

# Cooperative Ecosystems Studies Units (CESU) Program

- **Heather Burke: National Partnership Program Manager, HQ**
- **Alana Mesenbrink: Natural Resources Specialist, NWS**
- **Tim Darland: Natural Resource Manager, John Day, NWP**

*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*



**US Army Corps  
of Engineers®**



# Topics

- What is the CESU network?
- Where are the regions and who are the partners?
- How do you set up a cooperative agreement with a CESU?
- Example projects
- Lessons learned



US Army Corps  
of Engineers ®



# What is the Cooperative Ecosystems Studies Units (CESU) National Network?

- National network of federal agencies, tribes, academic institutions, state and local governments, NGOs, and other partners working together to provide technical, scientific, and educational support for natural/cultural resource management
- Consists of 390 nonfederal partners (326 of which are universities) and 15 federal agencies (USACE, BIA, BOR, BLM, USFWS, NPS, USFS, USGS, DOD, BOEM, NOAA, NASA, NRCS, USDA, FSA)
- Organized in 17 CESUs representing biogeographic regions in all 50 states and US territories.
- The CESU network partners to provide research, technical assistance, education, and capacity building responsive to science and resource management priorities.



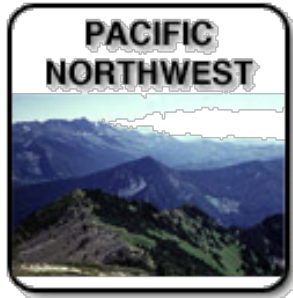
US Army Corps  
of Engineers ®



# How the Units are Divided



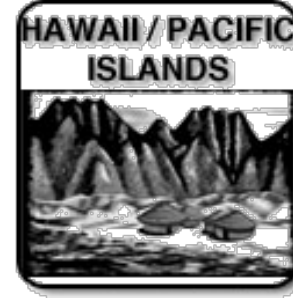
NWAK



PANO



CALI



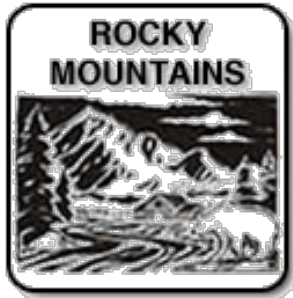
HIPI



DESO



COPL



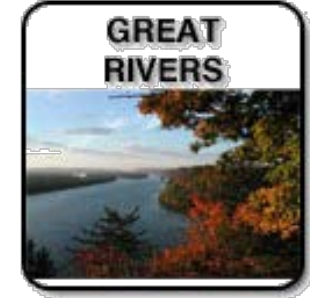
ROMO



GRPL



GUCO



GRRI



GLNF



SOAP



SOFL



PSAC



CHWA



NOAT

\*\*Note: Great Basin not shown, as the Corps has not joined this CESU





# Cooperative Ecosystem Studies Units



# Participating Universities

School	Unit	State			
American University	CHWA	DC			
California Polytechnic State University	CALI	CA	George Washington University	CHWA	DC
California State Polytechnic University, Pomona	CALI	CA	Howard University	CHWA	DC
California State University, Channel Islands	CALI	CA	University of the District of Columbia	CHWA	DC
California State University, Chico	CALI	CA	Delaware State University	CHWA	DE
California State University, Fresno	CALI	CA	University of Delaware	CHWA	DE
California State University, Fullerton	CALI	CA	Anne Arundel Community College	CHWA	MD
California State University, Los Angeles	CALI	CA	Frostburg State University	CHWA	MD
California State University, Monterey Bay	CALI	CA	University of Maryland, Baltimore County	CHWA	MD
California State University, Northridge	CALI	CA			
California State University, Sacramento	CALI	CA	University of Maryland, College Park	CHWA	MD
California State University, Stanislaus	CALI	CA			
Humboldt State University	CALI	CA	University System of Maryland	CHWA	MD
Occidental College	CALI	CA	Garrett College	CHWA	PA
San Diego State University	CALI	CA	Indiana University of Pennsylvania	CHWA	PA
San Francisco State University	CALI	CA			
University of California, Berkeley	CALI	CA	Pennsylvania State University	CHWA	PA
University of California, Davis	CALI	CA	Shippensburg University	CHWA	PA
University of California, Irvine	CALI	CA	Christopher Newport University	CHWA	VA
University of California, Los Angeles	CALI	CA	College of William and Mary	CHWA	VA
University of California, Merced	CALI	CA	George Mason University	CHWA	VA
University of California, Riverside	CALI	CA	James Madison University	CHWA	VA
University of California, San Diego	CALI	CA			
University of California, San Diego - White Mountain Research Station	CALI	CA	University of Mary Washington	CHWA	VA
University of California, Santa Barbara	CALI	CA	University of Richmond	CHWA	VA
University of California, Santa Cruz	CALI	CA	University of Virginia	CHWA	VA
Carnegie Mellon University	CALI	CA, PA	Virginia Commonwealth University	CHWA	VA

# Participating Universities

Arizona State University	COPL	AZ
Northern Arizona University	COPL	AZ
Prescott College	COPL	AZ
University of Arizona	COPL	AZ
Colorado State University	COPL	CO
Fort Lewis College	COPL	CO
University of New Mexico	COPL	NM
Desert Research Institute	COPL	NV
University of Nevada, Reno	COPL	NV
University of Cincinnati	COPL	OH
Oregon State University	COPL	OR
University of Pennsylvania	COPL	PA
University of Texas, San Antonio	COPL	TX
Dixie State University	COPL	UT
Southern Utah University	COPL	UT
University of Utah	COPL	UT
Utah State University	COPL	UT
Utah Valley University	COPL	UT
Weber State University	COPL	UT

Arizona-Sonora Desert Museum	DESO	AZ
Northern Arizona University	DESO	AZ
University of Arizona	DESO	AZ
Howard University	DESO	DC
Universidad de Sonora	DESO	MX
New Mexico State University	DESO	NM
Texas State University, San Marcos	DESO	TX
University of Texas at Arlington	DESO	TX
University of Texas at El Paso	DESO	TX
University of Utah	DESO	UT
West Virginia University	GLNF	WV

Central Michigan University	GLFN	MI
University of Iowa	GLNF	IA
Northern Illinois University	GLNF	IL
Ball State University	GLNF	IN
Indiana State University	GLNF	IN
Indiana University	GLNF	IN
Purdue University	GLNF	IN
University of Notre Dame	GLNF	IN
Southern University and A&M College	GLNF	LA
Grand Valley State University	GLNF	MI
Michigan State University	GLNF	MI
Michigan Technological University	GLNF	MI
Northern Michigan University	GLNF	MI
Fond du Lac Tribal and Community College	GLNF	MN
Hamline University	GLNF	MN
Minnesota State University, Mankato	GLNF	MN
Saint Mary's University of Minnesota	GLNF	MN
University of Minnesota	GLNF	MN
Winona State University	GLNF	MN
Antioch University New England	GLNF	NH
SUNY College of Env Science and Forestry	GLNF	NY
The College at Brockport (SUNY)	GLNF	NY
Cleveland State University	GLNF	OH
Kent State University	GLNF	OH
The Ohio State University	GLNF	OH
University of Toledo	GLNF	OH
Stephen F. Austin State University	GLNF	TX
University of Vermont	GLNF	VT
Northland College	GLNF	WI
University of Wisconsin–La Crosse	GLNF	WI
University of Wisconsin–Stevens Point	GLNF	WI

# Participating Universities

Boise State University	GRBA	ID
Idaho State University	GRBA	ID
University of Idaho	GRBA	ID
Ball State University	GRBA	IN
Desert Research Institute	GRBA	NV
Great Basin College	GRBA	NV
University of Nevada, Las Vegas	GRBA	NV
University of Nevada, Reno	GRBA	NV
Oregon State University	GRBA	OR
Texas A&M University, Kingsville	GRBA	TX
Brigham Young University	GRBA	UT
University of Utah	GRBA	UT
Utah State University	GRBA	UT

Colorado State University	GRPL	CO
Emporia State University	GRPL	KS
Kansas State University	GRPL	KS
Winona State University	GRPL	MN
North Dakota State University	GRPL	ND
University of North Dakota	GRPL	ND
University of Nebraska Medical Center College of Public Health	GRPL	NE
University of Nebraska—Lincoln	GRPL	NE
New Mexico Highlands University	GRPL	NM
Langston University	GRPL	OK
Oklahoma State University	GRPL	OK
University of Oklahoma	GRPL	OK
Black Hills State University	GRPL	SD
South Dakota School of Mines and Technology	GRPL	SD
South Dakota State University	GRPL	SD
University of South Dakota	GRPL	SD
Texas A&M University, AgriLife Research	GRPL	TX
Texas Tech University	GRPL	TX
University of Wyoming	GRPL	WY



# Participating Universities

Drake University	GRRRI	IA	Auburn University	GUCO	AL
Iowa State University	GRRRI	IA	The University of Alabama	GUCO	AL
University of Iowa	GRRRI	IA	Troy University	GUCO	AL
National Great Rivers Research and Education Center	GRRRI	IL	University of South Alabama	GUCO	AL
Southern Illinois University	GRRRI	IL	University of Arkansas, Division of Agriculture	GUCO	AR
University of Illinois at Urbana–Champaign	GRRRI	IL	University of Arkansas, Monticello	GUCO	AR
Indiana University	GRRRI	IN	University of Arkansas, Pine Bluff	GUCO	AR
University of Notre Dame	GRRRI	IN	Florida State University	GUCO	FL
University of Kansas	GRRRI	KS	University of Central Florida	GUCO	FL
Saint Mary's University of Minnesota	GRRRI	MN	University of Florida	GUCO	FL
Winona State University	GRRRI	MN	University of South Florida	GUCO	FL
Lincoln University	GRRRI	MO	University of South Florida	GUCO	FL
Missouri State University	GRRRI	MO	University of West Florida	GUCO	FL
Southeast Missouri State University	GRRRI	MO	Columbus State University	GUCO	GA
University of Missouri	GRRRI	MO	University of Georgia	GUCO	GA
University of Memphis	GRRRI	TN	Valdosta State University	GUCO	GA
			Louisiana State University	GUCO	LA
			Louisiana State University Agricultural Center	GUCO	LA
			Southern University and A&M College	GUCO	LA
			Tulane University	GUCO	LA
			University of Louisiana at Lafayette	GUCO	LA
			University of New Orleans	GUCO	LA
			Mississippi State University	GUCO	MS
			The University of Mississippi	GUCO	MS
			Houston Advanced Research Center (HARC)	GUCO	TX
			Lamar University	GUCO	TX
			Stephen F. Austin State University	GUCO	TX
			Sul Ross State University	GUCO	TX
			Tarleton State University	GUCO	TX
			Texas A&M University, AgriLife Extension	GUCO	TX

# Participating Universities

American Samoa Community College	HIPI	AS
University of Redlands	HIPI	CA
University of Guam	HIPI	GU
Hawaii Community College	HIPI	HI
Honolulu Community College	HIPI	HI
Kapiolani Community College	HIPI	HI
Kauai Community College	HIPI	HI
Leeward Community College	HIPI	HI
Maui Community College	HIPI	HI
Pacific International Center for High Technology Research	HIPI	HI
University of Hawaii, Hilo	HIPI	HI
University of Hawaii, Manoa	HIPI	HI
University of Hawaii, West Oahu	HIPI	HI
Windward Community College	HIPI	HI
Alaska Pacific University	NWAK	AK
University of Alaska, Anchorage	NWAK	AK
University of Alaska, Fairbanks	NWAK	AK
University of Alaska, Southeast	NWAK	AK
Idaho State University	NWAK	ID
Montana State University	NWAK	MT
University of New Hampshire	NWAK	NH

University of Connecticut	NOAT	CT
Harvard University	NOAT	MA
Northeastern University	NOAT	MA
Provincetown Center for Coastal Studies	NOAT	MA
University of Massachusetts Amherst	NOAT	MA
University of Massachusetts Boston	NOAT	MA
University of Maryland, Center for Environmental Science	NOAT	MD
University of Maryland, Eastern Shore	NOAT	MD
Bates College	NOAT	ME
College of the Atlantic	NOAT	ME
Schoodic Education and Research Center Institute	NOAT	ME
University of Maine	NOAT	ME
University of New England	NOAT	ME
Rutgers University	NOAT	NJ
City University of New York	NOAT	NY
Columbia University in the City of New York	NOAT	NY
Cornell University	NOAT	NY
Manhattan College	NOAT	NY
SUNY at Stony Brook University	NOAT	NY
SUNY College of Environmental Science and Forestry	NOAT	NY
University of Rhode Island	NOAT	RI



US Army Corps  
of Engineers®



# Participating Universities

University of British Columbia	PANO	BC
University of Idaho	PANO	ID
Saint Mary's University of Minnesota	PANO	MN
Oregon Institute of Technology	PANO	OR
Oregon State University	PANO	OR
Portland State University	PANO	OR
Southern Oregon University	PANO	OR
University of Oregon	PANO	OR
University of Vermont	PANO	VT
Central Washington University	PANO	WA
Eastern Washington University	PANO	WA
Heritage University	PANO	WA
University of Washington	PANO	WA
Washington State University	PANO	WA
Western Washington University	PANO	WA
Troy University	PSAC	AL
Florida A&M University	PSAC	FL
University of North Florida	PSAC	FL
University of South Florida	PSAC	FL
Ga. Tech Research Institute	PSAC	GA
Georgia Southern University	PSAC	GA
University of Georgia	PSAC	GA
University of West Georgia	PSAC	GA
Towson University	PSAC	MD
Duke University	PSAC	NC
East Carolina University	PSAC	NC
North Carolina State University	PSAC	NC
University of North Carolina at Chapel Hill	PSAC	NC
University of North Carolina Wilmington	PSAC	NC
Clemson University	PSAC	SC
College of Charleston	PSAC	SC

The Citadel	PSAC	SC
University of South Carolina	PSAC	SC
Christopher Newport University	PSAC	VA
Marshall University	PSAC	WV
University of Calgary	ROMO	AB
Colorado State University	ROMO	CO
Metropolitan State University of Denver	ROMO	CO
University of Colorado Boulder	ROMO	CO
University of Colorado Denver	ROMO	CO
University of Northern Colorado	ROMO	CO
Western State Colorado University	ROMO	CO
Boise State University	ROMO	ID
University of Idaho	ROMO	ID
Blackfeet Community College	ROMO	MT
Chief Dull Knife College	ROMO	MT
Little Big Horn College	ROMO	MT
Montana State University	ROMO	MT
Salish Kootenai College	ROMO	MT
University of Montana – Missoula	ROMO	MT
University of Waterloo	ROMO	ON
University of Utah	ROMO	UT
Utah State University	ROMO	UT
Washington State University	ROMO	WA
Northwest College	ROMO	WY
University of Wyoming	ROMO	WY

# Participating Universities

Jacksonville State University	SOAP	AL
The University of the South	SOAP	AL
Florida A&M University	SOAP	FL
University of Kentucky	SOAP	KY
Western Kentucky University	SOAP	KY
Appalachian State University	SOAP	NC
University of North Carolina at Asheville	SOAP	NC
Western Carolina University	SOAP	NC
Ohio University	SOAP	OH
Austin Peay State University	SOAP	TN
East Tennessee State University	SOAP	TN
Lincoln Memorial University	SOAP	TN
Middle Tennessee State University	SOAP	TN
Tennessee State University	SOAP	TN
Tennessee Technological University	SOAP	TN
University of Tennessee	SOAP	TN
University of Tennessee at Martin	SOAP	TN
Virginia Polytechnic Institute and State University	SOAP	VA
Marshall University	SOAP	WV

Barry University	SOFL	FL
Flagler College	SOFL	FL
Florida Atlantic University	SOFL	FL
Florida Gulf Coast University	SOFL	FL
Florida Institute of Technology	SOFL	FL
Florida International University	SOFL	FL
Nova Southeastern University	SOFL	FL
University of Florida	SOFL	FL
University of Miami	SOFL	FL
University of South Florida	SOFL	FL
University of Puerto Rico at Mayagüez	SOFL	PR
University of the Virgin Islands	SOFL	VI



US Army Corps  
of Engineers ®



# CESU Objectives

- Provide usable knowledge to support informed decision making
- Ensure independence and objectivity of research
- Create and maintain effective partnerships among federal agencies and universities to share resources and expertise
- Take full advantage of university resources to benefit faculty and students, encourage professional development of current and future federal scientists, resource managers, and environmental leaders
- Manage federal resources effectively



US Army Corps  
of Engineers ®





# How Does it Work?

- Authority: 10 USC 2358, Research and Development Projects
- MOU between agencies and the CESU network
- USACE has selected and joined 16 of the 17 CESUs
- CESUs function as 'virtual' organizations linking Corps to universities
- Specific research projects are set up through cooperative agreements that address overhead costs, cost-sharing, and allow transfer of funds to the selected university.
- Corps agreements coordinated by Deberay Carmichael and Sherry Whitaker through ERDC [Deberay.R.Carmichael@usace.army.mil](mailto:Deberay.R.Carmichael@usace.army.mil)  
[Sherry.L.Whitaker@usace.army.mil](mailto:Sherry.L.Whitaker@usace.army.mil)
- Host universities coordinate administrative support and access to staff/students
- Projects can be education, research, technical assistance



# Benefits of Using the CESU Network

- Wide network of expertise to draw from
- Additional resources and learning opportunities for students
- Diversity of research scientists and institutions
- Provides a pathway for federal agencies to fund projects at partner institutions with defined overhead/indirect cost rate of 17.5% (average overhead rate outside of CESU network is 51%)
- Cooperative agreement can be issued for 5 years (using options)
- <http://www.cesu.psu.edu/>



US Army Corps  
of Engineers ®

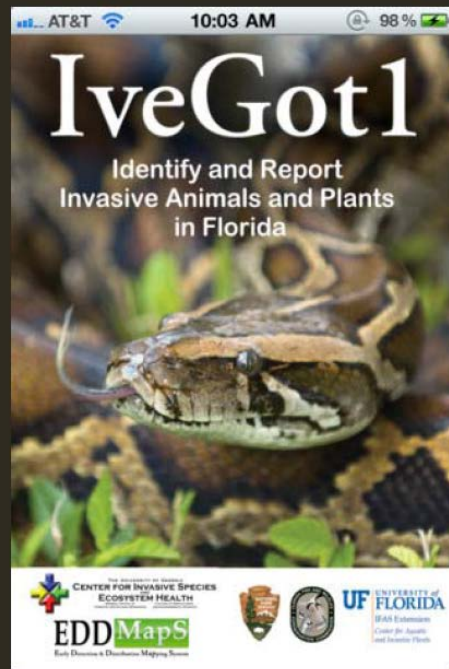


# Example Projects



## Example Projects

### Mobile App to Identify and Track Invasive Exotics in Florida



University of Georgia photo



### Salt Marsh Restoration in Chesapeake Bay



### Archaeological Field School in Hawaii



### Exotic Species Control in South Florida



### Costal Watershed Condition Assessments



# Example Projects



**Humpback Chub Reintroductions and  
PIT-tag Technology**



**Shifting Risk Perceptions of Wildlife  
Disease: A Study of Avian Outbreak**



**Student Internships:  
Warriors Project**



**Remote Sensing Training for the  
Natural Resources Conservation Service**



US Army Corps  
of Engineers®



# Corps CESU Project: Libby Dam

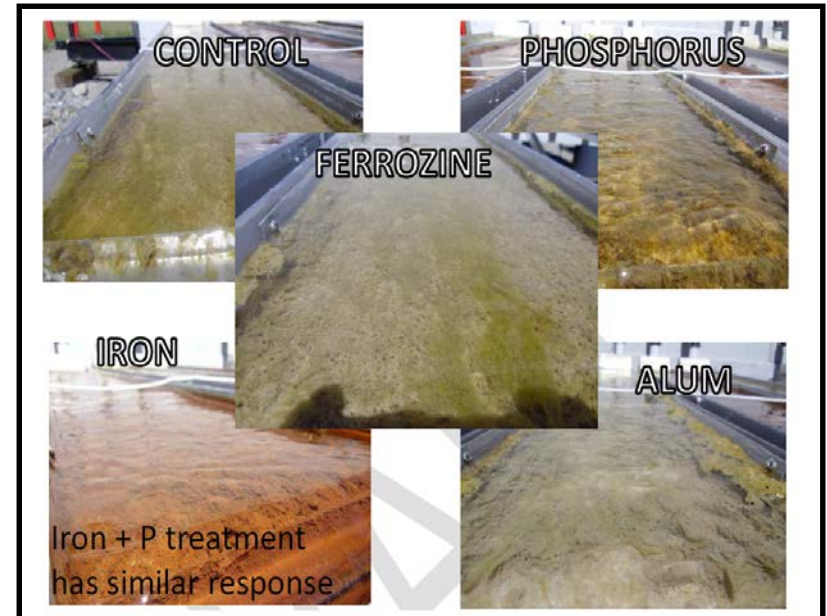
## **\* Study 1 - *Didymosphenia geminata* in the Intermountain Northwest and Long-term Management Strategies for Nuisance Mats**

- Growing issue in the Kootenai River since 2001 with major implications for ecosystem
- Native, but invasive
- Little known about Didymo
- Libby Dam becoming a worldwide research hub





***\*Study 2: Experimental determination of the role of Fe on the growth of *Didymosphenia geminata* in the Kootenai River, Montana, downstream from Libby Dam***



***\*Study 3: In the works...***



US Army Corps  
of Engineers®



# Corps CESU Project – Mississippi River Project (MVR)

## Avian Monitoring Report Objectives

- Iowa State University
- Summarize and analyze >30 years of data
- Monitoring two forest management sites
- Examine management affect on bird usage
- Study trends of 7 species of Greatest Conservation Need (GCN)

## Results

- 184 species identified
- 7 GCN species stable to increasing
- Bird abundance and diversity post harvest stable/increasing
- Future monitoring recommendations

## Benefits

- Comprehensive analysis of data from outside source that staff could never analyze during normal duties
- Support future forestry and T&E species management protocols with partners
- Fairly easy process; minor upfront coordination w/ ERDC and setting up/receiving on MIPR



Pileated Woodpecker



### FINAL REPORT

Project Title: Bird usage summary and analysis of bottomland forest management areas in Pool 13 and 18 of the Upper Mississippi River (Number 5691202-13-800-0001)

Stephen J. Dierksen, Department of Natural Resource Ecology and Management, 550 Science Hall II, Iowa State University, Ames, IA 50011, E-mail: sdierksen@iastate.edu; Phone: 515-231-1348

Design and data collection completed by Peter C. Peterson, Kathy T. McKay, and Rufus T. Davies.

### INTRODUCTION

The U.S. Army Corps of Engineers (USACE) Mississippi River Project encompasses more than 210,000 acres of river channel, 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 synthesize a review of these data (bird surveys) in the hope that the findings can inform future conservation actions on the project.

### DATA OBTAINING AND ANALYSIS

Avian point counts have been conducted at two sites annually since the early 1990s. Those surveys were initiated at Hinton Island in Pool 18 in 1993 (15 sites) and at Pleasant Creek in Pool 13 in 1995 (15 sites). Within each year, a total of four replicate counts are completed (pre-dawn, mid-morning, early afternoon, and early September) to provide information that includes the periods of spring and fall migration plus the breeding season. Point counts are 10 minute lengths (reduced to 5 min after 1999) 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 those observers have collected bird point count data since 1993, thus minimizing concerns about possible observer bias.

The raw data were provided by USACE staff and had been organized and vetted for consistency. In the process of preparing the data for summary and analyses I performed an additional round of data cleaning. I corrected all examples of inconsistent species names, merged "species" that spanned taxonomic name changes (e.g., Northern Oriole was renamed Audubon Oriole during the survey period), and corrected a few other minor errors. I also removed Carolina Chickadee observations as no known events happened close to the survey area, and I merged those individuals with Black-capped Chickadee. Survey data from Pleasant Creek on 11 June 2013 included a phenomenal number and diversity of migrants, so great that six of which (Swainson's Thrush and Orange-crowned, Nighthawk, Bay-breasted, Black-throated, and Wilson's warblers) would represent the latest local record if correct. I am suspicious of these sightings, but retained them for all analysis.

At both sites there were typically four avian surveys per year (exceptions were 2 in 1993 and 3 in 1995 at Hinton Island and 1 in 1995 at Pleasant Creek), roughly one each in May, June,

# Corps CESU Project: John Day/Willow Creek

## Evaluating Flora and Fauna Diversity for Special Status Species Protection

### Why CESU?

- 2016 \$\$ Increment 4 (invasive species)
- Staff shortage/expertise (3 Rangers Total)
  - 13 Rec sites, 2 Class “A” campgrounds (Apr-Oct)
  - ES for 14k acres and 240 shoreline miles
- Need to know “What” in order to manage
  - Master plan outdated (1976)
  - No current assessments
  - OMBIL vegetation data (degraded, transitioning, sustainable)

### CESU Objectives (5 total)

- <https://corpslakes.erdcdren.mil/employees/success.cfm?Id=partner-school&view=Yes>

### Timeline

- |           |   |
|-----------|---|
| – Jan     | Concept   |
| – Feb-Mar | Planning  |
| – Apr     | MIPR, passback with ERDC SME                              |
| – May     | Advertise SOI, Response to SOI (1), Request full proposal |
| – Aug     | Receive full proposal, Technical cost evaluation          |
| – Sep     | Award Cooperative Agreement                               |

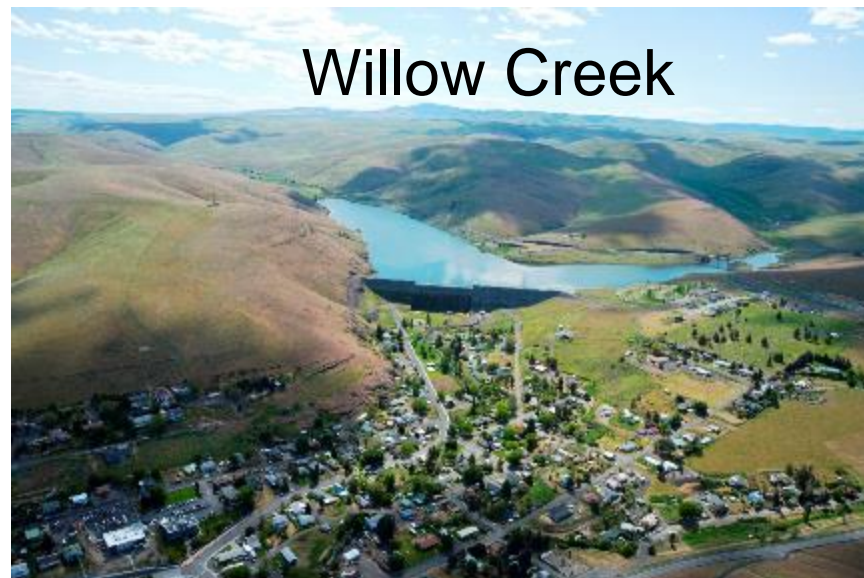


US Army Corps  
of Engineers ®





# Corps CESU Project: John Day/Willow Creek



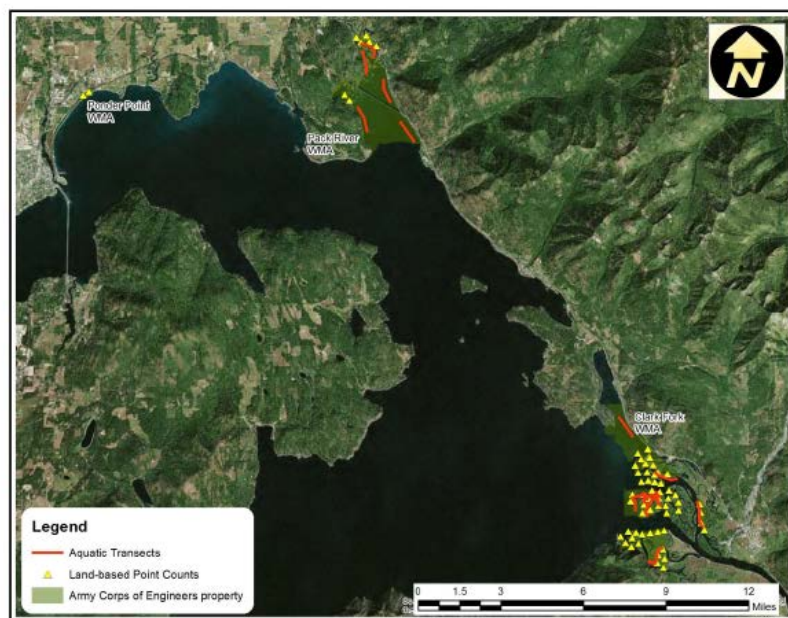
US Army Corps  
of Engineers ®



# Corps CESU Project: Albeni Falls

## Avian Surveys Objectives:

- Identify species, numbers, diversity
- Identify sensitive habitats
- Provide management recommendations



Canada Goose



Peregrine Falcon

157 species identified – 3,383 birds counted  
8 species of Greatest Conservation Need  
19 eBird hotspots identified



# Process to Initiate a Project with a CESU

1. Identify a project and the appropriate CESU region – must be a public benefit and clear R&D element
2. Prepare a statement of interest (SOI) – (like a Scope of Work)
3. Transfer funds via MIPR to ERDC for processing by their grants officer. Typical admin costs = 6% of project cost
4. Grants officer contacts CESU host university to post the SOI for a minimum of 10 days for competition.
5. District technical POC reviews SOIs and prepares a Request for Full Proposal (RFP) to the selected recipient.
6. Technical evaluation of full proposal by District POC
7. Award of cooperative agreement

*Note: Average time to award is 2 – 4 months depending on ERDC workload and priorities*



US Army Corps  
of Engineers ®



# Lessons Learned: John Day/Willow Creek Project

## Communication

- ERDC very helpful in beginning
- Once SOI advertised, all comm. through ERDC Contracting
- RFP (30 days to respond)
- MIPRs
  - Budget staff turnover (learn MIPR process)
  - The project funds should now be obligated in CEFMS and marked "Prompt Payment Exempt"

## Invoicing

- University sends invoice through Office of Naval Research
  - Not required to send to Project
  - Multiple MIPRs
- Project required to send receiving report to ERDC

## Option Years

- University submit modification proposal
- ERDC forward to Project for concurrence

Maximum \$ request: 25% of project total



US Army Corps  
of Engineers ®



# Best Practices

- Start early and plan well
- Work directly with ERDC to coordinate and plan project
- Major benefit for CESU – Option years are available – this makes it convenient to be able to work with graduate schools for Masters and Dissertation students on multi year projects. You can pick up the option years if funded without having to start from scratch again.



US Army Corps  
of Engineers ®



# Resources: NRM Gateway

<https://corpslakes.erdc.dren.mil/partners/cesu/cesu.cfm>

## Cooperative Ecosystem Studies Units (CESU) Network and the Corps Civil Works Program

On 21 June 2005, Mr. Steve Stockton, Deputy Director, Civil Works signed an [MOU](#) authorizing the US Army Corps of Engineers Civil Works Program to join the [CESU Network](#). This gave the Corps the ability to join the 17 individual units of the CESU Network.

The CESU Network provides opportunities for federal agencies, NGO's and Universities to collaborate on research, technical assistance and education in the biological, physical, social and cultural sciences needed to address natural and cultural resource management issues at multiple scales and in an ecosystem context.

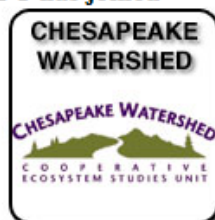
Each CESU is composed of federal agencies, a host university, and partner institutions. CESU agreements allow each of the participating federal agencies to efficiently transfer funds and duty station employees to university partners through cooperative agreements while maintaining responsibility for agency-sponsored activities within CESU's. CESU's are organized around biogeographic areas and linked together in the CESU network.

To date the Engineer Research and Development Center (ERDC) has joined 16 CESU's on behalf of the Corps of Engineers Civil Works Program under the authority of [Title 10 U.S.C. 2358](#). A list of CESU's ERDC has joined is provided below.

Any Corps office, with the appropriate authority, can participate in CESU activities and have work performed under a cooperative agreement by the four CESU's for which the Corps is a member. See the FAQ's for more information on how Corps offices outside ERDC can participate. The process for ERDC offices to initiate work with CESU's is found under the "policy and procedures" button below.

- [Policy & Procedures](#)
- [Program Summary](#)
- [CESU Summaries](#)
- [FAQs](#)
- [District Process to Initiate CESU](#)
- [CESU Network Map](#)
- [Agreements](#)

List of CESU's ERDC has joined





# CESU Study Summaries

## Great Lakes and Northern Forest

- [Potential Effects of Aquatic Nuisance Species on the Behavior of Recreational Anglers, Boaters, and Beachgoers](#)
- [Net Benefits of Recreational Fishing, Beachgoing, and Boating in the Great Lakes, Upper Mississippi River, and Ohio River Basins: A Review of the Literature](#)
- [Net Benefits of Recreational Fishing in the Great Lakes, Upper Mississippi River, and Ohio River Basins](#)
- [St. Marys River Coordinator and Working Group for the International Upper Great Lakes Study](#)
- [IUGLS Ecosystems Study Area Working Group: Investigating the Effects of Changes in Lake Level on Coastal Ecosystems](#)

## Great Rivers

- [Support for the UMRS Navigation and Ecosystem Sustainability Program Science Panel](#)
- [Side Channels of the Impounded and Middle Mississippi River: Opportunities and Challenges to Maximize Restoration Potential](#)
- [Upper Mississippi River System Ecosystem Restoration Objectives 2009](#)
- [Genetic Analysis of the Federally Endangered Winged Mapleleaf Mussel to Aid Proposed Reintroduction Efforts](#)
- [Research to Determine Cultural Affiliation of NAGPRA Remains from Truman, Pomme de Terre, Stockton and Smithville Reservoirs in Missouri](#)
- [Partial Restoration of Natural Hydrology on the Upper Mississippi River System: An Adaptive Management Approach for Water Level Reductions](#)

## Gulf Coast

- [Georeferencing Capabilities and Operational Missions of the Nova 2 Small Unmanned Aircraft System](#)
- [Webbased Hunting Permit Program for Lavon Lake Office, Texas](#)
- [A Water and Sediment Budget for the Lower Mississippi/Atchafalaya River in Flood Years 2008/2010: Implications for Sediment Discharge to the Oceans and Coastal Restoration in Louisiana](#)
- [Development of Riverware Model of the Rio Grande for Water Resources Management in the Paso](#)



# Questions?



160 ClipartIllustration.com



US Army Corps  
of Engineers ®

