NOTICE OF INTENT TO AWARD

This Funding Announcement is not a request for applications. This announcement is to provide public notice of the Bureau of Reclamation's intention to fund the following project activities without full and open competition.

ABSTRACT	
Funding Announcement	**10SS10FW042**
Project Title	**Pool-Riffle Morphology In Gravel-Bed Rivers**
Recipient	University of Idaho Office of Sponsored Programs PO Box 443020 Moscow, ID 83844-3020
Principle Investigator / Program Manager	Dr. Peter Goodwin Idaho Water Resources Research 322 E. Front Street Boise, ID 83702
Total Anticipated Award Amount	$35,000
Cost Share	Not Required
New Award or Continuation?	New Award
Anticipated Length of Agreement	1.5 years
Anticipated Period of Performance	June 1, 2010 to December 31, 2011
Award Instrument	Cooperative Agreement
Statutory Authority	Reclamation is conducting the Tributary Habitat Program under Fish and Wildlife Coordination Act, and Fish and Wildlife Act
CFDA # and Title	15.517 – Fish and Wildlife Coordination Act
Single Source Justification Criteria Cited	(4) - Unique Qualifier
Reclamation Point of Contact	By mail: Bureau of Reclamation Pacific Northwest Regional Office Attn: Mr. Bryant Lyndaker 1150 N. Curtis Road Boise, ID 83706 By Phone: 208-378-5138 By E-mail: blyndaker@usbr.gov

OVERVIEW

This agreement is being considered as part of the Pacific Northwest Cooperative Ecosystem Studies Unit (CESU). The goal of the Cooperative Ecosystem Studies Units (CESU) Network is to improve the scientific base for managing federal lands by providing resource managers with high quality scientific research, technical assistance and education through working partnerships involving federal agencies, universities, tribal groups, state agencies, and nongovernmental organizations. PNW CESU projects involve the physical, biological, social and cultural sciences to address complex social, cultural, and natural resource management issues.

This proposed research project builds on the foundation of pool-riffle sustainability mechanisms developed by Caamaño (2009). Caamaño presented a predictive criterion that could predict velocity reversal in the one dimensional sense. Further, he explored to hypothesis that velocity reversal is the primary process for ensuring the persistence of pool riffle morphology.

The results of this investigation have wide reaching applicability for instream habitat restoration projects in watersheds funded by Reclamation or other entities. Criteria and knowledge gained from this research project have the potential to provide design guidelines, assess the need for engineered features as well as provide a means for determining design success metrics.

Reclamation's Columbia Snake Salmon Recovery Office (CSRO) receives federal monies to improve and restore salmonid habitat impacted by the construction of federal dams. These mitigation efforts include the design of specific habitat features for several life stages of salmonids in various streams or rivers identified throughout the Northwest.

Reclamation's Pacific Northwest region received funding as part of a Science and Technology grant to investigate pool-riffle sustainability mechanisms. In addition to a field survey to identify the effectiveness of the Caamaño velocity reversal criterion, a physical model of a pool riffle sequence will be developed. The purpose of the physical model will be to measure and monitor the jet flow through pool and riffle features under varying conditions. The flume allows study of the velocity reversal phenomena in concert with sediment deliveries that cannot be accomplished safely or effectively in the field. This model would also afford the opportunity to validate measured field data in addition to numerically modeled output of a pool riffle sequence.

The river cross sectional shapes, at any location along the watercourse, are a function of the flow, the quantity and character of the sediment in movement through each section, and the character or composition of the materials making up the bed and banks of the channel (Leopold et al. 1964; Knighton, 1998; Federal Interagency Stream Corridor Restoration Working Group, 1998). Poolriffle sequences are one of the possible river reach morphologies created by these interactions.
Many restoration projects attempt to restore pool morphology in a sustainable and minimum maintenance manner. This proposal addresses three important aspects of the restoration design and assessment:

1. The design of sustainable pools in a restoration project requires either an empirical analysis (such as the Rosgen methodology) or a full 3 dimensional hydrodynamic and sediment transport model. For the latter analysis, few projects have the budget to conduct a thorough modeling approach.
2. When selecting reaches for restoration or deciding whether a particular feature within a restoration reach should be left untouched, it is important to have a methodology for assessing whether the pool will be stable with or without engineering features.
3. There is increasing external pressure to develop performance criteria for assessing the success of stream restoration projects (for example, Bernardt et al., 2005). To minimize resources in these performance metrics, it is very useful to have indicators that are quickly and easily assessed in the field (Palmer et al., 2005, Federal Interagency Stream Corridor Restoration Working Group, 1998).

In order to verify these criteria over a broader range of field conditions, the following tasks are proposed:

Activity 1: Field Verification of Pool Sustainability Criteria: Six Reclamation restoration projects will be selected and the pool sustainability criteria will be tested for projects in the Northwest.

Activity 2: Laboratory Verification: The criterion assumes the gravel bed river is supply limited. This is usual for most systems but undisturbed watersheds (for example logging, development, grazing or wildfire can alter this balance). To assess the response of the pool to sediment pulses or artificially high sediment loads it is necessary to measure the differential sediment transport between the pool and riffle. This is very difficult and hazardous to do in the field at the high flow conditions when the geomorphically significant sediment transport is occurring. To investigate the relevance of the simple criteria in high sediment delivery systems and whether the simple criterion should be modified under conditions of high sediment loads, a laboratory simulation sediment transport through a pool-riffle sequence will be simulated in the large-scale flume at the Idaho Water Center located in Boise, Idaho.

RECIPIENT INVOLVEMENT

Under this agreement, the UI along with Reclamation hydrologists will develop a physical model and perform field surveys. The result of this investigation would provide documentation of guidelines applicable in the determination of pool sustainability.

RECLAMATION INVOLVEMENT

As part of the Pacific Northwest Cooperative Ecosystem Studies Unit (CESU), Reclamation will provide advice and technical assistance to the project manager throughout project. Reclamations representative will be actively involved in the study, data compilation and reporting. Reclamation will provide data and other assets as needed.

SINGLE-SOURCE JUSTIFICATION

DEPARTMENT OF THE INTERIOR SINGLE SOURCE POLICY REQUIREMENTS
Department of the Interior Policy (505 DM 2) requires a written justification which explains why competition is not practicable for each single-source award. The justification must address one or more of the following criteria as well as discussion of the program legislative history, unique capabilities of the proposed recipient, and cost-sharing contribution offered by the proposed recipient, as applicable.
In order for an assistance award to be made without competition, the award must satisfy one or more of the following criteria: (1) Unsolicited Proposal – The proposed award is the result of an unsolicited assistance application which represents a unique or innovative idea, method, or approach which is not the subject of a current or planned contract or assistance award, but which is deemed advantageous to the program objectives; (2) Continuation – The activity to be funded is necessary to the satisfactory completion of, or is a continuation of an activity presently being funded, and for which competition would have a significant adverse effect on the continuity or completion of the activity; (3) Legislative intent – The language in the applicable authorizing legislation or legislative history clearly indicates Congress' intent to restrict the award to a particular recipient of purpose;

(4) Unique Qualifications – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as location, property ownership, voluntary support capacity, cost-sharing ability if applicable, technical expertise, or other such unique qualifications;

(5) Emergencies – Program/award where there is insufficient time available (due to a compelling and unusual urgency, or substantial danger to health or safety) for adequate competitive procedures to be followed.

Reclamation did not solicit full and open competition for this award based the following criteria:

(4) UNIQUE QUALIFICATIONS

The University of Idaho and Dr. Goodwin have specific and local knowledge of the type of research to be conducted and the expertise to conduct this study. The University has its own laboratory in which to conduct the testing and then to compare results to actually in stream results. Dr. Goodwin is familiar with the Red River restoration project and has specific expertise in river restoration. This expertise and experience is essential for the successful outcome of this project.

STATUTORY AUTHORITY

Fish and Wildlife Coordination Act (16 U.S.C. §§ 661—666c). Additionally, the Commissioner of Reclamation's letter, dated October 30, 2007, delegating "Off-site Habitat Improvements" authority to the Regional Director, Pacific Northwest Region, Bureau of Reclamation.

The Fish and Wildlife Coordination Act, 16 U.S.C. § 661, states in part:

> *For the purpose of recognizing the vital contribution of our wildlife resources to the Nation, the increasing public interest and significance thereof due to expansion of our national economy and other factors, and to provide that wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs through the effectual and harmonious planning, development, maintenance, and coordination of wildlife conservation and rehabilitation for the purposes of sections 661 to 666c of this title in the United States, its Territories and possessions, the Secretary of the Interior is authorized (1) to provide assistance to, and cooperate with, Federal, State, and public or private agencies and organizations in the development, protection, rearing, and stocking of all species of wildlife, resources thereof, and their habitat, in controlling losses of the same from disease or other causes, in minimizing damages from overabundant species, in providing public shooting and fishing areas, including easements across public lands for access thereto, and in carrying out other measures necessary to effectuate the purposes of said sections; (2) to make surveys and investigations of the wildlife of the public domain, including lands and waters or interests therein acquired or controlled by any agency of the United States; and (3) to accept donations of land and contributions of funds in furtherance of the purposes of said sections. [Emphasis added]*
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> *255 DM 14, paragraph 1, states:*
> *The Commissioner, Bureau of Reclamation, is delegated so much of the authority of the Secretary under the Fish and Wildlife Coordination Act, 16 U.S.C. 661 et seq., as is necessary to provide assistance, through grants or cooperative agreements, to public or private organizations for the improvement of fish and wildlife habitat associated with water systems or water supplies affected by Reclamation projects.*