

SCOPE OF WORK

**STUDY OF ABALONE REPRODUCTIVE BIOLOGY
IN SUPPORT OF BLACK ABALONE RECOVERY
AT
SAN CLEMENTE ISLAND
(Period of Performance: 18 Months from Award)**

EPR 31466MAR23_10

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A. INTRODUCTION

Abalone are marine mollusks that were historically abundant in rocky reefs in Southern California and its offshore islands and banks. San Clemente Island (SCI) has one of the last remaining populations of Black Abalone (*Haliotis cracherodiii*) in southern California. Beginning in 1981, the mainland Black Abalone populations experienced large scale mortality events associated with withering syndrome. Eventually, populations declined dramatically throughout their range, including those on SCI. Due to the substantial decrease in population size, National Marine Fisheries Service (NMFS) listed the Black Abalone as endangered under the Endangered Species Act in January 2009 (74 FR 1937). Additionally, NMFS designated critical habitat for Black Abalone and identified the principal threats to Black Abalone as withering syndrome and associated conditions that may promote the spread of the disease (e.g., suboptimal water temperatures and introduction of infected animals into previously unaffected areas). With the Navy's implementation of the Federal Register's Black Abalone critical habitat exemption requirements to manage Black Abalone populations, the Navy avoided critical habitat designation in 2011.

Through proactive management efforts, the Navy is able to maintain both sustainable military and fleet readiness and conserve its sensitive marine resources with no net loss to the mission. This is accomplished through annual rocky intertidal and abalone population monitoring conducted by the Navy. However, additional research on larval recruitment is necessary to identify specific barriers to Black Abalone recovery. During reproduction, abalones release gametes into the ambient seawater. Larval dispersal and recruitment likely depends on coastal topography and current (Shepherd et. al. 1992). Recruitment events are likely episodic (McShane and Naylor, 1996) and rely on particular environmental conditions. This project will study the effect of ambient seawater temperatures on abalone gonadal development in order to evaluate the necessary environmental conditions required for successful spawning and recruitment.

The purpose of this agreement is to complete a non-invasive characterization of gonadal development of abalone using ultrasounds to support the recovery of endangered Black Abalone at SCI and to address some of the knowledge gaps outlined in NMFS's Recovery Plan for Black Abalone (2018). Several aspects of Black Abalone biology and life history are unknown or uncertain but important for assessing the status and recovery of the species. In particular, there is little knowledge of the species' spawning habits (e.g., habitat, seasons, and frequency) and recruitment dynamics, largely due to the difficulties associated with working in rocky intertidal habitats, the cryptic nature of newly settled larvae and juveniles, and the lack of consistent methods to spawn Black Abalone in captivity. Recovery of the species will involve addressing these data gaps to inform conservation efforts and assess the species' progress towards recovery. Specifically, this project will support Recovery Action 3.2.4. of the Recovery Plan, which directs agencies to continue research and development of captive propagation and outplanting of Black Abalone. Development of a captive propagation program would produce captive-bred animals for use in research and to artificially enhance wild populations, if needed. At this time, however, successful captive spawning has been very limited and difficult to replicate. The first priority is to determine the factors and protocols for conditioning and spawning broodstock on a regular and controlled basis.

The principal components of this cooperative agreement are to: (1) Use non-invasive methodologies to evaluate the effect of ambient ocean temperatures at SCI on gonadal development (using Red Abalone as a surrogate for Black Abalone) to inform management efforts and strategies for the conservation of the endangered species; and (2) prepare a draft and final report.

B. PURPOSE

The overall purpose of this cooperative agreement is to investigate the reproductive biology of Black Abalone to inform management efforts and strategies for the protection of the critically endangered species. All efforts in this agreement support requirements in the NMFS critical habitat exclusion.

This cooperative agreement includes two tasks. The first task is to conduct non-invasive experiments on the gonadal development of Red and/or Black Abalone. The second task is to develop a report with a summary, results, and discussion.

The objectives of this Agreement are to:

- Use non-invasive ultrasound technology to evaluate the effect of ambient ocean temperatures from SCI on

gonad development, using Red Abalone as surrogate for Black Abalone, to inform management efforts and strategies for the protection of endangered abalone.

- Complete a non-invasive characterization of gonadal development of Black Abalone using the validated ultrasound methodology.

C. LOCATION

Experiments will support the Black Abalone conservation and recovery program at Naval Auxiliary Landing Field (NALF), SCI, California. The Recipient shall have access to the equipment (e.g. ultrasound devices) and culture facilities required to conduct this study.

D. DESIGNATED REPRESENTATIVES

1. The Cooperative Agreement Administrator (CAA) is Mr. Reagan Pablo, Contract Specialist, Naval Facilities Engineering Command, Southwest (NAVFAC SW), 1220 Pacific Highway, San Diego, CA 92132-5190, telephone (619) 532-2090, and email reagan.s.pablo@navy.mil.

2. The Cooperative Agreement Technical Representative (CATR) is Dana Schrimpf (Code EV22), Marine Biologist for NAVFAC SW, Environmental Corp, 1220 Pacific Highway, San Diego, CA 92132. Phone (619) 532-2803; email dana.schrimpf@navy.mil.

The CATR is responsible for ensuring that all work is performed per the requirements and specifications outlined in this Cooperative Agreement, and that the work performed, including all written reports and professional services are of an acceptable technical quality. For this Cooperative Agreement, the CATR shall be the first and primary point of contact for the Recipient and Installation Representative (including their respective representatives or staffs) regarding any inquiries, questions, concerns, and issues related to the implementation of the requirements and specifications of this Cooperative Agreement. The CATR has no authority to make any changes to this Cooperative Agreement, only the CAA may affect any change to this Cooperative Agreement.

3. The U.S. Commander, Pacific Fleet Representatives are:

Kimberly O'Connor, Conservation Program Manager (Code N465)
U.S. Pacific Fleet, Environmental Readiness Division
Phone (619) 545-9339; email: kimberly.oconnor@navy.mil.

The Pacific Fleet Representative is responsible for providing the CAA, via the CATR, the technical requirements for this Cooperative Agreement's scope of work specifications. The Pacific Fleet Representative has no authority to make any changes to the Cooperative Agreement, only the CAA may affect any change to this Cooperative Agreement. The Pacific Fleet Representative has no authority to direct or change any work identified in this Cooperative Agreement.

4. Any change in scope of work must be issued to the Recipient, in writing, by the Grants Officer to be binding on the government. No government employee has authority to change this Cooperative Agreement by oral or written directives, instructions, commitments and/or acceptances or any other manner.

5. The Recipient will designate at time of proposal submission the individual within their organization who is authorized to negotiate with the Cooperative Agreement Administrator. The designation will stipulate the individual's authority to commit the Recipient.

6. For the purposes of this Agreement, the term Recipient shall mean **TBD**.

E. PERIOD OF PERFORMANCE

The proposed period of performance for the CA consists of a 18 month Base Period and one (1) 18 month Option Task. The end date is the anticipated date that the final report is accepted by the Government. However, the parties

may extend the term of the CA by written modification. Total duration of this Agreement, including Option Task 1 shall not exceed 36 months. The exercise of the Option Task is subject to the availability of funds and may be awarded unilaterally.

A fifteen (15) day period, starting on date of award, will be used for the cooperator to provide preliminary documents to the CAA and CATR.

F. MATERIAL AVAILABLE FOR REVIEW

Recipient and/or his/her representative(s) will have access to the following materials through the CATR or Pacific Fleet Representative. The Recipient shall pay for or replace any items borrowed that are damaged, stolen or lost.

- a. NALF SCI – 2013 Integrated Natural Resources Management Plan (INRMP)
- b. NMFS Critical Habitat Exclusion (76 FR 66806)
- c. Rocky intertidal reports of previously conducted surveys
- d. Temperature and environmental data collected at permanent SCI rocky intertidal monitoring sites

G. GENERAL REQUIREMENTS

1. The Recipient shall provide all labor, management, supervision, tools, materials, equipment, transportation, meals, and lodging for him/herself and his/her personnel. All Recipient equipment is subject to inspection and approval by the CATR.
2. The Recipient shall provide all equipment (unless otherwise stated) and analyses necessary to complete the work described within this Agreement. Equipment is defined as “tangible nonexpendable personal property including exempt property charged directly to the award having a useful life of more than one year.” Supplies are defined as “All personal property excluding equipment, intangible property, and debt instruments, and inventions of a contractor conceived or first actually reduced to practice in the performance of work under a funding agreement (“subject inventions”), as defined in 37 CFR part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements.” (DoD Grant and Agreement Regulations, DoD 3210.6-R#).
3. The Recipient shall visit the study/project area as often as necessary and within the time limits stated below to accomplish the purposes of the Agreement as detailed further in this Scope of Work. It is the Recipient's responsibility to obtain security and entrance clearances and camera passes for himself/herself and his/her personnel onto the Installation. The Recipient must comply with all security rules, regulations, requirements, and day-to-day operational changes thereto. Unannounced changes to day-to-day operational procedures may, at times, prohibit the Recipient access to study/project sites. While on the Range Complex, the Recipient shall abide by all applicable rules and regulations issued by the Commanding Officer. The Recipient may be subject to inspections for contraband while on Government property.
4. The Recipient shall manage the total work effort and assure fully adequate and timely completion of services required under this Agreement. Included in this function shall be a full range of management duties including, but not limited to, planning, scheduling, inventory, analysis, quality control, and for meeting professional industry standards for culturing abalone.
5. All work conducted under this Agreement shall be in accordance with:
 1. The requirements of the Cooperator’s permit from National Marine Fisheries Service (for Black Abalone)
 2. NMFS Standard Operating Procedures (SOP) for handling and culturing Abalone
6. Due to the complexity of work, the Recipient shall provide the following key personnel with the following minimum qualifications:

A. Principal Investigator: The Recipient shall designate one person as responsible for ensuring provisions are in place, project and personnel supervision are adequate, and quality control and meeting of reporting requirements are met on a daily basis. This person shall have, at minimum:

- i. A PhD in Animal Science/Reproductive Biology or related science.
- ii. Experience evaluating the effects of environmental stressors on aquatic animal reproduction.
- iii. At least 10 years of experience in the domain of marine invertebrate reproduction and culture methodology.

B. Postdoctoral Researcher: The Recipient shall designate one person as responsible for abalone culture and collection of biological data. This person shall have, at minimum:

- i. An MS in aquaculture, marine biology, or a closely related field.
- ii. Knowledge in domain of aquatic animal reproduction.
- iii. Ability to work efficiently in the field or at offsite facilities as well as independently and within research teams.

7. The Recipient shall provide the CAA (via the CATR) the names of persons and copies of their resumes being considered for work under this Agreement. The Recipient shall not replace or substitute any staff member without prior written approval by the CAA.
8. The Recipient shall work closely with the CATR and Pacific Fleet Representatives in planning and carrying out all field activities.
9. All work conducted in support of this Agreement shall comply with all federal and state laws.
10. If there is an incident which the Recipient believes may involve “take” of an endangered species and involves an activity permitted under the endangered species permit, the Recipient shall follow the procedures in the permit and notify the Pacific Fleet Representative and CATR immediately.
11. If the Recipient “take” of an endangered species that results from an activity not listed on the permit, the Pacific Fleet Representatives and CATR shall be contacted immediately.
12. Photography is may be restricted on the Range Complex. The Recipient and all representatives are required to obtain permission from the CATR prior to taking any photographs on the Range Complex. Only photographs of Agreement-related activities will be permitted.
13. The use of the Range Complex by the Recipient and at-sea operations are on a “not to interfere” basis.
14. At no additional cost to the Government, the Recipient shall be in possession of all necessary permits (as described above) from NMFS necessary to conduct the activities stipulated in this Agreement. All permits shall be submitted as part of the proposal.
15. All parties involved in this Agreement agree to comply with all applicable laws and regulations pertaining to the provision of safe and respectful workplace and to provide a work environment free of harassment and intimidation for such party’s own employees and third parties.
16. All work conducted in support of this Agreement shall comply with all federal laws applicable to the Ranges including, but not limited to, the Endangered Species Act, the Clean Water Act and the Migratory Bird Treaty Act.
17. All field notes, field data forms, electronic storage of field data, photographs, etc. collected and produced as part of this Agreement are the property of the DoN. Legible copies of the field notes, data forms and other information shall be provided to the CATR and Pacific Fleet Representatives upon request.
18. The data obtained during this Agreement shall be scientifically defensible and suitable for publication. All

methods of data collection and analyses shall be standardized with previous studies conducted by the Recipient under past Agreements for this type of work, or when appropriate, analyzed using acceptable new or improved methods as determined in current scientific literature(s). If changes in analyses make results unfit for comparison with previously collected data, the Recipient shall reanalyze all appropriate data sets for comparison. The CAA shall approve (via the CATR) in advance any changes to previously used experimental designs, methods of data collection and/or analyses, which shall be provided in the Recipient's required Work Plan.

19. The Recipient shall inform the CATR and Pacific Fleet Representatives via e-mail of any unusual activity observed while conducting surveys in the field (e.g. trespassers or persons in unauthorized areas). Information should include (a) location, (b) date, (c) time, and (d) any detailed facts regarding the activity.
20. The Recipient shall inform the CATR and Pacific Fleet Representatives via e-mail of any unusual species observed while conducting surveys in the field (e.g. species which are federally listed or are State of Species of Special Concern). Information should include (a) location, (b) date, (c) time and (d) any detailed facts about the sighting.
21. Throughout the term of this Agreement the CATR and the Pacific Fleet Representatives shall be afforded the opportunity by the Recipient to periodically observe the Recipient's field activities, to review computer or paper files of raw data, prepared data (such as data analyses, summaries, maps, figures, tables, etc.), or any record deemed appropriate by the CAA in establishing the Recipient's performance in fulfilling the requirements of this Agreement.
22. The DoN, via the CAA, may request updated data presented on maps, figures and/or tables whenever the DoN's need to obtain this information is before the next report required under Section I of this Agreement. The Recipient shall forward the requested data electronically within ten (10) days from the date of request. If the requested data cannot be provided within this time frame, the Recipient shall forward electronically the most updated raw data to the CAA, via the CATR (cc provided to Pacific Fleet Representatives). The DoN understands that facilitating the requested most updated data may reduce the amount of work that would normally be accomplished during the period of time required to complete the request. The Recipient shall document the amount of efforts and its translated cost estimate that would have been incurred by the Recipient to complete the request for updated data. This document shall be electronically forwarded to the CAA (via CATR and cc provided to Pacific Fleet Representatives) to review so that the DoN will have a firm understanding on the amount of work displaced that would have normally been accomplished during the period of time required to complete the request.

H. SPECIFIC REQUIREMENTS

The following specific work requirements for this Cooperative Agreement are in addition to the requirements set forth above under Section B. PURPOSE. All work shall be consistent with the requirements of all pertinent federal, state and local laws and regulations. All work shall be coordinated with the CATR and Pacific Fleet Representatives.

Base Requirements

1. BASE Tasks: Conduct Experiments of the Reproductive Biology of Red Abalone

The Recipient will conduct a study to compare the effect of various temperatures on Red Abalone reproduction by monitoring gonadal development using non-invasive ultrasonography methods. The Recipient shall conduct experiments at various different temperatures: ambient temperatures of the facility and temperatures profiles from monitoring sensors currently existing in the natural habitats of existing Black Abalone at SCI. The Recipient should evaluate the Red Abalone within these initial experiments as surrogates for (1) body condition and (2) gonadal development in male and females throughout the abalone's annual cycle. The Recipient shall evaluate the impacts of temperature using non-invasive methodology in Red Abalone and will formulate conclusions based on the results of the findings.

2. Draft and Final Report

The draft and final report shall be submitted in accordance with Section J. Submittals and Schedules. The report shall be in scientific format and include the following: 1) Title page showing title, date, cooperative agreement number, Cooperative Agreement Technical Representative contact information; 2) Sub-title page showing title, prepared by and for listings, date and recommended citation; 3) Table of contents; 4) Abstract or Executive Summary; 5) Introduction; 6) Methods; 7) Results; 8) Discussion; 9) Conclusions (to include synthesis with previous work and recommendations for future study); 10) Legible copies of the field notes, data forms and other information.

Option Task 1

1. Conduct Experiments of the Reproductive Biology of Black Abalone

Contingent on productivity, animal availability and funding, a comparative study shall be directed at Black Abalone in year two. This task may include travel to source Black Abalone if none are available from the Southwest Fisheries Science Center at the time they are required.

The Recipient will conduct a study to compare the effect of various temperatures on Black Abalone reproduction (using the validated methodologies established in the year one) by monitoring gonadal development using non-invasive ultrasonography methods. The Recipient shall conduct experiments at various different temperatures: ambient temperatures of the facility and temperatures profiles from monitoring sensors currently existing in the natural habitats of existing Black Abalone at SCI. The Recipient should evaluate the Black Abalone for (1) body condition and (2) gonadal development in male and females throughout the abalone's annual cycle. The Recipient shall evaluate the impacts of temperature using non-invasive methodology in Black Abalone and will formulate conclusions based on the results of the findings.

2. Draft and Final Report

The draft and final report shall be submitted in accordance with Section J. Submittals and Schedules. The report shall be in scientific format and include the following: 1) Title page showing title, date, cooperative agreement number, Cooperative Agreement Technical Representative contact information; 2) Sub-title page showing title, prepared by and for listings, date and recommended citation; 3) Table of contents; 4) Abstract or Executive Summary; 5) Introduction; 6) Methods; 7) Results; 8) Discussion; 9) Conclusions (to include synthesis with previous work and recommendations for future study); 10) Legible copies of the field notes, data forms and other information.

In accordance with the California Cooperative Ecosystem Studies Unit Cooperative (CESU) and Joint Venture Agreement, Article II. Statement of Work, the CATR agrees to provide substantial involvement to include, but are not limited, the following:

- NAVFAC SW CATR is involved in the development of study methodology, data gathering, analysis, and/or report writing.
- NAVFAC SW CATR actively participates and collaborates in carrying out the project plan of work and review.
- NAVFAC SW CATR incurs in-kind or direct expenditures in carrying out the activities specified in the statement of work.

I. MEETINGS/COORDINATION

1. The Recipient or his/her designee will attend (via telephone) a kick-off meeting with the CATR, Pacific Fleet Representatives, and/or other necessary parties to ensure coordination of activities. The CATR shall arrange the meeting.

2. The Recipient shall attend quarterly coordination meetings/phone conferences with the CATR, Pacific Fleet

Representatives and other environmental staff, as needed.

3. The Recipient shall be available on an intermittent basis throughout the Agreement period for consultation with the CATR and Pacific Fleet Representatives on matters involving humpback whale movements in the Pacific Ocean, or other matters related to this Cooperative Agreement.

J. SUBMITTALS and SCHEDULES

1. Electronic copies of all submittals/schedules/deliverables (examples include, but are not limited to, draft/interim/final reports, progress reports/monthly reports) will be provided to the Cooperative Agreement Administrator for retention in the official agreement file.

Recipient shall adhere to following schedule, unless otherwise approved by CAA and CATR.

Event/Deliverable	Due Date	Format
Meetings and Coordination		
i) Copy of all permits required	Day of kick-off meeting	Electronic (email) (MS Word)
ii) Kick-off meeting	Within one month following award	-
BASE Tasks – Evaluating Gonadal Development of Red Abalone		
i) Experiments on Red Abalone	Within one year following Kick-off meeting	-
Draft/Final Report (BASE)		
i) Draft Report	90 calendar days following conclusion of experiments	Electronic (email) (MS Word)
ii) Final Report	No later than 30 days after receipt of Navy comments	Electronic (email) (MS Word)
OPTION 1 Tasks – Evaluating Gonadal Development of Black Abalone		
i) Animal collection	Within two months following award	-
ii) Experiments on Black Abalone	Within one year following animal collection	-
iii) Draft Report	90 calendar days following conclusion of experiments	Electronic (email) (MS Word)
iv) Final Report	No later than 30 days after receipt of Navy comments	Electronic (email) (MS Word)

*Exact due dates and format instructions for option work will be provided in the event that options are exercised.

2. Submittals and Deliverable Schedule

- a. Permits. A copy of all permits required for the work described in this Agreement shall be provided at the kick-off meeting (if not already submitted).
- b. The government will have a 30 calendar day review period from receipt of the draft reports to comment (unless otherwise noted). The final reports shall be submitted within 30 calendar days of receipt of Government comments. If necessary, the government will have a within 15 calendar day review period from receipt of final reports (with comments incorporated) for government review of documents to ensure comments were adequately addressed. If review and acceptance by government is not completed within the 30-day review

period, constructive acceptance will be deemed to have occurred and final deliverables can be submitted. Only the CAA has the authority to make changes to the 30-day review period.

- c. The Recipient shall provide all required draft and final reports as electronic files, either as email attachments, sent to the CATR on CD, or downloadable via FTP site. The Recipient shall provide six (6) CD-ROMs containing the report, maps, photographs and any pertinent supplemental information.
- d. DoD/ONR have been directed to provide an approach to support increased public access to peer reviewed scholarly publications and digitally formatted scientific data arising from unclassified publicly releasable research and programs funded wholly or in part by the DoD, as directed by OSTP Memorandum: "Increasing Access to the Results of Federally Funded Scientific Research" PARR), dated 22 February 2013 and the 'DoD Plan to Establish Public Access to the Results of Federally Funded Research' dated February 2015. By providing greater public access to DoD funded research, the Department seeks to encourage and accelerate scientific breakthroughs and innovation of potential interest to DoD in carrying out its mission. A robust industrial base and commercialization of DoD technologies will also benefit entrepreneurship, and enhance economic growth and job creation.
- e. Any resulting publically available information (peer-reviewed publication, conference/workshop presentation, etc.) shall be provided to the Navy as a .pdf of the final document at no additional cost.
- f. Submittal/Deliverable Standards: All submittals/deliverables are expected to be of the highest professional quality and will be rejected if any of the following exists:
 - there are typographical errors, spelling, or grammar mistakes; or
 - results and discussion are not tied directly and continually to natural resource management concerns of the installation; or
 - the document is not organized in a manner that flows well; or
 - the document does not provide appropriate context, background, literature review, and comparison to other relevant studies, locations, and similar species; or
 - the appropriate style guide is not adhered to (in most cases this is the JWM or CSE); or
 - the document is not fully formatted (e.g. functional table of content links, consistent fonts/styles throughout document, accurate page numbers, accurate and complete stand-alone appendices [if applicable], accurate and functional figure titles, table titles, section headers, and table of contents need to be complete and accurate); or
 - abbreviations and acronyms are not consistent throughout each submitted document; references/literature not cited fully cross-checked between what is in the document vs. what is presented in the references section; data in tables shall be checked for consistency if information is repeated throughout the document or referenced in other documents, figure titles shall be checked against what is presented in the figures; appendices/figures shall be for the current project and not a copy/paste from another project, prior to submittal for client review.
- g. The draft report shall be a complete document that has been proofread for spelling and grammatical errors and contains all text, figures, graphics, photographs and tables provided for review.
- h. Data. All raw data, data sheets and electronic databases (including GIS data) shall be submitted as supplemental information on a labeled CD-ROM, which will not be made publically available (see Deliverable Specifics 3-a). The final versions of these databases will be included on the CD-ROM's attached to the final reports and is subject to the same delay in public release of information to provide for subsequent Contractor publication.
- i. Maps.
 - 1). All maps created for this Agreement shall be incorporated in the draft and final reports. All maps shall be printed on 8.5 by 11-inch paper or 11 by 17-inch paper folded to match the size of the report(s).

2). All maps shall be printed at an acceptable scale using a State Plane projection, Zone 0405, North American Datum 1983 or USGS. Electronic copies of all maps shall also be provided.

3). All maps created for this Agreement shall contain the following information: (a) title, (b) scale bar, (c) legend, (d) date, (e) north arrow and (f) notation identifying who prepared the map.

- j. Photographs. The Recipient will document and record pertinent aspects of the work using color digital imagery. The Recipient will provide camera and all necessary equipment. Photographs of activities documented shall be included as an appendix on CD ROM. All photographs shall become DoN property and shall be submitted with the final report. All original photographs shall be appropriately labeled with information to include:

date
location (specific place and Installation)
subject/activity
activity documented,
identification of any people in the picture
photographer.

K. DATA AND PUBLICATION

1. This Cooperative Agreement is subject to, and Recipient shall comply with, 2 CFR 200.315 concerning "Intangible Property," which includes use of research data. Any information or data protected by federal law will be identified by the Government prior to being provided to Recipient and the Government will notify the Recipient in advance of applicable limitations on such information. Except as to information so identified and limited, there are no restrictions on reporting or publishing reports based upon the fundamental research that is the subject of this Cooperative Agreement.

The Federal Government has the right to obtain, reproduce, publish or otherwise use the data first produced under this Agreement and authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes. The DoN acknowledges and agrees that the Recipient's fundamental consideration in performing the research under this Agreement shall be Recipient's right to publish the results of such research for academic and scientific purposes. The Recipient shall submit, for review and comment, any proposed professional, scientific or non-scientific report, paper or note published or unpublished or be part of any technical or non-technical presentation or be provided to anyone not a party to this Agreement to the DoN thirty (30) days prior to the submission of the work mentioned above.

2. The acknowledgements for any paper or presentation resulting from this work shall include the following statement: "This research was funded by the U.S., Commander Pacific Fleet."

3. Any publications resulting from this work shall be provided at no cost to the Department of the Navy (in the form of a digital copy).

4. The Recipient shall be responsible for ensuring all personnel participating in activities under this Agreement have read and acknowledged the DATA AND PUBLICATION provisions of this Agreement.

L. RELEASE OF INFORMATION

The Recipient shall not respond to any inquiries about this Cooperative Agreement from the news media or non-governmental organizations or other persons during the term of this Cooperative Agreement unless it has first consulted with the Government and a determination appropriately made by the cognizant Government representative concerning release of information pursuant to the authority (Federal or State) cited by the requester. All inquiries shall be directed to the Public Affairs Officer at the Installation and Public Affairs Officer at NAVFAC SW through the Pacific Fleet Representatives, CATR, and CAA.

M. SAFETY

The Recipient will be required to develop an Accident Prevention Plan (APP) following the format in Appendix A of the EM 385-1-1, US Army Corps of Engineers Safety & Health Requirements Manual, 30 November 2014 or latest edition. The government CATR will contact the SW EV Safety Office to check if the project may qualify for the Abbreviated APP, prior to directing the recipient to prepare an APP. Additional specific plan or plans is/are required if the project involves work that is potentially hazardous. List of specific plans is located at section (i) of Appendix A of the EM 385-1-1. Potentially hazardous activities include, but are not limited to:

- soil boring or digging test pits (excludes manual collection of de minimis surface soil samples)
- work on, in, or near bodies of water where there a danger from drowning
- use of heavy equipment, e.g. backhoes, excavators, bulldozers, etc.
- excavation, backfilling, and compaction
- use of man lifts, ladders, and other climbing apparatus
- use of weight handling equipment, e.g. crane, forklifts, and hoists
- well drilling and/or well pump repair or replacement
- construction, demolition, or repair of site improvements
- work within 10 ten feet of high voltage lines, or high pressure gas, steam, or water lines

A Site Safety and Health Plan (SSHP) is also required if the work involves potential exposure to hazardous, toxic or radioactive waste (HTRW). The minimum requirement for the SSHP is in Section 33 of the EM 385-1-1. Include an Activity Hazard Analysis (AHA) for all tasks reasonably anticipated to be performed as part of this scope of work. Format and instructions for the AHA is in section 1 of the EM 385-1-1. As a minimum, references used to develop the APP, SSHP and AHA are: EM 385-1-1 (or latest addition), and Local Activity safety plans and standard operating procedures. When developing the APP, SSHP and AHA, address all sections that are deemed appropriate for performing the work in this CA, while ensuring a safe work environment for all personnel involved. The draft APP, SSHP and AHA have to be reviewed by the Government Designated Authorities (SW EV Safety Office, CATR, ROICC/FEAD) prior to start of field work activities.

NOTE: AHA is an attachment required by the APP. SSHP is also an attachment required by the APP if a project includes potential exposure to HTRW. Government PM should verify with the SW EV Safety Office prior to directing the recipient to prepare a SSHP.

The APP, SSHP and AHA will provide a safe and healthful environment for all personnel involved as well as personnel working near the sites for the DoN. The Recipient shall certify to CATR that the final APP, SSHP and AHA have been reviewed with each Recipient employee working on this Cooperative Agreement prior to mobilization and start of fieldwork activities.

A Draft and Final APP, SSHP and AHA will be submitted concurrently with the Work Plan but shall be printed under a separate cover from the Work Plan. The final APP, SSHP and AHA shall be immediately accessible to the Site Safety and Health Officer (SSHO) and Project Manager at all times during the project, and a copy shall be available in every vehicle utilized for work under this Cooperative Agreement. The SSHO is required to have completed the 10-hour OSHA Safety Training.

Man-hour reporting is also required by the EM 385-1-1 and the Unified Facilities Guide Specifications (UFGS) -01 35 26, (February 2012) change 2, 08/13. The recipient will provide a Monthly Exposure Report (MER) and will attach this report to the quarterly (or other specified interval) billing request. The CATR will submit a copy of the MER to the SW EV Safety Office.

Site Assist Visit (SAV). While the recipient is performing the job on-site, a SW EV Safety representative may perform an SAV. The recipient is required to comply with the contents of the final APP (with the AHA and/or SSHP, as applicable). Any modifications to the APP shall be approved first by the GDA prior to continuing work. Also the recipient has to comply with the requirements of the Section 1, Program Management, of the EM-385 -1-1, while at the job site.

N. HOLD HARMLESS

a) Governmental Parties

(1) The Federal Agencies (excluding the U.S. Forest Service), Host University, and Partner Institutions which are governmental parties, each accept responsibility for any property damage, injury, or death caused by the acts or omissions of their respective employees, acting within the scope of their employment, to the fullest extent permitted by their respective applicable laws, including laws concerning self-insurance.

(2) To the extent work by governmental parties is to be performed through sub-contract by non-governmental entities or persons, the governmental party sub-contracting work will require that subcontracted entity or person to meet provisions (1), (2), and (3) for non-governmental parties stated below.

(3) This provision is applicable to the U.S. Forest Service acting by and through the Forest Service, USDA does hereby recognize potential liability for payment of claims for injury or loss of property of personal injury or death caused by the Government, or any officer, agent or employee thereof, while acting within the scope of his/her office of employment under circumstances when the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred (28 U.S.C. §§1346 (b), 2672 et seq.).

b) Non-governmental Parties: Work provided by non-governmental entities or persons, will require that entity or person to:

(1) Have public and employee liability insurance from a responsible company or companies with a minimum limitation of one million dollars (\$1,000,000) per person for any one claim, and an aggregate limitation of three million dollars (\$3,000,000) for any number of claims arising from any one incident. In subsequent modifications, the parties may negotiate different levels of liability coverage, as appropriate. The policies shall name the United States as an additional insured, shall specify that the insured shall have no right of subrogation against the United States for payments of any premiums or deductibles due thereunder, and shall specify that the insurance shall be assumed by, be for the account of, and be at the insured's sole risk; and

(2) Pay the United States the full value for all damages to the lands or other property of the United States caused by such person or organization, its representatives, or employees; and

(3) Indemnify, save and hold harmless, and defend the United States against all fines, claims, damages, losses, judgments, and expenses arising out of, or from, any omission or activity of such person or organization, its representatives, or employees.

(4) Non-governmental Partner Institutions shall provide the Federal Agencies confirmation of such insurance coverage, prior to beginning specific work authorized herein and specified in subsequent modifications.

O. INSURANCE

1. At the commencement of this Cooperative Agreement, the Recipient shall obtain, from a reputable insurance company or companies satisfactory to the Government, comprehensive general liability insurance. The insurance shall provide an amount not less than a minimum combined single limit of \$1,000,000.00 for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, property damage or both, suffered or alleged to have been suffered by any person or persons resulting from or related to the presence or operations of the Recipient, its employees, agents or contractors under this Cooperative Agreement. The Recipient shall require the insurance company or companies to furnish the Government with a certified copy of the policy or policies, or certificates of insurance evidencing the purchase of such insurance. Each policy of insurance required under this Paragraph shall contain an endorsement reading as follows:

“The insurer waives any right of subrogation against the United States of America which might arise by reason of

any payment made under this policy.”

2. All insurance required of the Recipient hereunder shall be in such form, for such periods of time and with such insurers as the Government may require or approve. All policies or certificates issued by the respective insurers for public liability and property insurance shall name the United States of America as an additional insured, and shall provide that no cancellation, reduction in amount or any material change in coverage thereof shall be effective until at least 30 calendar days after receipt by the Government of written notice thereof, regardless of any prior act or failure to act or negligence of the Recipient or the Government or any other person concerning such amount or change in coverage.

3. The Recipient at its sole cost and expense, may insure its activities in connection with this Cooperative Agreement by maintaining a program of self-insurance that complies with the requirements of this Section O, including coverages specified in Attachment A hereof. Recipient shall also provide a copy of the exempting statute cited in support of its claim of self-insurance pursuant to Section 2 of Attachment A to this Cooperative Agreement. (The self-insurance clause is applicable only to appropriate state and local governments and qualifying institutions of higher education who provide evidence of a self-insurance program in accordance with this Section and Attachment A, Section 2.)

4. During the entire period the Cooperative Agreement shall be in effect, the Recipient shall require its contractors or agents or any contractor performing work at the Recipient’s or agent’s request on the affected Government Premises to carry and maintain the insurance required below:

“Comprehensive general liability insurance in the amount of 1,000,000.00.”

5. The Recipient and any of its contractors or agents shall deliver or cause to be delivered promptly to the Cooperative Agreement Administrator, a certificate of insurance or a certified copy of each renewal policy evidencing the insurance required by this Cooperative Agreement and shall also deliver no later than thirty (30) calendar days prior to expiration of any such policy, a certificate of insurance evidencing each renewal policy covering the same risks.

6. In the event that any item or part of the premises or facilities shall require repair, rebuilding, or replacement resulting from loss or damage, the risk of which is assumed under this Section O, the Recipient shall promptly give notice thereof to the Government and, to the extent of its liability as provided in this Section O, shall, upon demand, either compensate the Government for such loss or damage, or rebuild, replace or repair the item or items of the premises or facilities so lost or damaged, as the Government may elect. If the cost of such repair, rebuilding, or replacement exceeds the liability of the Recipient for such loss or damage under this Section O, the Recipient shall affect such repair, rebuilding, or replacement if required so to do by the Government, and such excess of cost shall be reimbursed to the Recipient by the Government. In the event the Recipient shall have effected any repair, rebuilding, or replacement which the Recipient is required to effect pursuant to this Section O, the Government shall direct payment to the Recipient of so much of the proceeds of any insurance carried by the Recipient and made available to the Government on account of loss of or damage to any item or part of the premises or facilities as may be necessary to enable the Recipient to affect such repair, rebuilding or replacement. In the event that the Recipient shall not have been required to affect such repair, rebuilding, or replacement, and the insurance proceeds allocable to the loss or damage which has created the need for such repair, rebuilding or replacement have been paid to the Recipient, the Recipient shall promptly refund to the Government the amount of such proceeds.

P. PAYMENTS

1. Partial payments equal to the amount of work accomplished may be made monthly during the field work portion; after submittal of the draft reports; and after receipt of the final reports.

2. The final payment of 15 percent of the Cooperative Agreement overall value shall be paid when the final report and all other submittals listed in Section J have been received and accepted by the CATR.

3. Any requirement for the payment or obligation of funds, under the terms of this Agreement, shall be subject to

the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 USC §1341 et seq. Nothing in this Agreement shall be construed as implying that Congress will, at a later time, appropriate funds sufficient to meet deficiencies.

4. Payments will be made in accordance with Defense Federal Acquisition Regulation (DFAR) 252.232-7006 Wide Area Work Flow Payment Instruction. See Attachment B WAWF Instructions for instructions on payment procedures.

Q. EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT REPORTING

Section 2(d) of the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. No. 109-282), as amended by section 6202 of the Government Funding Transparency Act of 2008 (Pub. L. 110-252), requires the Contractor to report information on subcontract awards. The law requires all reported information be made public, therefore, the Contractor is responsible for notifying its subcontractors that the required information will be made public.

Unless otherwise directed by the Contracting Officer, by the end of the month following the month of award of a first-tier subcontract with a value of \$25,000 or more, (and any modifications to these subcontracts that change previously reported data), the Contractor shall report the following information at <http://www.frs.gov> for each first-tier subcontract:

- (a) Unique identifier (DUNS Number) for the subcontractor receiving the award and for the subcontractor's parent company, if the subcontractor has one.
- (b) Name of the subcontractor.
- (c) Amount of the subcontract award.
- (d) Date of the subcontract award.
- (e) A description of the products or services (including construction) being provided under the subcontract, including the overall purpose and expected outcomes or results of the subcontract.
- (f) Subcontract number (the subcontract number assigned by the Contractor).
- (g) Subcontractor's physical address including street address, city, state, and country. Also include the nine-digit zip code and congressional district.
- (h) Subcontractor's primary performance location including street address, city, state, and country. Also include the nine-digit zip code and congressional district.
- (i) The prime contract number, and order number if applicable.
- (j) Awarding agency name and code.
- (k) Funding agency name and code.
- (l) Government contracting office code.
- (m) Treasury account symbol (TAS) as reported in FPDS.
- (n) The applicable North American Industry Classification System (NAICS) code.

By the end of the month following the month of a contract award, and annually thereafter, the Contractor shall report the names and total compensation of each of the five most highly compensated executives for the Contractor's

preceding completed fiscal year at <http://www.ccr.gov>, if –

- (a) In the Contractor’s preceding fiscal year, the Contractor received –
 - (i) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and
 - (ii) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and
- (b) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>).

Unless otherwise directed by the Contracting Officer, by the end of the month following the month of a first-tier subcontract with a value of \$25,000 or more, and annually thereafter, the Contractor shall report the names and total compensation of each of the five most highly compensated executives for each first-tier subcontractor for the subcontractor’s preceding completed fiscal year at <http://www.frs.gov>, if

- (a) In the Subcontractor’s preceding fiscal year, the Subcontractor received –
 - (i) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and
 - (ii) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and
- (b) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>).

If the Contractor in the previous tax year had gross income, from all sources, under \$300,000, the Contractor is exempt from the requirement to report subcontractor awards. Likewise, if a subcontractor in the previous tax year had gross income from all sources under \$300,000, the Contractor does not need to report awards to that subcontractor.

END

ATTACHMENT A

SELF-INSURANCE REQUIREMENTS FORM

INSURANCE MUST CONFORM TO ALL THE REQUIREMENTS LISTED BELOW PRIOR TO RECIPIENT BEING PERMITTED TO USE OR OCCUPY GOVERNMENT PREMISES OR PROPERTY PURSUANT TO THE COOPERATIVE AGREEMENT

1. PUBLIC LIABILITY AND PROPERTY DAMAGE

a. Required minimum amounts of insurance listed below:

\$	N/A	Fire and Extended Coverage
\$	1,000,000	Third Party Property Damage
\$	1,000,000	Third Party Personal Injury Per Person
\$	1,000,000	Third Party Personal Injury Per Accident

2. SELF-INSURANCE REQUIREMENTS: If your organization is self-insured, please provide evidence of self-insurance which meets or exceeds the insurance liability amounts in Item # 1.

The following information, written on your organization's letterhead, is also required:

- A brief description of your organization's self-insurance program, with reference to statutory or regulatory authority establishing the self insurance program.
- The name and telephone number of your organization's self-insurance program administrator.
- Reference the appropriate military facility and cooperative agreement number.

3. IF YOUR SELF-INSURANCE PROGRAM DOES NOT MEET THE ABOVE MINIMUM REQUIREMENTS:

• Provide evidence of Excess Liability Insurance in the amount necessary to meet or exceed the minimum requirements in Item #1 above.

• The following endorsements are required for Excess Liability insurance policies:

a. "The insurer waives any right of subrogation against the United States of America which might arise by reason of any payment made under this policy."

b. "The Commanding Officer, Naval Facilities Engineering Command San Diego, CA shall be given thirty (30) days written notice prior to making any material change in or the cancellation of the self-insurance program."

c. "The United States of America (Department of the Navy) is added as an additional insured in operations of the policyholder at or from the premises licensed/leased from the United States".

d. "This insurance certificate is for use of facilities at NAVFAC SW under this Cooperative Agreement, No. N62473-19-2-0023."

4. NOTICE: "RIGHT TO USE" DOCUMENTS WILL NOT BE FULLY EXECUTED UNTIL CERTIFICATE IS RECEIVED WITH PROPER ENDORSEMENTS.

ATTACHMENT A (Continued)
NON SELF-INSURED REQUIREMENTS FORM

INSURANCE MUST CONFORM TO ALL THE REQUIREMENTS LISTED BELOW PRIOR TO RECIPIENT BEING PERMITTED TO USE OR OCCUPY GOVERNMENT PREMISES OR PROPERTY PURSUANT TO THE COOPERATIVE AGREEMENT

1. PUBLIC LIABILITY AND PROPERTY DAMAGE

a. Required minimum amounts of insurance listed below:

\$	N/A	Fire and Extended Coverage
\$	1,000,000	Third Party Property Damage
\$	1,000,000	Third Party Personal Injury Per Person
\$	1,000,000	Third Party Personal Injury Per Accident

2. THE CERTIFICATE OF INSURANCE MUST CONTAIN THE FOLLOWING ENDORSEMENTS:

a. "The insurer waives any right of subrogation against the United States of America which might arise by reason of any payment made under this policy."

b. "The Commanding Officer, Naval Facilities Engineering Command, Facilities Engineering Command, shall be given thirty (30) days written notice prior to making any material change in or the cancellation of the policy."

c. "The United States of America (Dept. of the Navy) is added as an additional insured in operations of the policyholder at or from the premises **licensed/leased** from the United States."

d. "This insurance certificate is for use of facilities at NAVFAC SW under this Cooperative Agreement, No. N62473-19-2-0023."

e. Loss, if any, under this policy shall be adjusted with Recipient and the proceeds, at the direction of the Government, shall be payable to Recipient, and proceeds not paid to Recipient shall be payable to the Treasurer of the United States of America."

3. NOTICE: "RIGHT TO USE" DOCUMENTS WILL NOT BE FULLY EXECUTED UNTIL CERTIFICATE IS RECEIVED WITH PROPER ENDORSEMENTS.

ATTACHMENT B WAWF INSTRUCTIONS

252.232-7006 WIDE AREA WORKFLOW PAYMENT INSTRUCTIONS (JUN 2012)

(a) Definitions. As used in this clause--

Department of Defense Activity Address Code (DoDAAC) is a six position code that uniquely identifies a unit, activity, or organization.

Document type means the type of payment request or receiving report available for creation in Wide Area WorkFlow (WAWF).

Local processing office (LPO) is the office responsible for payment certification when payment certification is done external to the entitlement system.

(b) Electronic invoicing. The WAWF system is the method to electronically process vendor payment requests and receiving reports, as authorized by DFARS 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports.

(c) WAWF access. To access WAWF, the Contractor shall--

(1) Have a designated electronic business point of contact in the Central Contractor Registration at <https://www.acquisition.gov>; and

(2) Be registered to use WAWF at <https://wawf.eb.mil/> following the step-by-step procedures for self-registration available at this Web site.

(d) WAWF training. The Contractor should follow the training instructions of the WAWF Web-Based Training Course and use the Practice Training Site before submitting payment requests through WAWF. Both can be accessed by selecting the "Web Based Training" link on the WAWF home page at <https://wawf.eb.mil/>.

(e) WAWF methods of document submission. Document submissions may be via Web entry, Electronic Data Interchange, or File Transfer Protocol.

(f) WAWF payment instructions. The Contractor must use the following information when submitting payment requests and receiving reports in WAWF for this contract/order: **N62473-19-2-0023**

(1) Document type. The Contractor shall use the following document type(s).

NAVY CONSTRUCTION/FACILITIES MANAGEMENT INVOICE

(2) Inspection/acceptance location. The Contractor shall select the following inspection/acceptance location(s) in WAWF, as specified by the contracting officer.

ECOMP

(3) Document routing. The Contractor shall use the information in the Routing Data Table below only to fill in applicable fields in WAWF when creating payment requests and receiving reports in the system.

Routing Data Table*

Field Name in WAWF Data to be entered in WAWF

Pay Official DoDAAC **N68732**
Issue By DoDAAC **N62473/ECOMP**
Admin DoDAAC **N62473/ECOMP**
Inspect By DoDAAC **N62473/ECOMP**
Ship To Code ____
Ship From Code ____
Mark For Code ____
Service Approver (DoDAAC) ____
Service Acceptor (DoDAAC) **N62473/ECOMP**
Accept at Other DoDAAC ____
LPO DoDAAC **N62473/ECOMP**
DCAA Auditor DoDAAC ____
Other DoDAAC(s) ____

(4) Payment request and supporting documentation. The Contractor shall ensure a payment request includes appropriate contract line item and subline item descriptions of the work performed or supplies delivered, unit price/cost per unit, fee (if applicable), and all relevant back-up documentation, as defined in DFARS Appendix F, (e.g. timesheets) in support of each payment request.

(5) WAWF email notifications. The Contractor shall enter the email address identified below in the “Send Additional Email Notifications” field of WAWF once a document is submitted in the system.

NAVFAC_SW_ECOMP_inspector@navy.mil
dana.schrimpf@navy.mil (619) 532-2803

(g) WAWF point of contact.

(1) The Contractor may obtain clarification regarding invoicing in WAWF from the following contracting activity's WAWF point of contact.

NOT APPLICABLE

(2) For technical WAWF help, contact the WAWF helpdesk at 866-618-5988.

(End of clause)