

**DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER
ERDC CONTRACTING OFFICE
3909 HALLS FERRY ROAD
VICKSBURG, MISSISSIPPI 39180-6199**

RESEARCH COOPERATIVE AGREEMENT SCHEDULE

1. Cooperative Agreement Title: "Bird usage summary and analysis of bottomland forest management areas in Pool 13 and 18 of the Upper Mississippi River".

This agreement is issued under the terms of the Great Rivers (GR) Cooperative Ecosystems Studies Unit (CESU).

2. Cooperative Agreement Number: W912HZ-15-2-0025

3. Recipient Name and Address:

Iowa State University
1138 Pearson Hall
Ames, IA 50011-2207

Tax ID No.: 42-6004224
DUNS No.: 005309544
Cage Code: 5J949

4. Recipient Program Manager: Stephen J. Dinsmore, Department of Natural Resource Ecology & Management, Iowa State University, 339 Science Hall II, Ames, IO 50011-2207. Phone: 515-294-1348 Email: cootjr@iastate.edu
5. Grants Officer: Jeri H. McGuffie, 3909 Halls Ferry Road, Vicksburg, MS. 39180-6199. Phone: (601) 634-3128, Fax: (601) 634-2700. Email: Jeri.H.McGuffie@usace.army.mil

Grants Specialists: Kisha Craig, 3909 Halls Ferry Road, Vicksburg, MS. 39180-6199. Phone: (601) 634-5397, Fax: (601) 634-2700.
Email: Kisha.M.Craig@usace.army.mil

6. Grants Officer's Technical Representative (GOTR): Sherry Whitaker, U.S. Army Engineer Research and Development Center, 3909 Halls Ferry Road, Vicksburg, Mississippi 39180. Telephone: (601) 634-2990. Email: Sherry.L.Whitaker@usace.army.mil
7. Statement of Work: The research effort to be accomplished is described in the proposed effort in Exhibit 1.

8. Period of Performance: This award is for a base period of performance from the date of award through 24 September 2016. The Government may elect to support an additional 12 months of activity under this Cooperative Agreement by extending the base performance period. Each additional 12-month period will be accomplished in the form of a bilateral modification to this Cooperative Agreement citing a change in the completion date of the Cooperative Agreement, adding additional funds, if available, and incorporating the new Annual Scope of Work. The performance period of this Cooperative Agreement is restricted from exceeding a total performance period of 60 months, or base year with four option years.

9. Award Amount: \$20,000.00

10. Accounting and Appropriation Data:

Funding in the amount of \$20,000.00 is being provided as follows:

MIPR 96514751671514
PRAC W81EWF-5181-7174
LINE 0001 - \$10,000.00
9631230000 082428 25202L3LK0011550 NA 96114

MIPR 96514751671514
PRAC W81EWF-5181-7174
LINE 0002 - \$10,000.00
9631230000 082428 2520BBBJ7J0WDLOC NA 96114

11. Administered by: U.S. Army Corps of Engineers, ERDC Contracting Office (ECO) 3909 Halls Ferry Road, Vicksburg, MS 39180-6199. Certain administrative duties may be assigned to the Office of Naval Research (ONR) or the Grants Officer's Technical Representative designated herein. The ONR office that may perform these duties is identified below:

Office of Naval Research
230 South Dearborn
Room 380
Chicago, IL 60604-1595

Phone: (312) 886-5423
ONR_Chicago@navy.mil
UIC: N62880

12. Terms and Conditions: This Cooperative Agreement is subject to the General Terms and Conditions set forth in Attachment A and Certifications and Representation in Attachment B.

13. Reporting Requirements: Reporting requirements are pursuant to the requirements in Attachment A, Sections 10 and 11 of General Terms and Conditions and as follows:

- Quarterly status reports must be submitted to the ONR office identified herein with an additional copy sent via electronic mail to the GOTR.
- Final performance reports are due within 60 calendar days of expiration of period of performance, or final deadline for the individual task, whichever occurs first.

14. Payments: Payments will be made pursuant to the "Payments" article in Attachment A by Electronic Funds Transfer (EFT). See EFT instructions and Direct Deposit Authorization Form found on the internet at the following site: http://www.tad.usace.army.mil/Portals/53/docs/UDC/Admin/Direct_Deposit.pdf. The Recipient will be notified, if any of the information contained in this paragraph changes.

The payment office is:

USACE Finance Center
5722 Integrity Drive,
Millington, TN 38054-5005.

The following codes for electronic invoicing and payment apply to this agreement:

Payment Office DoDAAC: 964145
Issue by DoDAAC: W912HZ
Ship to DoDAAC: W81EWF
Admin DoDAAC: N62880 (Also noted in paragraph 11, Administered by)

If the Recipient has a resident DCAA that they would like copied, they may add their DCAA DoDAAC.

The Recipient shall:

* Submit original Grant Voucher (SF270) using the Office of Naval Research PayWeb system

- When Grant and Cooperative Agreement Voucher cannot be submitted via PayWeb because the Institution is not PayWeb enabled, the Institution shall submit the Grant and Cooperative Agreement Voucher directly in WAWF. When submitting the invoice directly in WAWF, the Institution shall send an email notification, when prompted, to the assigned GOTR identified in the award, and the designated Administrative Office and cesuinoicing@usace.army.mil. The additional notification to the government

is important to ensure that the acceptor/receiver is aware that the invoice documents have been submitted into WAWF.

The Administration Office will:

- * Review/approve the Invoice in PayWeb (an automatic e-mail will be forwarded to the assigned GOTR for concurrence) in accordance with the award and to the mailbox at cesu invoicing@usace.army.mil.
- * Request payment recommendations from the GOTR listed in Paragraph 6 of the schedule by automated email.
- * Approve the invoice in WAWF and send electronic email notifications to the GOTR or
- * Reject the invoice if improper invoice is submitted.

The GOTR will:

- * Within five (5) work days after ONR notification of the Recipient's payment request, the GOTR will make payment recommendations to the ONR Administration Office based on the Recipient's progress to-date.
- * Request a CEFMS receiving report to be created for the amount recommended certified by the Administrative Office.

15. Government Participation: There will be continued and substantial involvement and collaboration with government scientists and engineers in the execution of the work plan. The Government will assist in site and bird species selection and site visits as appropriate to insure adequate sampling for desired study results. The Government will also evaluate data and resulting statistical correlations for report preparation. In addition, the USACE will provide raw point count data starting in 1982 from the Huron Island area and from 1985 from Pleasant Creek as well as a digital database of the collected information. The USACE will also provide forest inventory data from over 50 systematically spaced plots within the harvest sites within the last two years as well as up to 220 additional plots on residual timber on the rest of the island complex.

16. Miscellaneous Provisions:

- a. Attachment A containing additional terms and conditions of this Cooperative Agreement is attached hereto and made part hereof.
- b. Attachment B containing certifications and representations is attached hereto and made a part hereof.

- c. Notwithstanding the recipient's technical and cost proposals, the Government's obligation to the recipient is restricted to the funding stated in Paragraph 10 above.
- d. Replacement of any personnel shall require a two-week prior notification, if possible, to the Grant Officer's Technical Representative in Paragraph 6. If a two week notification is not possible, notification of replacement of any personnel is required as soon as the situation arises. Replacement personnel shall possess not less than an equivalent education/experience level than the originally proposed individual.

THIS COOPERATIVE AGREEMENT IS BEING ENTERED INTO PURSUANT 10 U.S.C. 2358, AS AMENDED.

FOR THE RECIPIENT:

Signature

DATE: 9/25/2015

Typed Name: Keith B. Kutz
Senior Award Administrator
Title: Office of Sponsored Programs Administration

FOR THE UNITED STATES OF AMERICA:

Jeri H. McGuffie
Grants Officer
United States of America

DATE: _____

ATTACHMENT A

GENERAL TERMS AND CONDITIONS FOR COOPERATIVE AGREEMENTS WITH EDUCATIONAL INSTITUTIONS AND OTHER NONPROFIT ORGANIZATIONS

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1. PAYMENTS

Recipients shall request payments in compliance with 2 CFR Part 220: "Cost Principles for Educational Institutions." Payments shall be made under the reimbursement method. Recipients shall submit requests for payment using SF 270, Request for Advance or Reimbursement, no more frequently than monthly. The original SF 270 shall be submitted to the ONR activity identified in Paragraph 11 of the Agreement Schedule, with a copy to the GOTR listed in Paragraph 6. Payments will be made upon approval of the GOTR in accordance with Paragraph 14 of the schedule. A SF 270 can be downloaded from <http://www.onr.navy.mil/Contracts-Grants/manage-grant/grants-forms-download.aspx>.

2. ADMINISTRATION AND COST PRINCIPLES

Allowability of costs will be in accordance with 32 CFR 32.27 and 32.28. The following OMB Circulars and attachments thereto, effective the earlier of (i) the award date of this Cooperative Agreement or (ii) the date on which the Recipient incurs costs to be assessed the agreement, are incorporated as part of this agreement by reference, as applicable:

- a. A-110: "Uniform Administrative Requirements for Grants and Other Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations."
- b. 2 CFR Part 230: "Cost Principles for Nonprofit Institutions" (see note below).
- c. A-133, "Audits of Institutions of Higher Education and Nonprofit Institutions."
- d. 2 CFR Part 220: "Cost Principles for Educational Institutions."
- e. 2 CFR Part 225: "Cost Principles for State, Local, and Indian Tribal Governments."

Note: For those nonprofit organizations specifically exempted from the provisions 2 CFR Part 230, Subpart 31.2 of the Federal Acquisition Regulation (FAR) (48 CFR 31.2) shall apply.

These regulations may be obtained from:

Office of Management and Budget
EOP Publications Office
New Executive Office Building
725 17th Street, N.W., Room 2200
Washington, D.C. 20503

Telephone (202) 395-7332 or via the internet at http://www.whitehouse.gov/omb/grants_circulars/.

3. COST-SHARING

Cost-sharing amounts, if any, identified in the agreement documents must meet the allowability test of the appropriate cost principles identified in Article 2 of these Terms and Conditions, and governed by 2 CFR Part 215 and A-110. If, at the end of the agreement period, the actual cost of the research project is less than the project cost negotiated, the actual cost will be allocated between the Government and the Recipient in the dollar ratio originally proposed. Excess Government funds shall be returned to the government. If the grant officer approves a significant departure from the original research objectives, the Recipient may request that the negotiated cost-sharing agreement be adjusted. Unrecovered indirect costs and donated buildings or land are not authorized for cost sharing unless specifically identified elsewhere in this agreement.

4. PROGRAM INCOME

The recipient shall account for program income related to this agreement in accordance with 2 CFR 215 and OMB Circular A-110 as follows:

- a. Except as provided in paragraph 'e' below, program income earned during the project period shall be retained by the recipient and, in accordance with the terms and conditions of the award, shall be added to funds committed to the project by the DoD Component and recipient, and used to further eligible project or program objectives.
- b. Program income in excess of any limits stipulated shall be deducted from the total project or program allowable cost in determining the net allowable costs on which the Federal share of costs is based.
- c. Unless program regulations or the terms and conditions of the award provide otherwise, the recipient shall have no obligation to the Federal Government with respect to program income earned after the end of the project period.
- d. Costs incident to the generation of program income may be deducted from gross income provided these costs have not been charged to the award.
- e. Unless program regulations or the terms and conditions of the award provide otherwise, the recipient shall have no obligation to the Federal Government with respect to program income earned from license fees and royalties for copyrighted material, patents, patent applications, trademarks, and inventions produced under this agreement. Note that the Patent and Trademark Amendments (35 U.S.C. chapter 18) apply to inventions made under an experimental, developmental, or research award.

5. REVISION OF BUDGET/PROGRAM PLANS AND AMENDMENT OF THE COOPERATIVE AGREEMENT

- a. The only method by which this Cooperative Agreement can be amended is by a formal, written amendment signed by the grants officer. No other communications, whether oral or in writing, are valid. However, prior written approval of the grants officer is not required for the following actions in accordance with OMB Circular A-110 and 2 CFR 215:
 - (1) Transferring amounts budgeted for indirect costs to absorb increases in direct costs, or vice versa;
 - (2) Incurring pre-award costs 90 calendar days prior to award (incurring pre-award costs more than 90 calendar days prior to award would still require the prior approval of the grants officer). All pre-award costs are incurred at the recipient's risk; therefore, the Government is under no obligation to reimburse such costs if for any reason the recipient does not receive an award or if the award is less than anticipated and inadequate to cover such costs. Pre-award costs, as incurred by the recipient, must be necessary for the effective and economical conduct of the project, and the costs must be otherwise allowable in accordance with the appropriate cost principles;
 - (3) Carrying forward un-obligated balances to subsequent funding periods, if applicable;
 - (4) Transferring of funds among direct cost categories, functions and activities for awards except as provided in Paragraph b(5) below, however, no federal appropriation or part thereof may be transferred to be used for purposes other than those consistent with the original intent of the appropriation;
- b. Recipients shall request prior approval for all other plan changes in accordance with 32 CFR 32.25, including but not limited to the following approvals required by OMB Circulars A-21 and A-110:
 - (1) Change in the scope or objectives of the Research Project to include, but not be limited to, (a) the methodology or experiment when such is stated in the agreement as a specific objective; (b) the stated objectives of the research effort; or (c) the phenomenon or phenomena under study.
 - (2) Any request for additional funding.
 - (3) Change in program director or to continue the research work during a continuous period in excess of three (3) months without the participation of an approved program director; or change in other key personnel.
 - (4) Exclusive of supplies, material, equipment or general support services, the award of a subcontract or sub-grant to accomplish substantial programmatic work required in the agreement to be performed by the prime Recipient.
 - (5) Transfer of funds among all cost elements when the cumulative amount of such transfers exceeds or is expected to exceed 15% of the total budget last approved by the Grants Officer.

- (6) Unless identified in the budget incorporated as part of the agreement, expenditures for general-purpose equipment and specific purpose equipment costing \$5,000 or more.
- (7) Unless identified in the budget incorporated as part of the agreement, expenditures for foreign travel.
- (8) The estimated entire travel category exceeds 25% of the incorporated budget amount.
- (9) Any purchase of real property using agreement funds.

6. AUDITS

Recipients and sub-recipients that are institutions of higher education or other non-profit organizations (including hospitals) shall be subject to the audit requirements contained in the Single Audit Act Amendments of 1996 (31 U.S.C. 7501-7507) and revised OMB Circular A-133 "Audits of Institutions of Higher Education and Non-Profit Institutions."

7. PROCUREMENT STANDARDS

Recipients systems for acquiring goods and services under awards shall comply with 2 CFR Part 215. The recipient shall, if later requested, make available for the Government's pre-award review, procurement documents such as request for proposals or invitations for bids, independent cost estimations for bids, independent cost estimates, etc.

8. SUBAWARDS/FLOW-DOWN REQUIREMENTS

- 1) Any legal entity that receives an award from a DoD component shall apply the provisions of Part 32 of the DoD Grant and Agreement Regulations, DoD 3210.6-R to sub-awards with institutions of higher education, hospitals, and other non-profit organizations. Thus, a governmental or for-profit organization, whose prime award from a DoD Component is subject to 32 CFR part 33 or part 34, respectively, applies this part to sub-awards with institutions of higher education, hospitals, or other non-profit organizations. It should be noted that sub-awards are for the performance of substantive work under awards, and are distinct from contracts for procuring goods and services. It should be further noted that non-profit organizations that implement Federal programs for the States are also subject to State requirements.
- 2) All contracts awarded by a Recipient, including those for amounts less than the simplified acquisition threshold, shall contain the following provisions as applicable:
 - a. Equal Employment Opportunity - All contracts shall contain a provision requiring compliance with E.O. 11246 (3 CFR, 1964-1965 Comp., p. 339), Equal Employment Opportunity, as amended by E.O. 11375 (3 CFR, 1966-1970 Comp., p. 684), Amending Executive Order 11246 Relating to Equal

Employment Opportunity, and as supplemented by regulations at 41 CFR chapter 60, Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.

- b. Rights to Inventions Made Under a Contract, Grant or Cooperative Agreement - Contracts, grants, or cooperative agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the Recipient in any resulting invention in accordance with 37 CFR part 401, Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements.
- c. Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended - Contracts and sub-awards of amounts in excess of \$100,000 shall contain a provision that requires the recipient to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.). Violations shall be reported to the responsible DoD component and the Regional Office of the Environmental Protection Agency (EPA).
- d. Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) - Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the Recipient.
- e. Debarment and Suspension (E.O.s 12549 and 12689) - Contract awards that exceed the simplified acquisition threshold and certain other contract awards shall not be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement and Non-procurement Programs in accordance with E.O.s 12549 (3 CFR, 1986 Comp., p.189) and 12689 (3 CFR, 1989 Comp., p. 235), Debarment and Suspension. This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the simplified acquisition threshold shall provide the required certifications regarding its exclusion status and that of its principals.

3) FFATA/FSRS Reporting: The Recipient and sub-recipients shall report sub-awards and executive compensation on the <http://www.fsrs.gov> website. Unless you are exempt, see paragraph a below, you must report each action that obligates \$25,000 or more in Federal funds that does not include Recovery funds, as defined in section 1512(a)(2) of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_public_laws&docid=f:publ005.111 for a sub-award to an entity (see definitions in paragraph b below).

a. Exemptions

If, in the previous tax year, you had gross income, from all sources, under \$300,000, you are exempt from the requirements to report:

- 1) Sub-awards, and
- 2) The total compensation of the five most highly compensated executives of any sub-recipient.

b. Definitions. For purposes of this award term:

1) Entity means all of the following, as defined in 2 CFR part 215 <http://www.gpo.gov/fdsys/pkg/CFR-2010-title2-vol1/xml/CFR-2010-title2-vol1-part215.xml> :

- i. A Governmental organization, which is a State, local government, or Indian tribe;
- ii. A foreign public entity;
- iii. A domestic or foreign nonprofit organization;
- iv. A domestic or foreign for-profit organization;
- v. A Federal agency, but only as a sub-recipient under an award or sub-award to a non-Federal entity.

2) Executive means officers, managing partners, or any other employees in management positions.

3) Sub-award:

- i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible sub-recipient.
- ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. __ .210 of the attachment to OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations").

- iii. A sub-award may be provided through any legal agreement, including an agreement that you or a sub-recipient considers a contract.
- 4) Sub-recipient means an entity that:
- i. Receives a sub-award from you (the recipient) under this award; and
 - ii. Is accountable to you for the use of the Federal funds provided by the sub-award.
- 5) Total compensation means the cash and noncash dollar value earned by the executive during the recipient's or sub-recipient's preceding fiscal year and includes the following [for more information see 17 CFR 229.402 <http://www.gpo.gov/fdsys/pkg/CFR-2010-title17-vol2/xml/CFR-2010-title17-vol2-sec229-402.xml> (c)(2)]:
- i. Salary and bonus.
 - ii. Awards of stock, stock options, and stock appreciation rights. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.
 - iii. Earnings for services under non-equity incentive plans. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.
 - iv. Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.
 - v. Above-market earnings on deferred compensation which is not tax-qualified.
 - vi. Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.

9. PROPERTY STANDARDS

- a. Unless specified otherwise in the "Miscellaneous Provisions" paragraph of the agreement, title to all exempt tangible personal property purchased with agreement funds shall be vested in the Recipient upon acquisition in accordance with 2 CFR Part 215.

- b. Recipients are subject to applicable regulations governing patents and inventions, including Government-wide regulations issued by the Department of Commerce at 37 CFR Part 401, "Rights to Inventions Made by Non-profit Organizations and Small business Firms under Government Grants, Contracts and Cooperative Agreements."
- c. Intangible property is defined in OMB Circular A-110. The rights of the agreement parties concerning these intangible properties shall be as stated in Part 36 of OMB Circular A-110.
- d. Invention reports shall be filed at least annually and at the end of the period of the Cooperative Agreement. Annual Reports are due 60 calendar days after the anniversary date of the agreement, and final reports are due six (6) months after the expiration of the final research period. The Recipient shall use DD Form 882, Report of Inventions and Subcontracts, to file the invention reports, as found at <http://www.onr.navy.mil/Contracts-Grants/manage-grant/grants-forms-download.aspx>. Negative reports are required. The agreement shall not be closed out until all invention reporting requirements are met.

10. TECHNICAL REPORTING REQUIREMENTS

Technical performance reports shall be submitted in accordance with OMB Circular A-110 and the agreement schedule. Performance reports shall generally contain brief information on each of the following:

- a. A summary of actual accomplishments along with a comparison with the goals and objectives established for the period, the findings of the investigator, or both;
- b. Reasons why established goals were not met, if appropriate;
- c. Other pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs;
- d. Identification of work planned during the coming reporting period; and
- e. Changes in key personnel.

11. FINANCIAL REPORTING REQUIREMENTS

- a. All financial reporting required by this agreement shall be prepared on a cash basis as required by OMB Circulars A-110 and A-21 and as detailed below. Recipients shall submit the following, which can be downloaded from <http://www.onr.navy.mil/Contracts-Grants/manage-grant/grant-resources.aspx>:

- 1) Report of Federal Cash Transaction (SF 425), shall be submitted quarterly, within 30 calendar days following the completion of the quarter. A final report shall also be submitted within 90 calendar days following the completion of the agreement.
- b. All reports listed above, shall be submitted to the office performing administrative duties (see Paragraph 11 of the agreement schedule), with a copy submitted to the Grant Officer's Technical Representative listed in Paragraph 6 of the agreement schedule.

12. RECORDS

Retention and access requirements for records of this agreement shall be as specified in 32 CFR 32.53.

13. TERMINATION AND ENFORCEMENT

OMB Circular A-110 and DoD 3210.6-R set forth uniform suspension, termination and enforcement procedures. All matters relating to termination and enforcement shall conform to these sections of the Code of Federal Regulations (CFR).

14. DISPUTES, CLAIMS, AND APPEALS

- a. Disagreements regarding matters of fact between the Recipient and the Government which arise during performance of the agreement shall be resolved by negotiation to the maximum extent practicable. If agreement cannot be reached after a reasonable attempt, the Grant Officer will issue a final decision in writing to the Recipient.
- b. The final decision will permit the Recipient to appeal the decision within 30 calendar days after receipt of such notification. Appeals will be resolved at the Headquarters, Department of Army level who may, at their option, resort to non-binding alternative disputes resolution. A decision will be final and not subject to further administrative appeal.
- c. If the Recipient refuses to participate in, or does not accept the results of the above procedures, they may bring such formal claims as are authorized by 28 U.S.C. 1491 or other applicable statutes.

15. AFTER-THE-AWARD REQUIREMENTS

Closeout, subsequent adjustments, continuing responsibilities, and collection of amounts due are subject to the requirements in 2 CFR Part 215.

16. RESEARCH RESPONSIBILITY

- a. The Recipient shall bear primary responsibility for the conduct of the research and shall exercise judgment towards attaining the stated objectives within the limits of the agreement's terms and conditions.
- b. The program director specified in the agreement document shall be continuously responsible for conduct of the research project and shall be closely involved with the project. The program director, operating within the policies of the Recipient, is in the best position to determine the means by which the work may be conducted most effectively.
- c. The Recipient shall advise the Government if the program director shall, or plans to, devote substantially less effort to the work than specified in the budgetary portion of the agreement document.

17. ORDER OF PRECEDENCE

Any inconsistency or conflict in the terms or conditions specified in this agreement shall be resolved according to the following order of precedence:

- a. Provisions of Public Law applicable to this agreement.
- b. The Cooperative Agreement Schedule.
- c. General Terms and Conditions for Cooperative Agreements with Educational Institutes and Other Nonprofit Organizations (this Attachment A).
- d. Recipient's Proposal.

18. PUBLICATION AND ACKNOWLEDGMENT

- a. Publication. The Recipient is encouraged to publish results of this project, unless classified, in appropriate journals. One (1) copy of each paper planned for publication shall be submitted to the Grant Officer's Technical Representative simultaneously with its submission for publication. Copies of all publications resulting from the research shall be forwarded to the Government as they become available, even though publication may in fact occur subsequent to the termination date of this agreement.
- b. Acknowledgment. The Recipient agrees that in the release of information relating to this agreement, such release shall include a statement to the effect that the project or effort depicted was or is sponsored by the Department of Defense, and that the content of the information does not necessarily reflect the position or the policy of the government, and no official endorsement should be inferred. For purposes of this article, information includes news releases, articles, manuscripts, brochures, advertisements, still and motion pictures, speeches, trade association proceedings, etc.

19. CLASSIFIED INFORMATION

The Recipient is not authorized access to classified security information in the conduct of the agreement. Should it appear that access to such information is desirable; the Recipient shall advise the Government and request clearance for the investigator. Should information be developed in the course of work under this agreement that, in the judgment of the program director or the Recipient, should be classified, the Government shall be notified immediately.

20. SITE VISITS

The Government, through authorized representatives, has the right, at all reasonable times, to make site visits to review project accomplishments and to provide such technical assistance as may be required. If any site visit is made by the Government on the premises of the Recipient, a sub-recipient, or contractor, the Recipient shall provide, and shall require its sub-recipients and contractors to provide, all reasonable facilities and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations will be performed in such a manner as will not unduly interfere with or delay the work.

21. FUNDING INCREMENTS AND/OR OPTIONS

The recipient is advised that the grantor's obligation to provide funding for subsequent funding increments and/or options included in this cooperative agreement is contingent upon (i) satisfactory performance and (ii) the availability of funds. Accordingly, no legal liability on the part of the grantor to make subsequent funding increments and/or options exists unless or until (i) funds are made available to the grantor and notice of such availability is confirmed in writing to the recipient, and (ii) performance of the research is deemed satisfactory in the judgment of the Grant Officer's Technical Representative.

22. SAFETY CLAUSE

PROCESS FOR OBTAINING CURRENT REQUIREMENTS OF THE U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL (EM 385-1-1)

Contractors are required to comply with the latest version, and all posted changes, of the U.S. Army Corps of Engineers Safety and Health Requirements Manual in effect on the issue date of this solicitation. EM 385-1-1 and changes are available on the Internet at

<http://www.usace.army.mil/SafetyandOccupationalHealth/SafetyandHealthRequirementsManual.aspx>. Prior to making an offer, offerors should check the referenced website for the latest changes. No separate payment will be made for compliance with the requirements of this paragraph, or for compliance with other safety requirements of the contract.

23. Patent Rights

37 CFR 401.14 – Standard patent rights clauses are incorporated by reference

ATTACHMENT B

CERTIFICATION AND REPRESENTATIONS FOR COOPERATIVE AGREEMENTS WITH EDUCATIONAL AND OTHER NONPROFIT INSTITUTIONS

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1. DEBARMENT AND SUSPENSION

Instructions for Compliance

- a. By signing and submitting this proposal, the recipient agrees to comply with the requirements regarding debarment and suspension in Subpart C of 32 CFR Part 25, which implements E.O. 12689 [3 CFR, 1986 Comp., p. 189]; E.O. 12689 [3 CFR, 1989 Comp., p.235]; and Sec.2455 of Federal Acquisition and Streamlining Act of 1994 (Pub. L.103-355). The recipient also agrees to comply with Subpart C to persons at the next lower tier with whom the recipients enters into transactions that are “covered transaction” under Subpart B of 32 CFR Part 25.
- b. The compliance with this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the recipient knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
- c. The recipient shall provide immediate written notice to the department or agency to which this proposal is submitted if at any time the recipient learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- d. The terms "covered transaction", "debarred", "suspended", "ineligible", "lower tier covered transaction", "recipient", "person", "primary covered transaction", "principal", "proposal", and "voluntarily excluded", as used in this clause have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the administering office for assistance in obtaining a copy of those regulations.
- e. The recipient agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- f. The recipient further agrees by submitting this proposal that it will include the clause titled "Compliance Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Covered Transaction", provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

- g. A recipient in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A recipient may decide the method and frequency by which it determines the eligibility of its principals.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized in paragraph 6 of these instructions, if a recipient in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Compliance Regarding Debarment, Suspension,
and Other Responsibility Matters - Primary Covered Transactions

- a. The recipient certifies to the best of its knowledge and belief, that it and its principals:
 - 1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;
 - 2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of a Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - 3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - 4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

- 5) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.
2. COMPLIANCE REGARDING DRUG-FREE WORKPLACE (Please note that the term “grant” as used in this certification represents either grants or cooperative agreements, and the term “grantee” refers to the recipient of either a grant or cooperative agreement.)

Instructions for Compliance

- a. By signing and/or submitting this application or grant agreement the recipient agrees to comply with the requirements regarding drug-free workplace requirements in Subpart B (or Subpart C, if the recipient is an individual) of 32 CFR part 26, which implements sec. 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C.701, et seq.).
- b. The compliance set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. If it is later determined that the grantee knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, the agency, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act.
- c. For grantees other than individuals, Alternate I applies.
- d. For grantees that are individuals, Alternate II applies.
- e. Workplaces under grants, for grantees other than individuals, need not be identified on the certification. If known, they may be identified in the grant application. If the grantee does not identify the workplaces at the time of application, or upon award, if there is no application, the grantee must keep the identity of the workplace(s) on file in its office and make the information available for Federal inspection. Failure to identify all known workplaces constitutes a violation of the grantee’s drug-free workplace requirements.
- f. Workplace identifications must include the actual address of buildings (or parts of buildings) or other sites where work under the grant takes place. Categorical descriptions may be used (e.g., all vehicles of a mass transit authority or State highway department while in operation, State employees in each local unemployment office, performers in concert halls or radio studios).
- g. If the workplace identified to the agency changes during the performance of the grant, the grantee shall inform the agency of the change(s), if it previously identified the workplaces in question (see paragraph e).

- 1) Definitions of terms in the Non-procurement Suspension and Debarment common rule and Drug-Free Workplace common rule apply to this certification. Grantees' attention is called, in particular, to the following definitions from these rules:

Controlled substance means a controlled substance in schedules I through V of the Controlled Substance Act (21 U.S.C. 812), and as further defined by regulation (21 CFR 1308.11 through 1308.15);

Conviction means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

Criminal drug statute means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, use, or possession of any controlled substance;

Employee means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) All "direct charge" employees; (ii) all "indirect charge" employees unless their impact or involvement is insignificant to the performance of the grant; and, (iii) temporary personnel and consultants who are directly engaged in the performance of the work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantee's payroll; or employees of sub-recipients or subcontractors in covered workplaces).

Compliance Regarding Drug-Free Workplace Requirements

Alternate I. (Grantees Other Than Individuals)

- a. The grantee certifies that it shall or shall continue to provide a drug-free workplace by:
 - 1) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying actions that shall be taken against employees for violation of the prohibition:
 - 2) Establishing ongoing drug-free awareness program to inform employees about—
 - a) The dangers of drug abuse in the workplace;

- b) The grantee's policy of maintaining a drug-free workplace;
 - c) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - d) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.
- 3) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
 - 4) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will—
 - a) Abide by the terms of the statement; and
 - b) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
 - 5) Notifying the agency in writing, within ten calendar days after receiving notice under paragraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grants officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
 - 6) Taking one of the following actions, within 30 calendar days of receiving notice under paragraph (d)(2), with respect to any employee who is so convicted—
 - a) Taking appropriate personnel action against such employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - b) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
 - 7) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).
- b. The grantee may insert in the space provided below the site(s) for the performance of the work done in connection with the specific grant:

Place of performance (Street address, city, county, state, zip code)

Check [] if there are workplaces on file that are not identified here.

Alternate II. (Grantees Who Are Individuals)

- (a) The grantee certifies that, as a condition of the grant, he or she shall not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she shall report the conviction, in writing, within 10 calendar days of the conviction, to every grants officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

3. CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned recipient is providing the Certification at Appendix A to 32 CFR Part 28, to the best of his or her knowledge and belief, that:

- a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- b. If any funds, other than Federal appropriated funds, have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.
- c. The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a

prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Statement of Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions (form may be downloaded from <http://www.onr.navy.mil/Contracts-Grants/manage-contract/contract-forms-download.aspx>).

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

4. NONDISCRIMINATION

- a. By signing the agreement or accepting funds under the agreement, the Recipient and its sub-recipients assure that they shall comply with applicable provisions of the following National policies prohibiting discrimination:
 - 1) Based on race, color or national origin in Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d, et seq.), as implemented by DoD regulations at 32 CFR part 195.
 - 2) Based on race, color, religion, sex, or national origin, in Executive Order 11246[3 CFR, 1964-1965 Comp., p.339], as implemented by Department of Labor regulations at 41 CFR part 60.
 - 3) Based on sex or blindness in Title IX of the Education Amendments of 1972 (20 U.S.C. 1681, et seq.) as implemented by DoD regulations at 32 CFR part 196.
 - 4) Based on age in the Age Discrimination Act of 1975 (42 U.S.C. 6101, et seq.), as implemented by Department of Health and Human Services regulations at 45 CFR part 90.
 - 5) Based on handicap in Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), as implemented by Department of Justice regulations at 28 CFR part 41 and DoD regulations at 32 CFR part 56.
- b. This compliance shall include but is not limited to the following:

- 1) Employment. In connection with performance of work under this agreement, the Recipient agrees not to discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. This provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
- 2) Educational Institutions. If the Recipient is an educational institution, agrees not to discriminate on the basis of race, color, creed, sex, or national origin against any student in selection of personnel for graduate or technical work related to the agreement.
- 3) The Recipient agrees to permit any person or persons designated by the Government access during normal business hours to such books, records, accounts and other sources of information, and facilities as is reasonably necessary to ascertain compliance with the provisions of this agreement.

5. ENVIRONMENTAL STANDARDS

By signing this agreement or accepting funds under this agreement, the Recipient assures that it (and its sub-recipients) shall:

- a. Comply with applicable provisions of the Clean Air Act (42 U.S.C. 7401, et. seq.), as amended and the Clean Water Act (33 U.S.C. 1251, et. seq.), as implemented by Executive Order 11738 [3 CFR, 1971-1975 Comp., p. 799] and Environmental Protection Agency (EPA) rules at 40 CFR part 32. In accordance with the EPA rules, the recipient further agrees that it will:
 - Not use any facility on the EPA's List of Violating Facilities in performing any award that is nonexempt under 40 CFR 15.5, as long as the facility remains on the list.
 - Notify the awarding agency if it intends to use a facility in performing this award that is on the List of Violating Facilities or that the recipient knows has been recommended to be placed on the List of Violating Facilities.
- b. Identify to the awarding agency any impact this award may have on:
 - 1) The quality of the human environment, and provide help the agency may need to comply with the National Environmental Policy Act (NEPA, at 42 U.S.C. 4321, et. seq.) and to prepare Environmental Impact Statements or other required environmental documentation. In such cases, the Recipient agrees to take no action that will have an adverse environmental impact (e.g., physical disturbance of a site such as breaking of ground) until the agency provides written notification of compliance with environmental impact analysis process.

- 2) Flood-prone areas, and provide help the agency may need to comply with The National Flood Insurance Act of 1968 and Flood Disaster Protection Act of 1973 (42 U.S.C. 4001, et. Seq.), which require flood insurance, when available, for federally assisted construction or acquisition in flood prone areas.
- 3) Coastal areas, and provide help the agency may need to comply with the Coastal Zone Management Act of 1972 (16 U.S.C. 1451, et Seq.), concerning protection of U.S. coastal resources.
- 4) Coastal barriers, and provide help the agency may need to comply with the Coastal Barriers Resource Act (16 U.S.C. 3501, et. Seq.), concerning preservation of barrier resources.
- 5) Any existing or proposed component of the National Wild and Scenic Rivers system, and provide help the agency may need to comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271, et seq.).
- 6) Underground sources of drinking water in areas that have an aquifer that is the sole or principal drinking water source, and provide help the agency may need to comply with the Safe Drinking Water Act (42 U.S.C. 300h-3).

6. OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or resident Commissioner, shall be admitted to any share or part of this agreement, or to any benefits arising from it, in accordance with 41 U.S.C. 22.

7. PREFERENCE FOR U.S. FLAG CARRIERS

Travel supported by U.S. Government funds under this agreement shall use U.S.-flag air carriers (air carriers holding certificates under 49 U.S.C. 41102) for international air transportation of people and property to the extent that such service is available, in accordance with the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118) and the interpretative guidelines issued by the Comptroller General of the United States in the March 31, 1981, amendment to Comptroller General Decision B138942.

8. CARGO PREFERENCE

The recipient agrees that it will comply with the Cargo Preference Act of 1954 (46 U.S.C. 1241), as implemented by Department of Transportation regulations at 46 CFR 381.7, which require that at least 50 percent of equipment, materials or commodities procured or otherwise obtained with U.S. Government funds under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned U.S.-flag commercial vessels, if available.

9. MILITARY RECRUITING

As a condition for receipt of funds available to the Department of Defense (DoD) under this award, the recipient agrees that it is not an institution of higher education (as defined in 32 CFR part 216) that has a policy of denying, and that it is not an institution of higher education that effectively prevents, the Secretary of Defense from obtaining for military recruiting purposes (a) entry to campuses or access to students on campuses, or (b) access to directory information pertaining to students. If the recipient is determined, using the procedures in 32 CFR part 216, to be such an institution of higher education during the period of performance of this agreement, and therefore to be in breach of this clause, the Government will cease all payments of DoD funds under this agreement and all other DoD grants and cooperative agreements to the Recipient, and it may suspend or terminate such grants and agreements unilaterally for material failure to comply with the terms and conditions of award.

10. LIVE ORGANISMS

By signing this agreement or accepting funds under this agreement, the recipient assures that it will comply with applicable provisions of the following national policies concerning live organisms:

- a. For human subjects, the Common Federal Policy for the Protection of Human Subjects, codified by the Department of Health and Human Services at 45 CFR part 46 and implemented by the Department of Defense at 32 CFR part 219.
- b. For animals:
 - 1) Rules on animal acquisition, transport, care, handling and use in 9CFR parts 1-4, Department of agriculture rules implementing the Laboratory Animal Welfare Act of 1966 (7 U.S.C. 2131-2156), and guidelines in the National Academy of Sciences (NAS) "Guide for the Care and Use of Laboratory Animals" (1996), including the Public Health Service Policy and Government Principles Regarding the Care and Use of Animals in Appendix D to the guide.
 - 2) Prohibitions of the purchase or use of dogs or cats for certain medical training purposes, in Section 8019 (10 U.S.C. 2241 note) of the Department of Defense Appropriations Act, 1991 (Pub. Law 101-511).
 - 3) Rules of the Department of the Interior (50 CFR parts 10-24) and Commerce (50 CFR parts 217-227) implementing laws and conventions on the taking, possession, transport, purchase, sale, export, or import of wildlife and plants, including the: Endangered Species Act of 1973 (16 U.S.C. 1531-1543); Marine Mammal Protection Act (16 U.S.C. 1361-1384); Lacey Act (18 U.S.C. 42); and Convention of International Trade in Endangered Species of Wild Fauna and Flora.

11. NATIONAL HISTORIC PRESERVATION

The recipient agrees to identify to the awarding agency any property listed or eligible for listing on the National Register of Historic Places that will be affected by this award, and to provide any help the awarding agency may need, with respect to this award, and to comply with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470, et seq.), as implemented by the Advisory Council on Historic Preservation regulations at 36 CFR part 800 and Executive Order 11593 [3 CFR, 1971-1975 Comp., p.559].

12. Concerning the Trafficking Victims Protection Act of 2000: The recipient assures that it will comply with Section 106 (g) of the Trafficking Victims Protection Act of 2000, as amended (22 U.S.C.7104)."

EXHIBIT 1

PROPOSAL

Project Title: Bird usage summary and analysis of bottomland forest management areas in Pool 13 and 18 of the Upper Mississippi River (Number W912HZ-15-SOI-0001)

To: Kisha M. Craig, U.S. Army Engineer Research and Development Center (ERDC), ERDC Contracting Office (ECO), 3909 Halls Ferry Rd., Vicksburg, MS 39180

From: Stephen J. Dinsmore, Department of Natural Resource Ecology and Management, 339 Science Hall II, Iowa State University, Ames, IA 50011; E-mail: cootjr@iastate.edu; Phone: 515-294-1348

PROJECT STAFF

- Dr. Stephen J. Dinsmore (Professor, Iowa State University). Steve will serve as the project PI and will oversee all aspects of the project.
- Kevin T. Murphy (Research Associate II, Iowa State University). Kevin is the ISU liaison to the MSIM project and may assist with data analyses and preparation of the final report.

INTRODUCTION

The U.S. Army Corps of Engineers (USACE) Mississippi River Project encompasses more than 210,000 acres over diverse aquatic and terrestrial habitat that is home to more than 200 species of birds. This region is situated on the important Mississippi River Flyway and has been designated as a Globally Important Bird Area. Much of the area is managed for wildlife, including several refuge sites, although some land is used for other activities including sustainable timber harvest. Long-term surveys have been conducted at some of the project's sites and there is a need to analyze a subset of these data (bird surveys) in the hope that the findings can inform future management actions on the project.

DATA SUMMARY AND ANALYSES

Avian point counts have been conducted at two sites annually since 1983. These surveys were initiated at Huron Island in Pool 18 in 1982 (13 sites) and at Pleasant Creek in Pool 13 in 1985 (5 sites). Within each year a total of four replicate counts are completed (mid-May, mid-June, early August, and early September) to provide information that includes the peaks of spring and fall migration plus the breeding season. Point counts are 10 min in length (reduced to 5 min after 1989) and are conducted under standard bird survey conditions (early morning, light winds, etc.). Counts included all birds detected by sight or sound and include flyovers. Only three observers have collected bird point count data since 1983, thus minimizing concerns about possible observer bias.

In the sections below I outline how I would summarize and analyze the bird point count data collected during this 3-year project, with the understanding that funding for years 2 and 3 is not yet confirmed.

YEAR 1

The first year of work will primarily involve summarizing the data as suggested in the initial Statement of Interest. I've been told that the data are already in an electronic spreadsheet format

so I am not budgeting any time for data entry (although I do expect to do some reformatting as necessary). The specific year 1 tasks I plan to complete are as follows:

1. Provide a bird species list by site (Huron Island and Pleasant Creek) that encompasses the full dataset. I would also subdivide this list by season (spring migration, breeding season, and fall migration) to allow more fine-scale comparisons between the two sites.
2. Calculate relative abundance and frequency of occurrence by species for each site (Huron Island and Pleasant Creek). Bird point count methodology is highly variable with some methods designed to account for detection probability when estimating bird density or abundance. The present dataset uses unlimited radius point counts without distance sampling or time-of-detection information, so it will not be possible to estimate detection probabilities (Buckland et al. 2001). Instead, I will rely on raw count data and sum counts by point and site (aggregated or by season) to calculate a relative abundance for each species. The count data for each species can also be converted to simpler presence/absence data, which will allow me to calculate a frequency of occurrence by species, point, and site.
3. For selected Iowa Species of Greatest Conservation Need (SGCN; Zohrer 2006) and Partners in Flight priority bird species I will also complete linear regression analyses on the relative abundance data to estimate trends across the survey period. The slope of each estimated line (positive, zero, or negative) can then be used to infer whether or not that species' population is increasing, stable, or declining at the surveyed sites.
4. Explore correlations between the aggregated relative abundance of certain bird groups (e.g., a specific habitat guild or Neotropical migrants) and selected environmental disturbances. I would request detailed conversations with USACE staff to determine which factors are of the greatest interest. Minimally, I would propose two analyses as follows:
 - a. Using 3-5 years of data either side of the 1993 flood I would look for possible post-flood effects on relative abundance and species richness.
 - b. Using the full dataset I would look for possible effects of timber harvest on avian richness and relative abundance by examining pre- and post-harvest data at each site. At both sites the pre-harvest data are quite limited (1 year at Huron Island and 1-4 years at Pleasant Creek) and any effect of harvest may be difficult to confirm.

YEAR 2

If funding for additional analyses is secured I would propose further explorations of the dataset and attempt to compare findings to other similar datasets from this region. Some of these analyses are more exploratory than those in year 1, but offer an opportunity to “mine” additional information from this important dataset. The specific year 2 tasks I plan to complete (pending funding) are as follows:

1. Make comparisons between findings from year 1 and additional datasets provided by USFWS for the Big Timber and Keithsburg Divisions of Port Louisa National Wildlife Refuge. These counts have been conducted since 1993 at ten sites within each division at a roughly every-other-year interval. I would expect a copy of the point count data in a digital spreadsheet format and would repeat the analyses outlined in year 1 (see above) as a basis for these comparisons.

2. Explore the feasibility of conducting occupancy analyses (MacKenzie et al. 2002) for selected species of interest (e.g., SGCN or Partners in Flight priority species). The goal of such an analysis is to estimate the proportion of sites that are occupied by a species (in this case a “site” would be a point count location). Such an analysis would ideally have two or more visits during a period of “closure”, which for birds would be the breeding season. I think the best option to meet closure is to use either the May/June or June/August visits (thus 2 per year). I would attempt to use the robust design occupancy model in Program MARK (Burnham and White 1999), which would allow me to estimate occupancy probability (ψ), detection probability (p), and two more parameters associated with meta-population dynamics (probability of extinction [ϵ] and probability of colonization [γ]). This analysis might require me to aggregate the two sites (Huron Island and Pleasant Creek) and won’t work for species that are almost always absent or present during surveys. Because this analysis will require substantial data formatting and analysis time I would propose to work with a small number (maybe 3-5) of priority species.

YEAR 3

If funding for additional analyses is secured I would propose to complete two more tasks, one of which is outlined on the Statement of Interest. These specific tasks are as follows:

1. Compare trends at the four sites analyzed in years 1 and 2 (Huron Island, Pleasant Creek, and the two Divisions at Port Louisa NWR) with datasets from nearby areas for selected species of interest (e.g., SGCN or Partners in Flight priority species). This could include Breeding Bird Survey (BBS) routes or Illinois Natural History Survey data or other data as agreed upon. This could require significant effort on my part to aggregate and format such datasets.
2. One possible analysis not mentioned in the Statement of Interest that may be of interest is a comparison of annual, site-specific estimates of avian diversity. This analysis goes a step beyond a simpler comparison of species richness (as done in year 1) by using the actual counts by species to calculate a diversity index. The most common diversity indices are the Shannon Diversity Index and the Simpson Diversity Index. This would be calculated annually, by site (Huron Island and Pleasant Creek) and I would look for trends in avian diversity across the survey period. An important benefit of this approach when compared to a measure of species richness is that a diversity index incorporates information about the abundance of each species into a “corrected” index of diversity.

Table 1. Schematic showing data analyses by year for the 3-year project.

Task	Year 1	Year 2	Year 3
Provide summary bird species list by site	X		
Summarize relative abundance data by species and site	X		
Summarize frequency of occurrence data by species	X		
Analyze trend information for select SGCN or PIF priority species	X		
Explore correlations between selected species groups and environmental disturbances	X		
Compare findings from year 1 with additional datasets for the Big Timber and Keithsburg Divisions of Port Louisa NWR		X	

Conduct simple occupancy analyses for select SGCN or PIF priority species		X	
Compare trends with data from 4 sites (years 1 and 2) to data from other sources (e.g., BBS or Illinois Natural History Survey)			X
Estimate avian diversity by site and year (2 sites) and look for long-term patterns			X

LITERATURE CITED

- Buckland, S. T., D. R. Anderson, K. P. Burnham, J. L. Laake, D. L. Borchers, and L. Thomas. 2001. Introduction to distance sampling. Oxford University Press, New York.
- MacKenzie, D. I., J. D. Nichols, G. B. Lachman, S. Droege, J. A. Royle, and C. A. Langtimm. 2002. Estimating site occupancy rates when detection probabilities are less than one. *Ecology* 83:2248-2255.
- White, G. C., and K. P. Burnham. 1999. Program MARK: survival estimation from populations of marked animals. *Bird Study* 46:120-139.
- Zohrer, J. J. 2006. The Iowa Comprehensive Wildlife Action Plan. Iowa Department of Natural Resources, Des Moines, IA.

MEETINGS

I will participate in project meetings with USACE staff to coordinate the plan of work, discuss progress, and resolve technical issues. Meetings will be held on mutually agreeable dates and locations or by telephone conference. Less formal interaction and collaboration will be conducted as needed.

TRAVEL

This project will not require daily travel other than for project staff to attend one or more meetings with USACE personnel to discuss project plans and provide updates. I will not be requesting any reimbursement for this travel.

REPORTS AND DELIVERABLES

In accordance with USACE guidelines, for each of the three project years (see above) I agree to provide the following reports:

1. A draft final report at least one month prior to the end of the funding year. Each report will include a brief introduction, a section for each project task (4 in year 1 and 2 each in years 2 and 3), and said report will be reviewed by USACE personnel within 15 days.
2. A final report incorporating USACE comments will be submitted no later than 15 days after receipt of USACE comments. This report will be furnished in both paper and electronic formats.

BUDGET AND JUSTIFICATION (YEAR 1 ONLY)

Item	Cost
Salary and benefits	
PI salary (\$10,162/month *1.2738 months)	\$12,944
PI benefits (31.5%)	\$4,077
Travel	\$0
Materials and supplies	\$0
Equipment	\$0
<i>Total direct costs</i>	\$17,021
<i>Indirect costs (17.5%)</i>	\$2,979
TOTAL	\$20,000

The budget justification includes the following:

1. Salaries/labor. Salary is for the PI (Stephen J. Dinsmore) only and is budgeted at his current Iowa State University salary rate. Note: I am a B-Base (9-month) employee, so the monthly salary is calculated as my annual salary (\$91,451) divided by 9. See attached ISU annual salary slip for FY 2016.
2. Fringe benefits. The official benefit rates for Iowa State University are available at: <http://www.ospa.iastate.edu/proposal/preparation/benefits>. The benefits rate for the PI per ISU policy is 31.5%.
3. Travel. No travel is budgeted for this project.
4. Materials/supplies. No materials or supplies are budgeted for this project.
5. Equipment. No equipment is budgeted for this project.
6. Indirect cost. The negotiated rate is 17.5% and a copy of that agreement is attached.