

**RESEARCH PACKET – PROJECT IMPACTS DOCUMENTS**

**CAPTURE, MARKING, TRACKING AND REMOVAL OF SEA LIONS  
TO REDUCE PREDATION ON SALMONIDS IN THE BONNEVILLE PROJECT  
BOAT RESTRICTED ZONE IN 2021**

Washington Department of Fish and Wildlife  
Oregon Department of Fish and Wildlife  
Idaho Department of Fish and Game  
Columbia River Intertribal Fish Commission

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## BACKGROUND

Prior to the early 2000s, sea lions were rarely seen near Bonneville Dam. Since that time sea lion numbers and foraging activity in the area have increased significantly. The U.S. Army Corps of Engineers Fisheries Field Unit (USACE FFU) at Bonneville Dam has documented the abundance of California sea lions (CSL) and Steller sea lions (SSL) and the levels of predation on salmonids and sturgeon in the tailrace Boat Restricted Zone (BRZ) since 2002. USACE FFU observations have shown that many of these sea lions are identifiable individuals which have returned year after year to repeatedly forage near the dam.

Concern over this relatively new source of mortality of adult salmonids, particularly those listed as threatened or endangered under the Endangered Species Act, has been expressed by resource managers at USACE FFU, Bonneville Power Administration, National Marine Fisheries Service (NMFS), Oregon Department of Fish and Wildlife (ODFW), Washington Department of Fish and Wildlife (WDFW), Idaho Department of Fish and Game (IDFG), and Columbia River Intertribal Fish Commission (CRITFC) among others. An extensive history of the project can be found at the West Coast Region website of NOAA Fisheries<sup>1</sup>. The purpose of the following information is to describe the pinniped research and management activities to be conducted in and around the BRZ in 2021 by ODFW, WDFW, IDFG and CRITFC.

## OBJECTIVES

- 1) Capture and permanently remove California sea lions (CSLs) and Steller sea lions (SSL) from the Bonneville Dam area as permitted under Marine Mammal Protection Act (MMPA) Section 120(f) by NMFS for sea lion management in the lower Columbia River Basin.
- 2) Improve our understanding of salmonid and at-risk fish stock predation levels below Bonneville Dam.
- 3) Increase our sea lion food habits and prey genetics databases and assess food habits of sea lions present at Bonneville Dam.
- 4) Reduce depredation of fish, reduce sea lion presence, and resultantly limit the recruitment of new pinniped predators to the area below Bonneville Dam.

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<sup>1</sup> <https://www.federalregister.gov/documents/2019/08/30/2019-18751/marine-mammals-pinniped-removal-authority>

## METHODS

Objective 1. Capture and permanently remove, either via humane euthanasia or permanent placement in NMFS-approved zoos or aquaria, CSLs and SSLs present at Bonneville Dam. Capturing sea lions at Bonneville Dam is essential to carry out authorized lethal removal or placement activities.

Capture and transfer to permanent holding facilities (approved zoos or aquaria) is the first option for permanent removal of predatory sea lions from this area. If permanent captivity options are not available, predatory Steller or California sea lions will be captured and chemically euthanized under veterinary supervision.

Due to the addition of Steller sea lion management in fall 2020, and the fact that sea lion management is no longer restricted to particular times of year under new amendments to the MMPA, year around access will be needed to meet management goals. We propose to continue to anchor our floating sea lion trap array in an area downstream of the old navigation lock south of Tower Island where CSL and SSL are typically found resting in the water or hauled out (Figure 1). These traps are currently deployed and will likely remain throughout the year. Our handling barge is currently moored below the old navigation lock on the south side of PH1. Sea lion captures may take place at any time during the year, with an emphasis of capturing CSLs in April and May 2021, and SSLs September through November 2021. For sea lions that utilized the locks to move upstream through the forebay and into the Bonneville Pool, a trap may be located above the dam in the forebay area. Traps will be anchored during capture operations and may be removed to moorings below the old navigation lock at the end of the spring and fall seasons.

As in previous years, once trapping efforts begin and the trap doors are open and ‘armed’, the traps will be monitored regularly day and night by our project staff and by USACE FFU, USDA, Bonneville security, and Park Ranger staff. We also use field cameras and sensors to remotely monitor the status of trap doors and animal presence when traps are ‘armed’ (doors open and traps available to animals). According to our new authorization, any animal present in this area qualifies for removal without requirements for individual identification or resights. For this reason, we do not foresee permanent marking (identification) of individuals, however in some rare cases animals may be marked or outfitted with tracking devices.

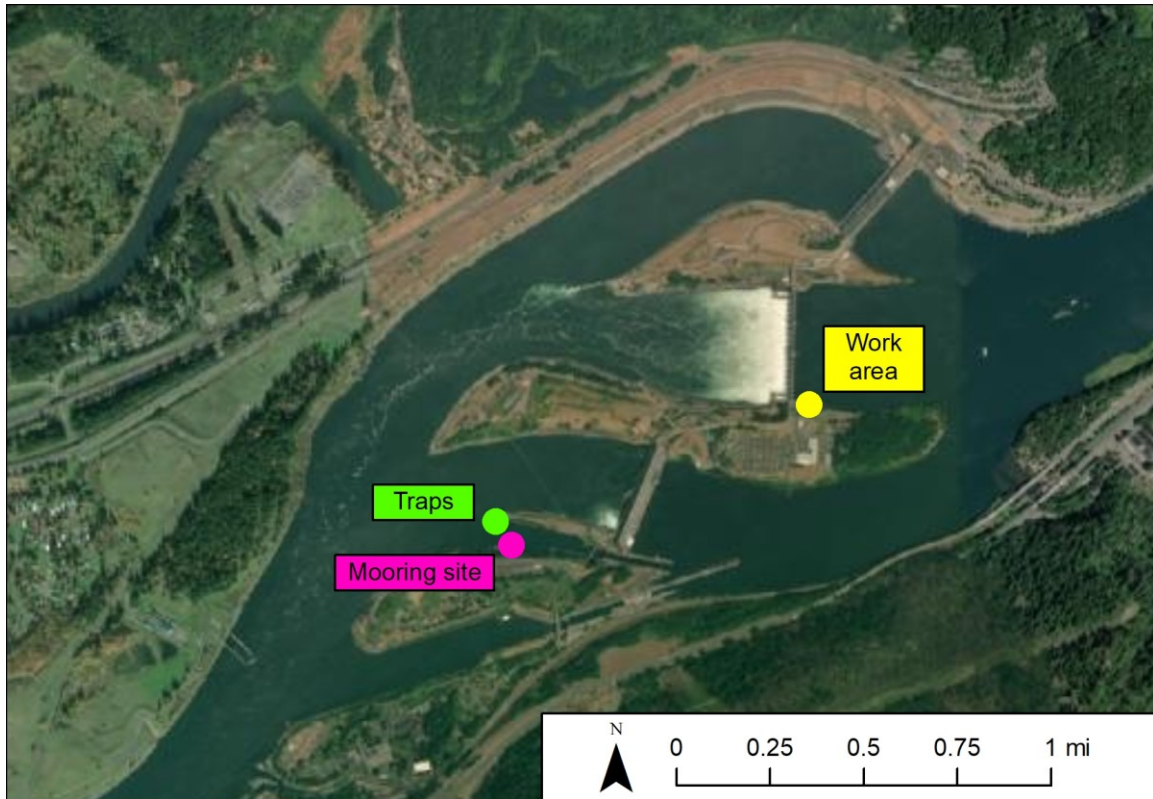


Figure 1. Map of potential trapping locations for sea lions. Most trapping will take place at the trap array located in the old navigation lock next to our equipment mooring site (pink).

We will use our sea lion handling barge (a new barge is currently in fabrication as a result of funds from the Northwest Power and Conservation Council), cages and equipment for handling and marking sea lions in the BRZ. This barge, along with our other vessels, will be used to expedite the removal of captured sea lions. The barge containing sea lions to be removed from the area (or for specific research purposes) is typically locked above the dam early in the morning for transfer of animals to cages in trucks at the gravel boat ramp behind the service building. In some cases – particularly for larger animals - we may request the assistance of the USACE rigging crew for crane use to move animals in transfer cages from water to land or for removal of equipment from the water for maintenance operations on land. At the end of each field season (spring and fall), the barge and traps may be anchored in place or moved to the mooring site below the old navigation lock.

As in previous years, we will require access to and use of workspace inside a fully enclosed, secure building with a ceiling high enough to accommodate a forklift to its full height. For the past several years we have been working in a building located on the upriver, Oregon side of the spillway referred to as “Windy Welder”. The current building has worked very well and has been well-suited to our needs for management of California sea lions, but methodology will either have to be modified, or a new space will be necessary for proper handling of larger Steller sea lions in the coming years and months. Only trained and certified staff will be allowed to operate the forklift. Once again, we are requesting the use

of the forklift several days of each capture week to move animals and cages between trucks, trailers and the work building.

Objective 3. Collect scat (fecal samples) from all areas where sea lions haul out within the BRZ for food habits analysis and genetic identification of salmonid stocks consumed.

As in previous years, we plan to collect sea lion fecal samples as frequently as possible during 2021 to allow us to reconstruct diet and assess pinniped predation on various fish stocks. These collections will be primarily boat-based, but may also include accessing shore-based locations in coordination with USACE staff. Individual samples will be bagged, labeled and frozen for analysis. Sea lion prey identification and potentially genetic analysis will be conducted by ODFW, WDFW and CRITFC staff. Any coded wire fish tags recovered will be recorded and reported to the appropriate parties.

#### JUSTIFICATION OF THE PROPOSED STUDY AREA

Much of the justification for this project is described in the background section of this document. Since Bonneville Dam is the first major restriction to fish passage on the lower Columbia River (RM145), it is the location where most pinniped predation activity is likely to occur. Several years of preliminary work on this issue has been carried out at this location documenting the problem and evaluating various tools and approaches to reducing salmonid losses caused by pinniped predation. Bonneville Dam is the site identified in the MMPA 2020 Section 120(f) lethal removal authorization. The ability to safely capture and remove sea lions in this area has been demonstrated by successful trapping operations conducted from 2007 through 2020.

#### 2021 SCHEDULE

Planning, operations, and safety training. In consultation with Bonneville Project and USACE Fisheries Field Unit staff we will schedule planning meetings, training, and safety reviews annually prior to the initiation of major operations within the BRZ. We will consult regularly throughout the season with USACE staff on all operations. While the bulk of spring trapping operations will end by June, and fall trapping by November, other on-water operations in the BRZ (e.g., trap maintenance and any fall trapping activities) can occur year around.

Trapping operations. Steller sea lion capture operations may occur throughout the winter. We will begin the annual coordinated efforts for capture and removal when California sea lions appear in the area and begin using the traps as resting areas, generally early April. We plan to use our barge to handle and transport sea lions, but may occasionally request the assistance of the USACE rigging crew for the removal of animals in transfer cages to our vehicles on shore. We aim to provide ample notice of our needs to USACE staff, usually planning at least 24 hours ahead of time; however in the case of particularly large animals, notice may be shorter if one is captured and we are unable to feasibly move it using the barge method. If sea lions are regularly using the trap, we anticipate capture and

marking activities to take place 2-4 days per week through the spring season. Spring trapping and marking activities will occur through the end of May, generally concluding by Memorial Day.

Steller sea lion trapping and management efforts by ODFW, IDFG, WDFW and CRITFC are currently on a different timeline than California sea lion management in order to reduce risk to staff and animals. Trap maintenance, scat collection, and camera monitoring will occur year round, however a primary focus on Steller sea lion captures will occur September through November with the possibility for intermittent trapping or maintenance work throughout winter which will require boat work within the BRZ.

The same trap array will be used for Steller sea lion trapping, and animals will either be euthanized on the trap or more likely, moved to an indoor facility for euthanasia and necropsy.

Scat (fecal) sample collections. We plan to opportunistically collect fecal samples year-round from any haul-out site used by pinnipeds within the BRZ that are accessible from shore or by boat, whenever staff are available and samples are likely to be found.

## FACILITIES AND EQUIPMENT REQUIREMENTS

Movement and mooring of the traps in the water will be conducted by our project staff and vessels. At certain times for maintenance or breaks in trapping, we may request permission to moor the traps and handling barge against the existing pilings and in the dead water area below the old navigation lock on the south side of PH1; however with new year-round efforts, we most likely will keep our traps deployed

Once sea lions are captured, we will request to barge these animals through the navigation lock and above the forebay to the gravel ramp behind the Bonneville service building. We have successfully used this ramp over many years to launch and retrieve boats, equipment, and sea lions. We expect trapping to occur 2-4 days per week and will make every attempt to schedule particular days for this activity so that we minimize conflicts with other project work.

We request permission to moor 1-2 vessels at the dock below the navigation lock on a daily basis, as in previous years. Having a boat at this location is essential for quick access to our other vessels moored below the old navigation lock and our traps. This is particularly important for pre-dawn capture operations, security, and the ability to quickly respond to any emergency involving the traps. We will make every effort to keep our boat on the inside of this dock (except during extremely low water conditions). Our other boats and barge will be moored at the log booms below the old navigation lock.

We will require access for our staff to enter and leave both the Oregon and Washington sides of the facility on a daily basis. We request access to the project at night, primarily late evening and pre-dawn hours, to monitor and operate the sea lion traps. Dependent on animal activity, trapping may occur any time of the day or night dependent on animal

behavior. We will contact Bonneville Control upon entry to the project when entering outside of normal business hours.

There may be additional needs related to removal of live or dead sea lions (e.g., use of a forklift and workspace). We will plan to use the immediate area and building at the “Windy Welder” location for handling sea lions to be euthanized, sampled and necropsied post-mortem. Additional requests for assistance or equipment will be discussed with Bonneville Project staff as needed during the work season.

## PROJECT IMPACTS

### Project Services

Due to maintenance requirements and the unpredictability of animals we work with, our staff will require security access to both sides of the Bonneville Project on a daily basis from January 1 – December 31, 2021. We request permission to operate our vehicles on the project to access our sea lion capture equipment (Cascades Island), Service Building boat ramp area (Bradford Island) and moored vessels below the navigation lock (Robins Island). All project staff will require USACE identification badges. Hard keys to access locked areas will be limited to select project staff.

### Security

Since our sea lion capture operations will take place in the BRZ, these activities and equipment will be secure from public access. Our vessels will be used daily in the BRZ and secured nightly at the mooring dock below the navigation lock (one boat) and below the old navigation lock (2 boats and barge). Standard sea lion capture, marking, and release operations should not require additional security. However, increased security including Fish & Wildlife law enforcement teams may be used during any permanent removal operations (e.g., transfer to captivity or lethal removal). At least a moderate level of public interest can be expected, including the potential for protests by some groups opposed to permanent removal operations.

### Safety

#### General

All project staff will read the Corps of Engineers General Safety Requirements Manual (#385-1-1). All staff will receive a safety briefing by USACE staff and a complete orientation of the project, including identification of hazards on land and in the water.

#### BRZ Boat Operations

In addition to the standard review of safe boat operations in the BRZ provided by Ben Hausmann (Bonneville Project), state agency staff will provide boat operators and crew with a thorough briefing to include the following: safety equipment checklists, vessel safety

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checks, review of appropriate clothing and use of floatation gear, radio communication checks (in and out of BRZ) with Bonneville Control, other communication methods and protocols (e.g. cell phones, contact names and numbers), procedures for reporting an emergency, “man over board” equipment and procedures review, etc. We will conduct in-season safety reviews and discussions among our staffs and at the request of Bonneville Project staff to review specific issues that arise during the year.

Job Hazard Analyses

The Job and Activity Hazard Analyses for activities related to this work are attached to this document.

Accident Prevention Plan

An Accident Prevention Plan is included with this application.

**Vessels List**

VESSEL ID	NAME	LENGTH/MAKE	AGENCY	POC
R-5	Research 5	24' Almar	ODFW	Brown, Mike
R-6	Research 6	22' Boston Whaler	ODFW	Wright, Bryan
R-7	Research 7	19' Boston Whaler	WDFW	Edwards, John
WDFW 539	WDFW 539	25' TuffBoat	WDFW	Cady, Brad
WDFW 501	WDFW 501	21' North River	WDFW	Edwards, John
WDFW 31	WDFW 31	22' North River	WDFW	Edwards, John
CRITFC 1	CRITFC 1	22' C-Dory	CRITFC	Hatch, Doug
CRITFC 2	CRITFC 2	26' Pacific Boats	CRITFC	Hatch, Doug

**Vehicles List**

LICENSE	ST	DESCRIPTION	COLOR	AGENCY	POC
E270481	OR	Ford Pickup	White	ODFW	Steingass, Sheanna
E253561	OR	Ford Pickup	White	ODFW	Wright, Bryan
E254783	OR	Ford Pickup	White	ODFW	Brown, Mike
E253557	OR	Ford Pickup	White	ODFW	Valentine, Shay
6878M	WA	Ford Pickup	Green	WDFW	Edwards, John
5840M	WA	Dodge Pickup	Green	WDFW	Edwards, John
G62 4631W	Fed	Dodge Pickup	Grey	CRITFC	Hatch, Doug
G62 4521W	Fed	Dodge Pickup	Grey	CRITFC	Hatch, Doug
G62 2258P	Fed	Chevy Pickup	Brown	CRITFC	Hatch, Doug

**Agency Staff List**

STAFF	AGENCY	ACTIVITY
Brown, Mike	ODFW	BRZ Boat Ops Sea Lion Captures
Steingass, Sheanna	ODFW	“
Wright, Bryan	ODFW	“



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Valentine, Shay	ODFW	“
Clark, Casey	WDFW	“
Edwards, John	WDFW	“
Johnson, Elliot	WDFW	“
Pasi, Coral	WDFW	“
Barker, Trever	WDFW	“
Hatch, Dough	CRITFC	“
Whiteaker, John	CRITFC	“
Lewis, Devayne	CRITFC	“
Walsey, Theodore	CRITFC	“
Newell, Jeremiah	CRITFC	“
F-Minthorn, Lamar	CRITFC	“
Seasonal Staff	CRITFC	“
Burco, Julia	ODFW	Veterinarian
Gillin, Colin	ODFW	Veterinarian
Mansfield, Kristin	WDFW	Veterinarian
Haman, Katherine	WDFW	Veterinarian
Walrath, Nicole	IDFG	Veterinarian

BRZ Access Request

Number: 2021-

Date: 12/18/2020

Title: Sea lion capture and removal in the BRZ

Project Point of Contact: Ben Hausmann

Requested By: WDFW, ODFW, CRITFC

Requester Point of Contact: Casey Clark (WDFW); Sheanna Steingass (ODFW); Douglas Hatch (CRITFC)

Scope of work: Perform sea lion capture and removal operations in the BRZ to reduce predation losses of salmonids.

Schedule for 2021: Sea lion traps are currently in the water, having been deployed in fall 2020. Boat operations in the BRZ to capture and permanently remove California sea lions and Steller sea lions in 2021 are expected to occur 2-4 days per week, primarily during April and May and again from September to November although trapping may also occur December through March if necessary. Boat operations to conduct maintenance or to move sea lion traps may occur at any time as needed during 2021, including all areas of the BRZ tailrace and forebay. Some level of boat operation in the BRZ related to the above tasks is requested for the 2021 calendar year under this permit.

Activity Area: All areas of BRZ tailraces and forebay.

Boat Operators: ODFW, WDFW, NMFS, PSMFC and CRITFC trained boat operators.

- #1 - Michael Brown (503-867-1457)
- #2 - Sheanna Steingass (541-257-7118)
- #3 - Bryan Wright (541-760-9543)
- #4 - Shay Valentine (306-789-2627)
- #5 - Bradley Triplett (971-673-6018)
- #6 - Casey Clark (TBD)
- #7 - John Edwards (TBD)
- #8 - John Whiteaker (503-475-7649)
- #9 - Doug Hatch (503-349-8210)
- #10 - Theodore Walsey (509-584-6451)
- #11 - John Whiteaker (503-476-7649)
- #12 - Jeremiah Newell (503-719-2509)
- #13 - Lamar Fairley-Minthorn (541-371-7915)

Flag Issued: NO

JHA:

AHA:

Radio Frequency: Marine Band 14

Pre Work Safety Meeting: February/March (TBD) 2021

JOB AND ACTIVITY HAZARD ANALYSIS: GENERAL OPERATIONS RELATED TO SEA LION TASKS

PRINCIPLE STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
1. Sea lion trap operations.	Lifting heavy equipment; potential for muscle and back strain.	Never attempt to lift heavy objects alone; use safe lifting techniques such as lifting with legs rather than back.
	Potential for being struck by falling objects; head or foot injury.	Always wear hardhats and steel-toed boots. Be aware at all times of location of crane, boom and lift cables.
	Sea lion bites.	Only experienced staff will be in close proximity to sea lions, handling boards, and transfer cages. Gloves and protective clothing will be worn.
	Working on boats and trap in the water when sea lions present.	Always wear personal flotation (and safety lines as necessary). Keep life line and throw ring at ready.
2. Scat (fecal) collections.	Working near water.	Personal flotation will be worn at all times.
	Personal sanitation.	Gloves and other appropriate equipment will be used during collection, storage, and processing of samples.

JOB HAZARD ANALYSIS: BONNEVILLE SEA LION CAPTURE OPERATIONS

PRINCIPLE STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS (FROM EM 385-1-1)
1. General boat operations in BRZ	All hazards	All boat operations in BRZ will be conducted under safety guidelines previously described in Job Hazard Analysis submitted for work in 2007 as permitted under BRZ permit Nos. 07-004 and 07-013; PFDs will be worn at all times (see Controls under “General Operations” in previous hazard analysis above).
2. Boat safety specific to capture operations	Collisions, anchor line entanglements, etc., during close operations near trap and other boats	Boats will be operated a very low speeds while near trap, anchor lines and other project vessels; communications between vessels will be maintained via VHF radios on working channel 82
	Man overboard (MOB) from boat or sea lion trap	Upon MOB incident, MOB alert will be relayed to all project staff, boat motors will be placed in neutral gear until whereabouts of MOB is clearly determined; all boats and the trap array will be equipped with throw life rings, float cushions, safety lines and boat hooks; one boat (R-6 22’ open Boston Whaler) is designated as primary MOB recovery boat; other boats will assist as necessary; all staff will receive instructions regarding MOB recovery; in each boat one person on each boat will be designated as lead for MOB recovery (responsible for safety ring, etc.); second person will assist with recovery; third will operate boat ONLY; condition of MOB will be assessed once onboard; if in danger of hypothermia, MOB will be immediately transported to Nav Lock dock for treatment; (emergency medical assistance may be requested); in the event MOB is unconscious, Bonneville Control will be notified immediately, emergency medical assistance will be requested to Oregon side, (Nav Lock dock); crew members will be CPR/First Aid certified

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PRINCIPLE STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS (FROM EM 385-1-1)
3. Working on sea lion trap	Falling in trap	Only experienced staff will work on trap; there are multiple staff from ODFW, WDFW, and NMFS with this experience and will be so-designated; PFDs and hard hats will be worn at all times; crew on trap will be in VHF radio communications with boats and crane operation crew on shore; any injuries will be assessed immediately and appropriate medical response will be taken (e.g. first aid and/or call to Bonneville Control for emergency medical assistance to Oregon side, Nav Lock dock);
	Sea lion bites	Experienced staff on trap will remain vigilant regarding sea lion locations and movements within trap to minimize chance of being bitten; anyone bitten will have injury assessed immediately and disinfected with topical Chlorhexadene solution; injuries worse than broken skin (e.g. open wound in muscle; broken bone) will result in immediate report to Bonneville Control requesting emergency medical assistance and transport of injured staff to Oregon side, Navigation Lock dock
	Bodily injury from mechanical sources	Hardhats and protective gloves will be worn by staff working on trap; any injuries to extremities caused by movement of equipment will be immediately assessed and responded to as appropriate (see sea lion bites)
4. Crane work on deck	Potential for being struck by falling objects causing head injury or foot injury.	Project staff not part of USACE rigging crew will stay well clear of crane operations; be aware, at all times, of the location of the crane and the crane boom; staff may assist with transfer of sea lions from lifting cages to trailer or truck, following guidance of rigging crew; always wear hard hats, steel-toed boots and hand protection (*05.D.01, 02, 04, 05, A.08, and 08.A-.B). Avoid climbing on top of equipment; remain on ground.
	Lifting heavy equipment causing the potential for back strain.	Never attempt to lift a heavy object by yourself; use a back brace; use safe lifting techniques such as lifting with your legs rather than with your back.
5. General precautions	Crane operations	Be aware of crane boom position at all times; remain well clear of boom and lift cage until loading to trailer of truck is taking place; hardhats and protective gloves will be worn by staff working near crane, cages, trailer or trucks
	Working in severe weather.	Be alert to and prepare for severe weather; wear several layers of warm clothing for protection from the cold and, as the weather indicates, a waterproof over-garment to be protected from the rain (*06.J).

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PRINCIPLE STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS (FROM EM 385-1-1)
6. Crane, boats, sea lion trap, cages, trailer, trucks	Inspections and experience with equipment required prior to use	Instruction or review in using equipment according to the manufacturers' instructions; USACE rigging crew will oversee and conduct crane operations; all boat operators will be trained and have necessary levels of experience; only experienced project staff will work on trap; documented safety meeting prior to work. First Aid/CPR training (*03.A.02 and 03.D)