February 17, 2012

To: Managers who manage rotary traps

From: Jerry Cotter Safety & Health Manager

Subject: Course of action for modification to rotary type screw traps

INSPECT, CORRECT, TRAIN

All rotary screw traps need to be inspected and corrections made BEFORE placing a trap into service

- Ensure that all modifications have been completed. All guards and paperwork must be present and complete.
- Traps that are currently in service must be removed from service, inspected and all modifications completed and paperwork created for that trap.

Develop a routine inspection procedure and checklist for traps

- Inspections before placing into service
- A checklist is available on "Inside ODFW - Safety" or from the Safety Manager
- Periodic inspections while in service

Develop a procedure for maintenance operations on traps

- We must ensure against the accidental release of energy
- We must instruct employees in the maintenance procedures at the appropriate level

Develop emergency procedures for employees working on traps

- As called for in the Safe Workplace and Field and Production Work policies (HR480-01 and HR480-04)
- Ensure that there is an appropriate level of first aid training in place

Develop JHA's, operational procedures, a training program and documentation for employees and volunteers who operate traps

- Distribute JHA, procedures and training information to all locations that use traps
- Perform and document training
    - Use JHA as training guideline and document on ODFW Training Certification form
- Include training for employees and volunteers that guards and rails must be in place when traps are operating

Train employees and volunteers BEFORE they are allowed to operate traps

- Only trained employees and volunteers are allowed to work traps
- All traps should have warning signs posted on boths sides of trap for the public and our employees.

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Screw Trap Required Safety Improvements on ODFW Rotary Screw Traps February 2012

A rotary trap with all safety features installed includes:

1. The moving drum is surrounded by guardrail or chain. The forward pontoons and side rails must be in place to operate. All openings must be chained with two non-sagging chains at rail levels.

2. There must be a guard over the rotating shaft just above the live well.

3. The rotating shaft in the live well must be completely encapsulated.

4. The pinch point where the drum rotates close to walkway must be guarded by a rigid and durable panel.

5. Signs should be mounted on both sides of the trap.

7. A Job Hazard Analysis and Emergency Plan for each trap site must:

a. Be communicated to crews during training.

b. Be on file with the Project Leader

c. Be in the ODFW vehicle on site and accessible to crews working the trap.

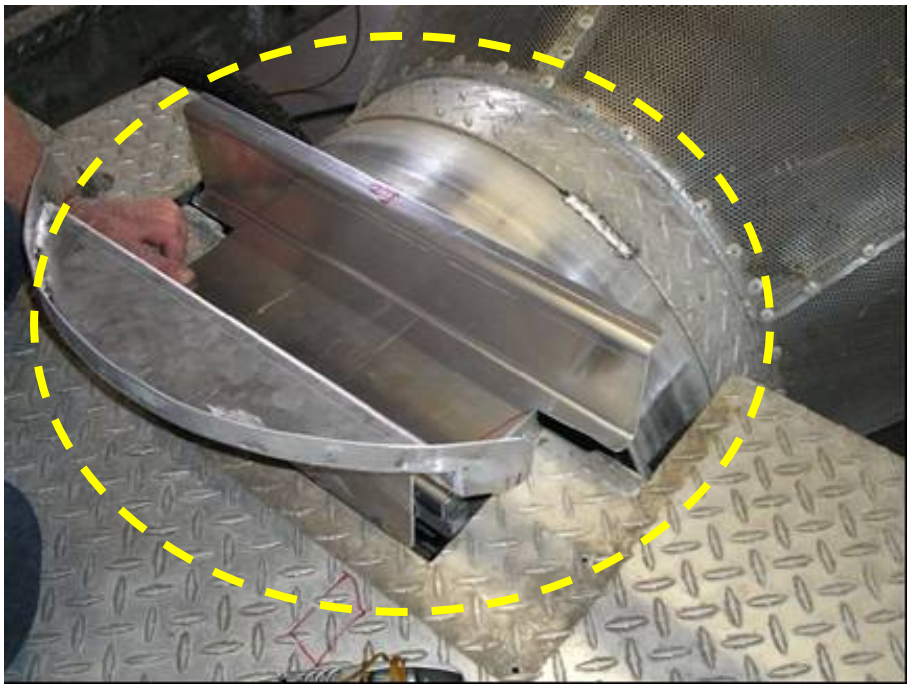
Be sure all safety equipment is installed and functioning. If something is broken or missing do not work the trap. Make contact with the Project Leader and make repairs.

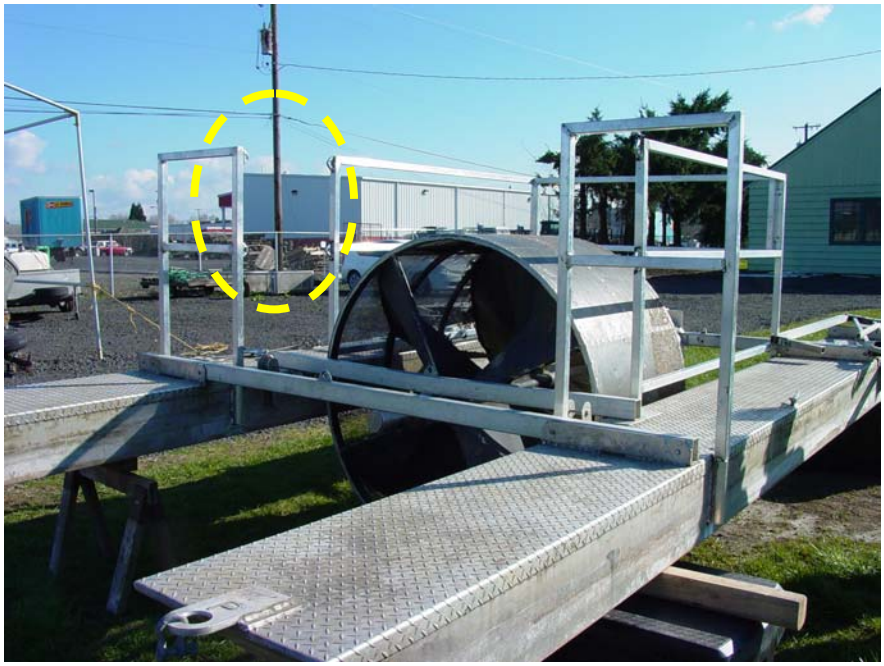
Make sure proper PFDs are being worn at all times when on a boat, in a stream, on the trap.

Be sure the drum is disengaged completely from the water before placing any part of your body into it.

A pre-deployment and maintenance check list is available online on the “Inside ODFW” webpage or by contacting the Safety Manager.

Two small guardrails that fit across the pontoons near the #1 beam must be installed. These guard rails can 36”to 44” high with 42” best practice. There has to be a middle cross piece approximately half way between the top rail and work surface. Any openings in the rails for access or egress must have two chains that fit across the guard rail when ODFW employees are working the trap.	
The portion if the cone shaft protruding into the fish well must be completely guarded. There can be no chance of snagging clothing, hair, or other body parts on the rotating shaft. While the best solution is pictured. Other durable and rigid materials may be used as long as they are securely fastened and completely guard the rotating shaft.	 The shaft must be completely encapsulated with no moving parts exposed.

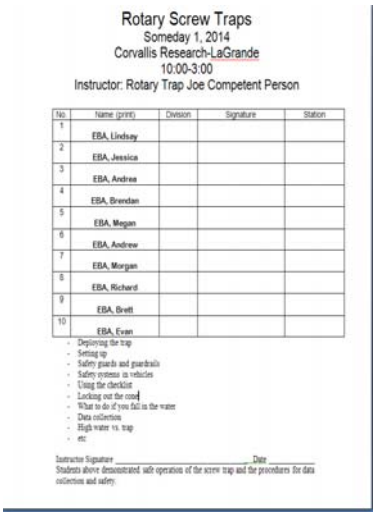
There needs to be a shield covering the rear on the cone. This was a prototype in 2006. It can be attached in the field. The guard pop-rivets onto the stop bar welded to the rear bearing swivel. This design allows the guard to rotate up when the cone is raised. **This guard or something like it must be in place to operate the trap.**	
The guard is hinged so that when the cone is not rotating, it can be moved out of the way and debris removed from the rear of the cone. This picture also shows a second design for the shield. The second design is easier and less expensive to manufacture. It also attaches to the trap with a hinge and pop-rivets. **This guard or something like it must be in place to operate the trap.**	

Handrails nmust to be placed that extend along the inboard side of both pontoons from the #2 beam to the rear decks. Chains and quick-links are used to close the gap between the side handrails and the handrail across the pontoon. There is also a handrail (not pictured) that spans between the handrails on the inboard sides of the pontoons, just above the # 3 beam. This prevents people falling forward off of the rear deck into the cone.	
This is a view showing proper placement of the handrails. See note in next photo.	 Inset shows attachment points for chains, required to close off maintenance access points on both sides.

<u>Handrail on the port side of the trap must have a panel attached to guard against the pinch-point created by the rotating drum.</u> The panel can be of expanded or solid sheeting and only needs to be installed on the lower opening of the rail area. (B side only)	
It has been suggested by OR-OSHA that we sign ALL traps. These signs are to warn the public of danger and to inform employees that guards must remain in place. The training program for employees and volunteers who operate traps must include instruction that guards shall remain in place during operation.	**! DANGER !** **Hazardous Equipment** **NO TRESPASSING** **All Guards and Rails Must Remain In Place While Trap Is In Operation** **Property of Oregon Department of Fish & Wildlife** Example of the warning sign to be placed on all traps. Each trap will require 2 signs, 1 each side, attached to the handrails.

Documentation for the safe operation of the trap must be completed before a trap is deployed. This documentation must be retained for 3 years by the program operating the trap(s).

1. Training Roster documenting that crews have been trained to operate the trap safely including, but not limited to access/egress, maintenance of the unit, lock-out procedures, safety procedures and safely deploying and retrieving the traps, identified hazards for the site and trap..
2. Job Hazard Analysis for each trap AND each location the trap(s) is/are deployed.
3. Emergency plan for each location.
4. The checklist for deploying and operation of the trap. This should be kept on file with the program and in the ODFW vehicle of the employee who is operating the trap.

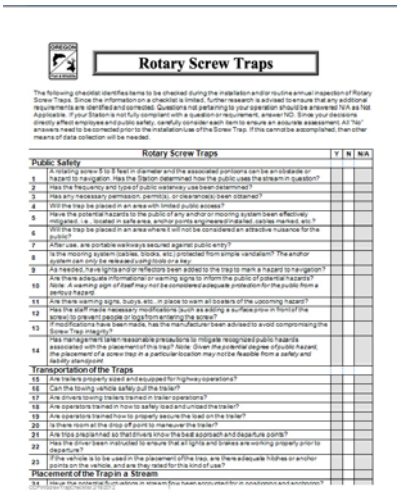


Rotary Screw Traps
Someday 1, 2014
Corvallis Research-LaGrande
10:00-3:00
Instructor: Rotary Trap Joe Competent Person

No	Name (print)	Division	Signature	Station
1	EBA, Lindsay			
2	EBA, Jessica			
3	EBA, Andrea			
4	EBA, Brendan			
5	EBA, Megan			
6	EBA, Andrew			
7	EBA, Morgan			
8	EBA, Richard			
9	EBA, Brett			
10	EBA, Evan			

- Deploying the trap
- Setting up
- Safety guards and guardrails
- Safety systems in vehicles
- Using the checklist
- Locking out the cone
- What to do if you fall in the water
- Data collection
- High water vs. trap
- etc

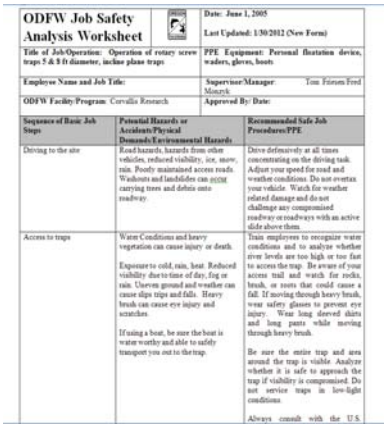
Instructor Signature _____ Date _____
Students above demonstrated safe operation of the screw trap and the procedures for data collection and safety.



Rotary Screw Traps

The following checklist identifies items to be checked during the installation and/or routine annual inspection of Rotary Screw Traps. Since the information on a checklist is limited, further research is advised to ensure that any additional requirements are identified and corrected. Questions not pertaining to your operation should be answered N/A as Not Applicable. If your Station is not fully compliant with a question or requirement, answer NO. Since your decisions directly affect employee and public safety, carefully consider each item to ensure an accurate assessment. All "No" answers need to be corrected prior to the installation/use of the Screw Trap. If this cannot be accomplished, then other means of data collection will be needed.

Rotary Screw Traps		Y	N	N/A
Public Safety				
1	A rotating screw 5 to 8 feet in diameter and the associated pontoons can be an obstacle or hazard to navigation. Has the Station determined how the public uses the stream in question?			
2	Has the frequency and type of public waterway use been determined?			
3	Has any necessary permission, permit(s), or clearance(s) been obtained?			
4	Will the trap be placed in an area with limited public access?			
5	Have the potential hazards to the public of any anchor or mooring system been effectively mitigated, i.e., located in safe area, anchor points engineered/installed, cables marked, etc.?			
6	Will the trap be placed in an area where it will not be considered an attractive nuisance for the public?			
7	After use, are portable walkways secured against public entry?			
8	Is the mooring system (cables, blocks, etc.) protected from simple vandalism? The anchor system can only be released using tools or a key.			
9	As needed, have lights and/or reflectors been added to the trap to mark a hazard to navigation?			
10	Are there adequate informational or warning signs to inform the public of potential hazards? *Note: A warning sign of itself may not be considered adequate protection for the public from a perilous hazard.*			
11	Are there warning signs, buoys, etc., in place to warn all boaters of the upcoming hazard?			
12	Has the staff made necessary modifications (such as adding a surface plate in front of the screw) to prevent people or logs from entering the screw?			
13	If modifications have been made, has the manufacturer been advised to avoid compromising the Screw Trap integrity?			
14	Has management taken reasonable precautions to mitigate recognized public hazards associated with the placement of this trap? *Note: Given the potential degree of public hazard, the placement of a screw trap in a particular location may not be feasible from a safety and liability standpoint.*			
Transportation of the Traps				
15	Are trailers properly sized and equipped for highway operations?			
16	Can the towing vehicle safely pull the trailer?			
17	Are drivers towing trailers trained in trailer operations?			
18	Are operators trained in how to safely load and unload the trailer?			
19	Are operators trained how to properly secure the load on the trailer?			
20	Is there room at the drop off point to maneuver the trailer?			
21	Are trips preplanned so that drivers know the best approach and departure points?			
22	Has the driver been instructed to ensure that all lights and brakes are working properly prior to departure?			
23	If the vehicle is to be used in the placement of the trap, are there adequate hitches or anchor points on the vehicle, and are they rated for this kind of use?			
Placement of the Trap in a Stream				
24	Have the potential hydrologic risks in stream flow been evaluated for in accordance with guidance?			



ODFW Job Safety Analysis Worksheet

Date: June 1, 2005
Last Updated: 1/30/2012 (New Form)

Title of Job/Operation: Operation of rotary screw traps 5 & 8 ft diameter, incline plane traps

PPE Equipment: Personal flotation device, waders, gloves, boots

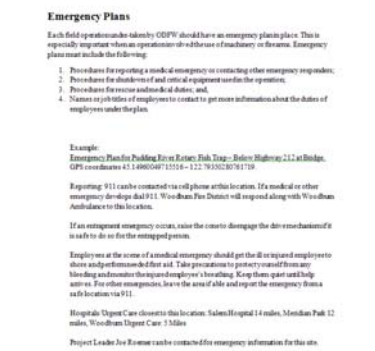
Employee Name and Job Title:

Supervisor/Manager: Tom Friesen/Fred Monzyk

ODFW Facility/Program: Corvallis Research

Approved By/ Date:

Sequence of Basic Job Steps	Potential Hazards or Accidents/Physical Demands/Environmental Hazards	Recommended Safe Job Procedures/PPE
Driving to the site	Road hazards, hazards from other vehicles, reduced visibility, ice, snow, rain. Poorly maintained access roads. Washouts and landslides can occur carrying trees and debris onto roadway.	Drive defensively at all times concentrating on the driving task. Adjust your speed for road and weather conditions. Do not overtax your vehicle. Watch for weather related damage and do not challenge any compromised roadway or roadways with an active slide above them.
Access to traps	Water Conditions and heavy vegetation can cause injury or death. Exposure to cold, rain, heat. Reduced visibility due to time of day, fog or rain. Uneven ground and weather can cause slips trips and falls. Heavy brush can cause eye injury and scratches. If using a boat, be sure the boat is water worthy and able to safely transport you out to the trap.	Train employees to recognize water conditions and to analyze whether river levels are too high or too fast to access the trap. Be aware of your access trail and watch for rocks, brush, or roots that could cause a fall. If moving through heavy brush, wear safety glasses to prevent eye injury. Wear long sleeved shirts and long pants while moving through heavy brush. Be sure the entire trap and area around the trap is visible. Analyze whether it is safe to approach the trap if visibility is compromised. Do not service traps in low-light conditions. Always consult with the U.S.



Emergency Plans

Each field operation under taken by ODFW should have an emergency plan in place. This is especially important when an operation involves the use of machinery or firearms. Emergency plans must include the following:

1. Procedures for reporting a medical emergency or contacting other emergency responders;
2. Procedures for shutdown of and critical equipment used in the operation;
3. Procedures for rescue and medical duties; and,
4. Names or job titles of employees to contact to get more information about the duties of employees under the plan.

Example:
Emergency Plan for Pudding River Rotary Fish Trap – Below Highway 212 at Bridge.
GPS coordinates 45.14960049715516 – 122.79350280761759

Reporting: 911 can be contacted via cell phone at this location. If a medical or other emergency develops dial 911. Woodburn Fire District will respond along with Woodburn Ambulance to this location.

If an entrapment emergency occurs, raise the cone to disengage the drive mechanism if it is safe to do so for the entrapped person.

Employees at the scene of a medical emergency should get the ill or injured employee to shore and perform needed first aid. Take precautions to protect yourself from any bleeding and monitor the injured employee's breathing. Keep them quiet until help arrives. For other emergencies, leave the area if able and report the emergency from a safe location via 911.

Hospitals/ Urgent Care closest to this location: Salem Hospital 14 miles, Meridian Park 12 miles, Woodburn Urgent Care 5.5 Miles

Project Leader Joe Roumsey can be contacted for emergency information for this site.