the economic

[1] Economic contribution, also known as "economic impact," refers to the economic activity and jobs supported by angler spending. See, for example, Court, C.D., Hodges, A.W., Clouser, R.L. and Larkin, S.L., 2017. Economic impacts of cancelled recreational trips to Northwest Florida after the Deepwater Horizon oil spill. Regional Science Policy & Practice, 9(3), pp.143-164.
Economic value measures what fishing is worth to anglers beyond the amount they actually spend. See, for example, Whitehead, J.C., Haab, T., Larkin, S.L., Loomis, J.B., Alvarez, S. and Ropicki, A., 2018. Estimating lost recreational use values of visitors to northwest Florida due to the Deepwater Horizon oil spill using cancelled trip data. Marine Resource Economics, 33(2), pp.119-132.

contribution and value of OCS facilities under different configurations (e.g., status quo configuration and alternative configurations with some facilities converted to artificial reefs and some facilities removed from the OCS for scrapping and recycling). Information generated by this future decision support tool should also foster engagement with facility representatives, other OCS user groups, and the public. The present competitive opportunity represents an initial step towards enabling the development of that tool.

A successful project will result in functioning models and associated code by which scenarios of numbers and location of existing, reefed and removed rigs will yield an estimate of angler expenditures, economic contribution and economic value compared with a baseline analysis. All model code, documentation and datasets shall be provided. A final report describing the approach taken, data and description of model findings shall be presented upon completion.

Background: Offshore Energy Facilities in the Gulf of Mexico OCS

During offshore energy operations on the GOM OCS, the seafloor around activity areas becomes the repository of temporary and permanent equipment and facilities (e.g., caissons, jacketed structures, and floating/moored platforms). These facilities, especially their steel frames or "jackets" that extend from the seabed up to the sea surface to support the decks above, become habitats for marine life shortly after installation. As a facility ages, the number and kinds of fish and other marine organisms taking up residence around and on the structure increases, with the structure essentially forming an artificial reef.[2] The presence of several, desirable fish species makes OCS facilities a desirable target for recreational anglers. This is particularly the case in Texas and Louisiana where OCS facilities are generally closer to shore, easier targets for less-savvy navigators, and often provide opportunities for mooring.

Since oil and gas operations first began in Federal waters in 1947, there have been over 7,070 offshore energy facilities installed on the GOM OCS, with the majority concentrated off the Louisiana and Texas coasts. Lease agreements and OCS Lands Act (OCSLA) regulations mandate that energy companies decommission and remove OCS facilities within one year of lease termination or after a structure is no longer useful for operations. Therefore, over 5,300 facilities have already been removed, with just over 1,775 remaining today (see **Figure 1**). Up until 2001, the number of annual facility installations was generally greater-than or kept pace with annual facility removals, outside of a few years with hurricane events that led to increased facility damage and removals (see **Figure 2**). In the past five years, facility installations have been in the single digits as OCS shelf operations have decreased in response to lower oil prices.

[2] Ajemian, M.J., Wetz, J.J., Shipley-Lozano, B., Shively, J.D. and Stunz, G.W., 2015. An analysis of artificial reef fish community structure along the northwestern Gulf of Mexico shelf: potential impacts of "Rigs-to-Reefs" programs. PloS one, 10(5), p.e0126354.

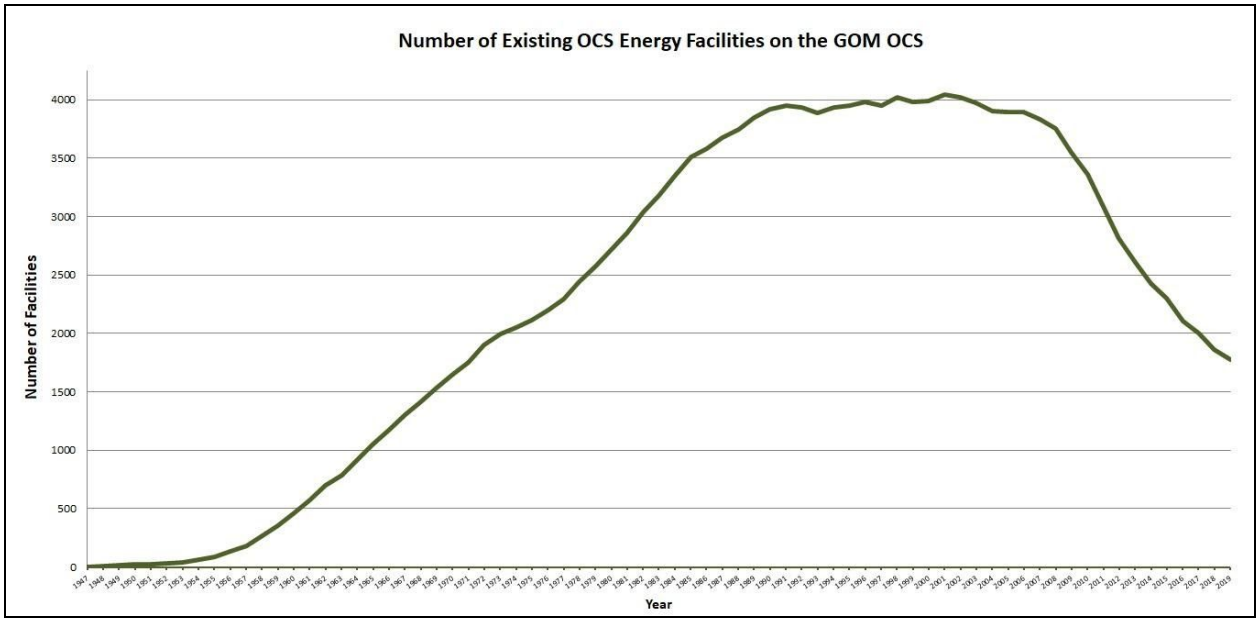


Figure 1. Number of Existing OCS Energy Facilities on GOMR OCS since 1947.

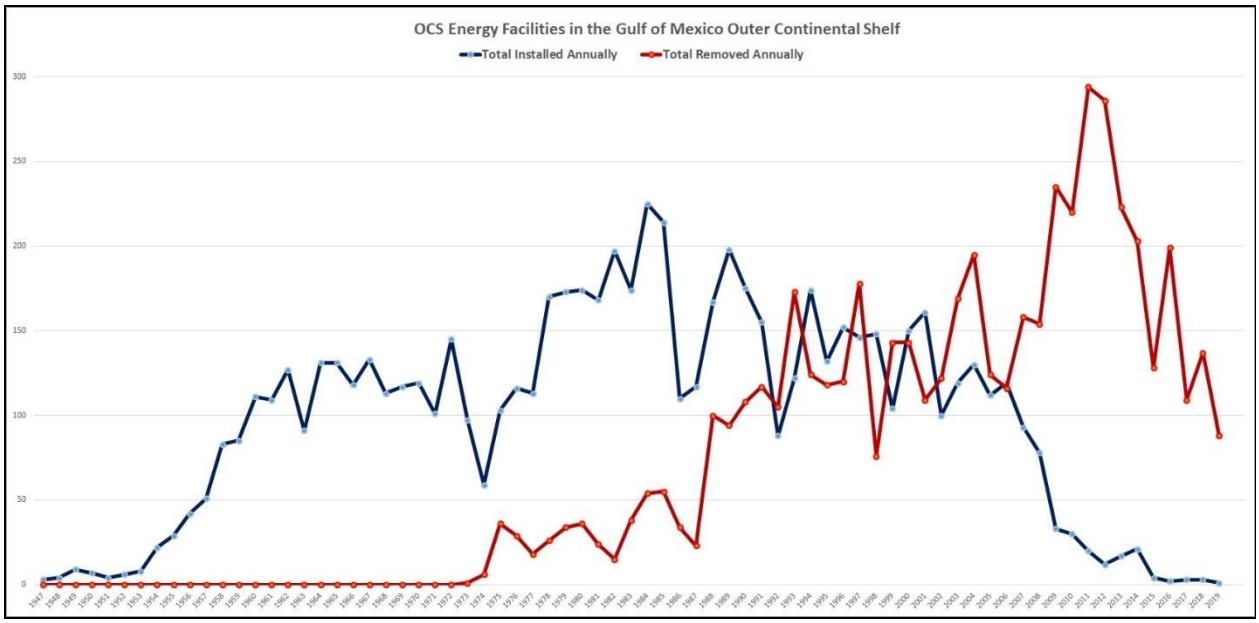


Figure 2. Number of OCS Energy Facilities Installed Versus Removed on GOMR OCS since 1947.

Of the 5,300 facilities decommissioned, over 550 have been allowed to have their associated jackets left on the Federal OCS and used as reef material through the Rigs-to-Reefs (R2R) Program. Under the R2R Program, the Bureau of Safety and Environmental Enforcement (BSEE) can grant a departure from the removal requirement in the OCSLA regulations provided that: 1) the structure becomes part of a state artificial reef program that complies with the National Artificial Reef Program; 2) the state agency acquires necessary U.S. Army Corps of Engineers permits and accepts title and liability for the reefed structure; and 3) U.S. Coast Guard navigational requirements are satisfied. Depending on the location, water depth, and structure type, the R2R project may be approved to allow the facility's jacket to be: 1) abandoned-in-place (i.e., standing upright with the base remaining pinned to the seabed), 2)

toppled-in-place, or 3) removed and set at another location, generally at an established reef site. The reefed jackets continue to provide habitat and support the fish assemblages that draw recreational anglers.

For-hire operators (i.e., charter and head boats) and recreational anglers generally support the R2R program and have expressed concern about the decline in the number of OCS energy facilities made available for fishing, especially in response to BSEE's *Idle Iron* policy. "Idle Iron," as clarified in BSEE's Notice to Lessees and Operators (NTL) No. 2018-G03, refers to facilities on active leases that are "no longer useful for operations" and subject to removal to reduce the threat to the environment and potential financial liabilities if destroyed in a future event, such as a hurricane.

Compared to economic studies, there are numerous studies of the ecological effects of OCS facilities.[3] In the most recent study on the economics of recreational fishing on OCS facilities, Hiett and Milon (2002) found that in 1999 about 22% of all GOM recreational boat fishing from Alabama through Texas occurred within 300 feet of an OCS facility or an artificial reef created from such structures.[4] Anglers fishing near OCS facilities spent nearly 50% more per year on average than anglers who did not fish on reefs. This suggests that OCS facilities were an important driver of economic spending on recreational fishing in 1999. However, this study is based on observations from over twenty years ago and does not measure the economic value of OCS facilities in recreational fishing or how economic value might change if more facilities are reefed or removed.

Research Questions to be Addressed Regarding Existing and Reefed OCS Facilities and Recreational Fishing Economics

Methodology

In order to adequately address how the economic contribution and value of recreational fishing are affected by existing, reefed and removed facilities, it is necessary to be able to predict how fish distribution and productivity is impacted and how recreational anglers respond to those distribution and productivity changes.

Necessary Components

The approach should utilize the best scientific data and models available to address the following three key components:

1) What, if any, change in productivity can be expected in key recreational target species as the number and spatial distribution of existing, reefed and removed rigs change?
2) How will the spatial distribution in terms of relative abundance of key recreational target species vary due to the number and spatial distribution of existing, reefed and removed rigs?
3) How will recreational anglers respond to the predicted changes in spatial distribution of

[3] Cf. van Elden S, Meeuwig JJ, Hobbs RJ and Hemmi JM (2019). Offshore Oil and Gas Platforms as Novel Ecosystems: A Global Perspective. Front. Mar. Sci. 6:548. doi: 10.3389/fmars.2019.00548 and Snodgrass, D.J.G., Orbesen, E.S., Walter III, J.F., Hoolihan, J.P. and Brown, C.A. 2020. Potential impacts of oil production platforms and their function as fish aggregating devices on the biology of highly migratory species. Rev. Fish Biol Fisheries 30:405-422. https://doi.org/10.1007/s11160-020-09605-z

[4] Hiett, R.L. and Milon, J.W. 2002. Economic Impact of Recreational Fishing and Diving Associated with Offshore Oil and Gas Structures in the Gulf of Mexico: Final Report. OCS Study MMS 2002-010. U.S. Dept. of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. 98 pp.

key target species in terms of numbers of trips, angler expenditures, contribution to the economy, and angler value?

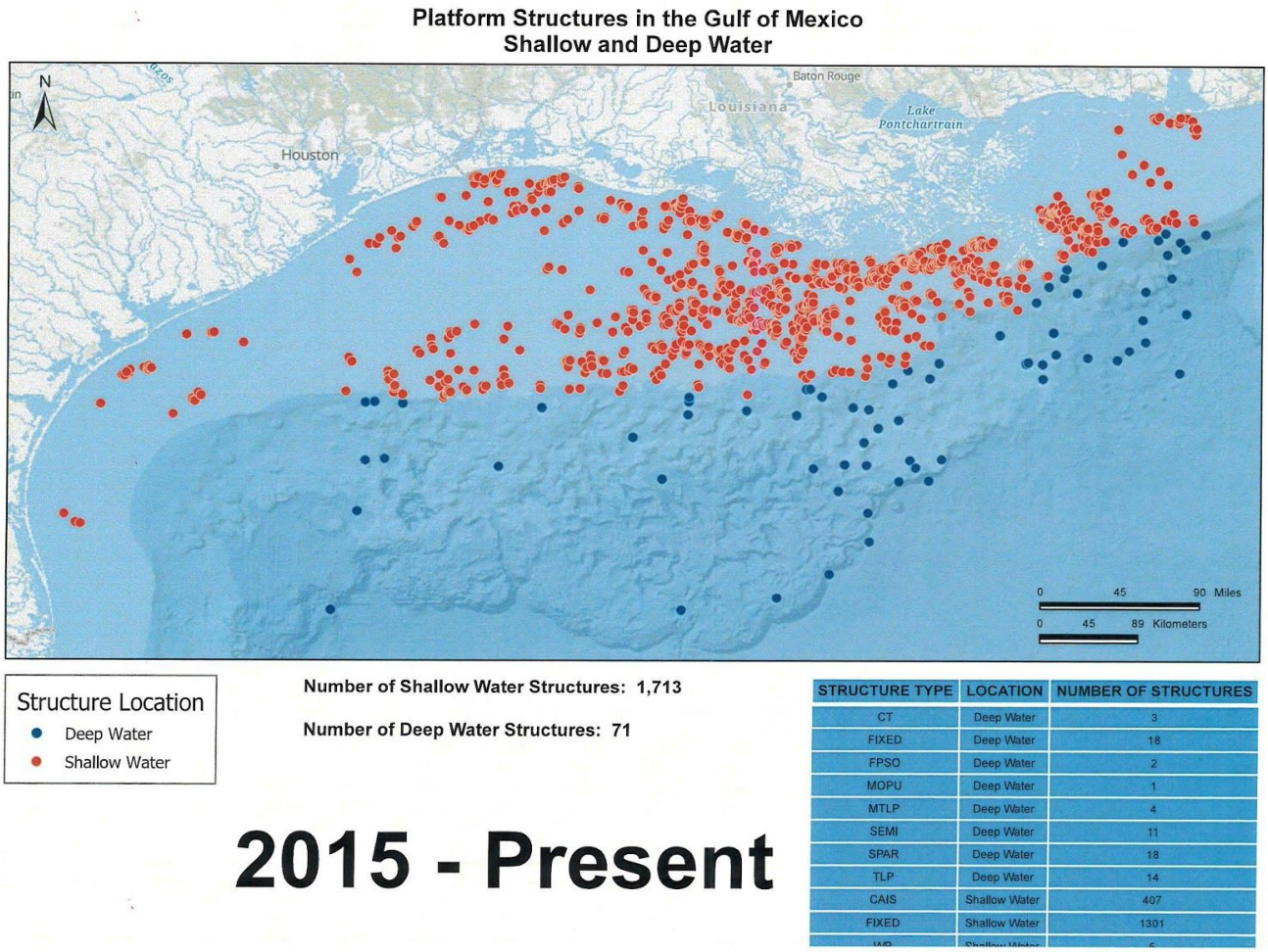
Example Modeling Approaches

There are a number of approaches, though none are specifically required, that could be used to address the above questions and facilitate the future development of a decision support tool. This RFP process is being utilized to allow proposers to put forward the most scientifically defensible and empirically tractable design. Some examples of suggested approaches to be considered alone or in combination include:

- For biological component:
  - Spatially-explicit population models
  - Spatially-explicit ecosystem models
    - Ecopath w/Ecosim, Ecospace
    - Atlantis
  - Statistical models
  - Agent-Based Models
  - Other
- For economic component:
  - Travel cost fishing demand model
  - Stated preference choice experiment
  - Agent-Based Models
  - IMPLAN or similar
  - Other

Study Area

The study area includes the entire Gulf of Mexico and neighboring U.S. states (Figure 1), but the focus is mainly on facilities near the Texas and Louisiana coasts. Anglers impacted should include residents and non-residents of states bordering the Gulf of Mexico. The measurement of economic contribution should include Gulf of Mexico states and total U.S.



STRUCTURE TYPE	LOCATION	NUMBER OF STRUCTURES
CT	Deep Water	3
FIXED	Deep Water	18
FPSO	Deep Water	2
MOPU	Deep Water	1
MTLP	Deep Water	4
SEMI	Deep Water	11
SPAR	Deep Water	18
TLP	Deep Water	14
CAIS	Shallow Water	407
FIXED	Shallow Water	1301

Figure 1. Map of current spatial distribution of shallow and deep water platform structures in the Gulf of Mexico

Application Requirements:

Consult the NOFO **NOAA-OAR-SG-2020-2006435**, available at Grants.gov, for eligible applicants, required elements of the application, how to submit, general programmatic priorities and selection factors, and other necessary information. Submit your application to **SPECIAL PROJECTS "L"** under this opportunity in grants.gov.

Discrepancies between this special project announcement and the NOFO may exist. Specific application details and instructions outlined in this special project announcement take precedence over guidelines in the NOFO.

Applications must include the following elements. Failure to adhere to these provisions may result in a delay in award processing or rejection of the application, based on the extent of the noncompliance.

1. **Project Narrative.** *The Project Narrative must include the following documents:*
    a. Project Description. The total number of pages in the project description should not exceed twenty (20) pages. Excess pages will not be included in the review. The works cited, CVs, letters of support, and current and pending support sections do not contribute to the page limit.
        i. Cover page (1 page maximum)
            - Project title and names, titles, affiliations, and contact information (email and phone) of co-PIs.
            - Budget overview - Total cost and annual breakdown of requested funding by partner.
        ii. Project abstract (1 page maximum)
        iii. Project background (suggested 3 pages)
            - Explain the specific problem(s) this project seeks to address and justify its importance.
        iv. Project objectives (suggested 1 page)
            - Provide a list of clearly defined objectives. For each objective, provide a concise statement explaining how it is aligned with the goals and priorities of this funding opportunity.
        v. Project details (suggested 6-8 pages)
            - Provide an explanation of the methods you will use to address your project objectives. Explicitly explain how this project leverages the expertise of both researchers and stakeholders.
        vi. Anticipated outcomes and deliverables (suggested 1 page)
            - What are the expected outcomes and deliverables related to the creation of data products, tools, technologies, and management practices that can be directly applied to the current and future needs of GOM OCS resource managers?
            - Will the proposal result in the development of functioning models and associated code by which scenarios of numbers and location of existing, reefed and removed rigs will yield an estimate of angler expenditures, economic contribution and economic value compared with a baseline analysis?
            - How will model code, documentation and datasets shall be provided?
            - A final report describing the approach taken, data and description of model findings should be presented upon completion.
        vii. Outreach and knowledge transfer plan (suggested 1-2 pages)
            - Provide a strategy that details how end users, beyond those who actively participate in the proposed work, will learn about the project's outcomes. Specifically, the plan should address how materials related to research findings will be developed and shared with relevant stakeholders such as the Gulf of Mexico Fishery Management Council, Gulf States Marine Fisheries Commission, OCS facility operators, and recreational fishing representatives.
        viii. Project timeline (suggested 1 page)
            - Please provide a timeline for accomplishing the proposed work, which covers the entire duration of the project. Include approximate dates for key milestones related to the proposed work, including the accomplishment of anticipated outcomes and release of deliverables.

- Applicants submitting proposals that involve the use of human test subjects should state so clearly in their application. These proposed research activities require approval of the applicant's Institutional Review Board (IRB) before such research can proceed. Applicants are responsible for obtaining IRB approval from their institution and providing that documentation to NOAA once the approval is obtained and prior to any NOAA-funded human subject testing. Proposals intending to use human test subjects should specify clearly in the timeline approximately when IRB approval will be obtained and when the testing is expected to occur.

ix. Works cited (does not count towards page limit)
- All in-text citations should be listed here.

x. Curriculum vitae (CV) for each co-PI (does not count towards page limit)
- Each person's CV should not be longer than 2 pages. Excess pages will not be included in the review.

xi. Letters of support (does not count towards page limit)
- All letters of support should be included here.

xii. Current and pending support (does not count towards page limit)
- Describe any current or pending sources of support if applicable.

b. Abbreviated Environmental Compliance Questionnaire (OMB Control No. 0648-0538)
   i. Applicants must ensure that the questionnaire is completed in full and includes detailed information regarding project location, methodology, and permits. Copies of all permits required for project activities should be included with application materials. If a permit is pending or planned, please provide this information.
   ii. The questionnaire can be found here: https://seagrant.noaa.gov/insideseagrant/Implementation.
   iii. Guidance on how to complete the questionnaire, including how to describe work that will not involve any environmental impact, can be found here: https://seagrant.noaa.gov/Portals/1/Forms/NEPA%20Questionnaire%20-%20Guidance.pdf

c. Data Management Plan
   i. All applications must include a Data Management Plan that is compliant with NOAA's Public Access to Research Results Plan. The Data Management Plan should not exceed 2 pages. The Data Management Plan should include descriptions of the types of metadata and data expected to be created during the course of the project, plans for disseminating the metadata and data to the broader community, and plans for long-term archiving of the metadata and data.

2. Budget Narrative. *The Budget Narrative must include the following budget documents (Sea Grant 90-4 Forms and Budget Justification) in the following order and format. Additional budget narrative guidance can be found here.*

a. Sea Grant 90-4 Form (OMB Control No. 0648-0362)

Sea Grant 90-4 Forms are required to provide budget breakdowns and budget justifications by year and object class for the proposal. A completed Sea Grant 90-4 Form should be completed for each project year, as well as a total budget for the entire project duration (i.e., Year 1, Year 2, Year 3, Year 4, and Years 1-4). Guidance on filling out these forms is located in the Sea Grant General

Application Guide.

b. Budget Justifications

For each year of the project, a Budget Justification is required. Each Budget Justification should explain the budget items in sufficient detail to enable review of the appropriateness of the funding requested. Each Budget Justification should be attached as a PDF to each Sea Grant 90-4 Form, as appropriate. Guidance on completing the Budget Justifications is located in the Sea Grant General Application Guide.

3. **Overall Application.** *In addition to the forms required above, standard Federal Forms and Assurances are required for the overall application and can be found with the application package on Grants.gov or on the Sea Grant website (links found below). These include:*

a. SF-424 Form (Grants.gov, OMB Control No. 4040-0004)

i. This form, titled "Application for Federal Assistance," must identify the entire funding period, as well as the federal funding amount being requested by the applicant and the non-federal matching fund amount. The form must be completed with the institution's accurate EIN and DUNS and Point of Contact, and signed by the institution's authorized representative or designee.

b. SF-424A Form (Grants.gov, OMB Control No. 4040-0006)

i. This form, titled "Budget Information - Non-Construction Programs," should describe the entire funding period in federal and non-federal dollars, for the entire application. Fill out Section B of this SF-424A form to show the overall budget breakdown by object class by year. Each federal and match year should have its own column. If there is insufficient space, an additional SF-424A Form, Extra Section B should be used (see below).

c. SF-424B Assurances (Grants.gov, OMB Control No. 4040-0007)

i. The form, titled "Assurances – Non-Construction Programs," should be completed and signed by the institution's authorized representative or designee.

d. CD-511 (Grants.gov, US Department of Commerce)

i. The form, titled "Certification Regarding Lobbying," should be completed and signed by the institution's authorized representative or designee. In some instances, the SF-LLL Disclosure of Lobbying Activities form may also be required. See the instructions on the CD-511 for further information.

e. SF-LLL (Grants.gov, OMB Control No. 0348-0046) if applicable

i. The form, titled "Disclosure of Lobbying Activities," should be completed and signed by the institution's authorized representative or designee, if appropriate.

Application Evaluation Criteria:

The following criteria will be used to evaluate proposals. Note that the weights of each criteria are different from the Evaluation Criteria laid out in the Special Projects NOFO announcement. Proposals submitted to this competition will be evaluated by at least three independent written reviews based on:

1. Importance, relevance, and applicability of the proposed project to mission goals **(30%)**:
This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, or local activities. For this opportunity, this includes the extent to which the proposal will meet the objective of supporting studies that contribute to future development of a

decision support tool that can evaluate the economic contribution and value of recreational fishing attributed to the offshore energy facilities on the GOM OCS.

2. Technical and scientific merit **(30%)**:
This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals, objectives, and data management considerations. For this opportunity, this includes:

A. Whether the proposal clearly identifies appropriate and relevant goals and objectives, and whether the timeline for the project is reasonable and in line with the award period guidelines;
B. Whether the project will deliver tangible, specific results that are attainable and measurable within the proposed time frame;
C. Whether the proposed methods and approaches to be used in the project are valid to achieve project goals.
D. Whether the data management plan is appropriate, robust, and in line with the application guidelines above.

3. Overall qualification of applicants **(15%)**:
This criterion evaluates whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project.

4. Project costs **(15%)**:
This criterion analyzes the budget to determine if it is realistic and commensurate with the project needs and time frame.

5. Outreach and education **(10%)**:
This criterion reviews whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. For this opportunity, this includes the evaluation of the quality of the outreach plan to develop materials related to research findings and share with relevant stakeholders such as the Gulf of Mexico Fishery Management Council, Gulf States Marine Fisheries Commission, OCS facility operators, recreational fishing representatives, and others.

Other Information:

Reporting:
This will be a stand-alone (i.e., non-omnibus) award for which annual progress reporting will be required.

Form of Award:
This will be a cooperative agreement with substantial involvement from BSEE and NOAA Fisheries to assist the recipient in ensuring the project results are relevant to resource management needs.

Agency Contacts:
Questions about this competition or the Special Projects Notice of Funding Opportunity (NOFO) may be sent to oar.hq.sg.competitions@noaa.gov. Please specify that your question is related to the Outer Continental Shelf Facilities Special Competition in the subject line.

Fillable versions of required Sea Grant forms can be found here:
https://seagrant.noaa.gov/insideseagrant/Implementation

Guidance for completing these forms is located in the Sea Grant General Application Guidance Document: https://seagrant.noaa.gov/Portals/1/Guidance/SeaGrantGeneralApplicationGuide.pdf