



OREGON DREISSENID RAPID RESPONSE EXERCISE

Lake Billy Chinook - After Action Report



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Introduction

The Columbia Basin Team of the 100th Meridian Initiative conducted a virtual dreissenid rapid response exercise May 19–20, 2020 in partnership with the State of Oregon. The exercise was intended to explore the roles of Oregon Department of Fish and Wildlife, Oregon State Marine Board, Oregon State Parks and Recreation, Portland General Electric, locally affected Tribes, and all other responsible parties in the State of Oregon to respond to a simulated dreissenid discovery in Lake Billy Chinook in central Oregon.

The specific objectives of the exercise were to:

- Update the *Oregon Dreissenid Mussel Rapid Response Plan* (2017) based on exercise outcomes
- Develop a clear multi-agency communications plan for internal and public use
- Test the new *Columbia River Basin Dreissenid Mussel Rapid Response Plan* (crbdirt.com) elements and provide feedback on their functionality
- Utilize the new *Columbia River Basin ESA Manual for Rapid Response* in the exercise process
- Post-exercise, share information on exercise outcomes with other agencies and non-participants in Oregon

The two-day event was held remotely using *GoToMeeting* software because of the COVID-19 pandemic.

This exercise was also part of the efforts by the 100th Meridian Initiative Columbia River Basin (CRB) Team. The CRB Team partners have been conducting rapid response exercises for over a decade with the goal of preparing the region and testing the Columbia River Basin Rapid Response Plan. The Oregon exercise was the 11th exercise conducted in the region, and the 3rd exercise for Oregon.

Exercise Participants

The individuals that participated in the exercise included:

Rick Boatner and Martyne Reesman, Oregon Department of Fish and Wildlife (ODFW)
Glenn Dolphin and Josh Mulhollum, Oregon State Marine Board (OSMB)
Grant Jackson, Oregon Department of Agriculture (ODA)
Josh Emerson, Oregon Department of Environmental Quality (ODEQ)
Bridget Tinsley and Todd Honeywell, Oregon Parks and Recreation Department (OPRD)
Amira Streeter, Oregon Governor's Office - Natural Resources
Stephen Phillips, Pacific States Marine Fisheries Commission (PSMFC)
Theresa Thom and Brendan White, US Fish and Wildlife Service (USFWS)
Amanda Ondrick, Confederated Tribes of Warm Springs (CTWS)
Lori Campbell, Portland General Electric (PGE)
Colleen Fagan, National Oceanic and Atmospheric Administration / National Marine Fisheries Service

Facilitators Leah Elwell (Invasive Species Action Network) and Lisa DeBruyckere (Creative Resource Strategies, LLC).

Scenario

An *Oregon Rapid Response Players Handbook* (Appendix A) was developed and distributed to exercise participants in advance of the workshop. The handbook informed exercise participants of the objectives, participant roles, guidelines, assumptions, and specifics of the site. The team planned a response to the discovery of an adult dreissenid mussel at the Crooked River Day Use boat ramp on Lake Billy Chinook on May 8, 2020. Lake Billy Chinook is a reservoir in Jefferson County created by the Round Butte dam. The lake is located at the confluence of the Crooked, Deschutes, and Metolius rivers near Culver and Madras, Oregon.

Bull trout (*Salvelinus confluentus*) is listed as threatened in the State of Oregon. Bull trout critical habitat exists within the geographic scope of any proposed dreissenid control action at Lake Billy Chinook.

Exercise Agenda

The agenda for the event (Appendix B) included:

- A review of the scenario, including maps and logistics of the site.
- A discussion on possible authorities to be dispensed based on actions that may need to be taken.
- A discussion of potential monitoring and containment strategies.
- Preparations needed to consult with the USFWS, including identifying listed species and critical habitats that have the potential to be affected by a response action, articulation of potential response options, and best management practices to be implemented that minimize detrimental effects to listed species and critical habitats
- Compilation of information relative to chemicals, permits and licenses needed, physical barriers, other equipment (e.g., boats, signage), and drawdown potential.
- Developing lists of contacts to be notified.
- Identification of any Federal Energy Regulatory Commission (FERC) compliance issues.
- Development of a draft press release by key communications staff associated with response agencies.
- A discussion with USFWS Ecological Services staff to practice an Emergency Consultation notification.
- An exercise de-brief to share lessons learned.

What Makes This Rapid Response Exercise Unique?

Two aspects of this particular Columbia River Basin rapid response exercise were unique. First, the exercise was originally planned for as an in-person, onsite meeting; however, COVID-19 intercepted those plans, and the event was successfully held virtually. Although a virtual exercise is different from an in-person exercise, the planning team was able to modify aspects of the agenda to allow for beneficial interactions and outcomes.

Second, this was the first rapid response exercise that incorporated an actual Endangered Species Act (ESA) Emergency Consultation with the US Fish and Wildlife Service, using the new online www.crbdirt.com toolkit to navigate listed species and critical habitat considerations and best management practices to minimize detrimental effects to those species and critical habitats. It has been a long-term goal of the CRB to model and determine how federal agencies will respond to control actions for the eradication of dreissenids in emergency situations. This exercise advanced our knowledge on this subject and improved any future processes that may explore this option.

Proposed Action

Exercise participants articulated a chronological set of actions they would implement in response to the dreissenid detection. Their process resulted in making a determination that potash would be used to control dreissenids in specific locations directly affected by dreissenids. Because potash is not registered for dreissenid control, emergency exemption as per Section 18 of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)) would be needed (form included in the appendix of *Oregon's Dreissenid Rapid Response Plan*).

Chronological actions to be taken

1. Remove vessel from water¹
2. Initiate Incident Command System (ICS) for incident at Lake Billy Chinook, including specific communications
 - Lead action agency is ODFW. Supporting agencies and entities are OPRD, OSMB, Confederated tribes of Warm Springs, and PGE.
 - Conversation with Lead Agency Directors (OPRD, ODFW, ODA, OSMB, DEQ, USFWS) to commit to staff and actions, quarantine authorities, etc.
 - Communicate with Confederated Tribes of Warm Springs tribal leaders. Obtain tribal approval for dreissenid action - start at the natural resource level and finalize with tribal leaders. Confederated Tribes of Warm Springs are part of notification process via hydro management protocols (FERC notification loop).
 - Inform Governor's Natural Resources Staff.
 - Develop a multi-agency press release (note: throughout the exercise, various press releases and social media pushes will occur to update the public)
3. Crooked River day use area closed to all launches, applying permissions from OPRD Director/Deputy Director via ODFW Director. The entire Crooked River arm of Lake Billy Chinook may potentially be restricted to access along with a possible boating closure via the OSMB if needed. Public outreach will

¹ **Follow-up post exercise:** determine what possible methods could be utilized for boat removal (covering boat with tarp or utilizing a crane, or other possibilities)

be needed to explain why the boat launch is closing, etc.

4. Watercraft inspection team moves into place at OPRD Crooked River Campground where space for set up, multiple boats to stage, and water is available.

5. Establish a liaison with local county law enforcement along with Oregon State Police and secure initial notification equipment (signage, etc.).

6. Initiate removal of moored vessels from marina.

7. Monitoring team to assess extent of infestation.

8. Define listed threatened and endangered species and critical habitat within action area, capture water quality information, determine flow residence time, water depth, drawdown potential, and other parameters that will influence potential actions.

- Using the USFWS Information for Planning and Consultation² website, define a polygon that incorporates the potential upstream and downstream areas of the action area
- Based on the defined polygon, Bull Trout (*Salvelinus confluentus*) is the only aquatic species of concern.
- Staging areas for completing associated work are unlikely to impact ESA listed species by using already impacted areas (i.e. staging area at marina, at the boat ramp with parking lot – staying on paved roads, water source from campground).
- Using the Columbia River Basin Dreissenid Incident Response Toolkit³, describe potential response actions based on listed species and critical habitats within the proposed action area.

9. Determine control action and action area. Define the action area for the potential response action - upstream and downstream as well as water body itself, specifically Lake Billy Chinook near Madras, OR, Crooked River arm of the reservoir.

10. Apply for necessary permits - Section 18 of FIFRA, etc. and calculate volume of area to be treated.

11. Order necessary supplies and equipment to initiate chemical action.

12. Divers search area between marina and day use area for adult mussels.

13. Place booms around marina slip area to contain, if possible.

14. Analyze extent of infestation based on information collected.

² <https://ecos.fws.gov/ipac/>

³ www.crbdirt.com

15. Propose chemical/mechanical response options.

16. Implement action.

- OPRD/PGE archaeologist will be on-site throughout project to monitor actions on the ground.
- Install water floating barriers.
- Bring potash onto site for two treatment areas:
 - 1) Cove Palisades Marina - where the mussel infested boat was slipped
 - 2) Crooked River Day Use Area boat ramp – where the boat launched
- Discussed the need for a third treatment site in the ½ mile stretch between the two locations (marina and boat ramp); however, based on monitoring information and lack of veliger detection, the group declined to treat this area.
- Note: Easy to control public access / not many roads in and out of the area.
- Three staging areas – one for the marina, one at Crooked River Day Use area, and one at the Cove Palisades Campground. The Cove Palisades Campground area would be used for setting up boat inspection and decontamination, since the area has large paved parking and a reliable water source. In-and-out access would be controlled at this location for traffic going to the marina and day use area.
- Set up of treatment areas and staging areas including closures
 - Include deployment of booms, nets, bubble curtains, etc.
 - Closure of areas, signage of closure
 - Enforcement of closure(s)
- Rhodamine dye to characterize water flow and flow monitoring would be conducted at both treatment sites
- Chemical treatment with Potash (KOH or KCl, etc.); estimated treatment would be 21 days at <10mg/L (KOH), or 100 mg/L (KCl)⁴
- Neutralization of Potash⁵
- Bioassays throughout treatment
 - Potential effects of chemical methods on listed species and critical habitats associated with CRB water bodies
 - Identify specific vulnerabilities to bull trout, potential effects on key life stages, potential effects on critical habitats, and specific BMPs for bull trout.
 - Outside of spawning habitat // impact to young of the year (YOY) larval fish, prey.
 - Consideration of other non-habitat impacts for adult stage.
 - Lori noted fish management work in the reservoir; life stages, and other needs. Fish passage through the dam; lamprey/salmon - smolt migration period move down tributary arms through reservoir between **March and June 15** (collected at Round Butte fish collection facility and released downstream). Steelhead and Chinook adults are downstream of the re-regulating dam, and are collected there, trucked and released in Round Butte forebay (around the dam).

⁴ **Follow-up:** detailed information is needed to better understand exact local source of potash material, mixing resources needed, storage on-site and proper disposal.

⁵ **Follow-up:** detailed information is needed to better understand the methods and resources needed to neutralize potash treatment.

- A possible drawdown that could be used with control techniques would consider water temperature, and impacts to anadromous fishes.

17. Oregon Department of Fish and Wildlife's Guidelines for Timing of In-water Work⁶ will be referenced and determine if specific steps need to be taken to avoid those windows.

- Oregon's preferred work period is **July 1-September 30**, which is the work period established for Lake Billy Chinook, all upstream tributaries, and associated lakes within the watershed. However, ODFW needs to affirm whether this water body is considered a lake or a river. An exception based on temperature regime/spawning analysis may be needed.

18. Best Management Practices for Action

- Review entirety of Best Management Practices on crbdirt.com, and highlight those, in particular relevant for T&E species and critical habitats.
- Be mindful of raptor nesting (peak period). There is the potential need for someone on-site to monitor disturbance and bird behavior.
- Review BMPs to avoid the spread of invasive species and incorporate into game plan.
- Allow for fishes to move away from the treatment without netting/salvage to minimize extra stress on fishes.
- Clear treatment area of fish and invertebrates, if possible, with electro-fishing implementing BMPs in area to minimize turbidity; minimize disturbance on the shoreline. Determine total suspended solids (TSS) – monitoring timing of treatment, seasonal migrations
- Monitor nets; daily
- Contact time of potash: 21 days (<10 mg/L KOH)
- Daily updates – social media posts; updates; press-releases;
- Clean and decontamination of equipment;
- Use certified pesticide applicators with aquatic application certification;
- Check equipment for proper performance (i.e. leaks, etc.)
- Proper transport of chemicals as liquid to site⁷

Additional Considerations

Exercise participants identified a suite of additional issues and considerations that would need to be incorporated as the action is implemented:

- **Closure notifications**—There could be additional considerations and constraints associated with closing the Crooked River Arm of the reservoir. It could be challenging to notify boaters in other portions of the reservoir. Local agencies could potentially use law enforcement to assist with closure and outreach. PGE funds the Jackson County Sheriff Department to be on the water

⁶

https://www.dfw.state.or.us/lands/inwater/Oregon_Guidelines_for_Timing_of_%20InWater_Work2008.pdf

⁷ **Follow-up:** Understand any hazards associated with potash transportation to the control site for use.

conducting enforcement of boating and could potentially assist. Consider posting information on floating restrooms.

- **Potash**—Determine how long it takes for potash to settle out of aquatic systems such that there is no effect on species and habitats.
- **USFWS Emergency Consultation**
 - Be very clear about the action that will be taken, and the chronological order in which it will be taken. Communication with the USFWS Regional Office will be critical initially.
 - The Klamath FW Office (Dan Blake) is not under the same purview as the Oregon Office (Brendan White) - they're more aligned with California.
 - Specific details in the case would be expected on the action, such as providing the USFWS a count of how many bull trout were moved, and if there was mortality.
 - If KCI does expand beyond the curtain/outside of the control area, then monitor for any effects (to both fish and critical habitat), and report to USFWS.
- **PGE License Requirements and FERC considerations**—Flow Article 414 provides for extraordinary situations that allow PGE to exceed normal drawdown. They would be required to notify implementation groups (e.g., cultural, fish, etc.) within 10 days of the incident, and coordinate with FERC as the plan is developed and updated. Concern: With a drawdown, you spill water, which means you could be further introducing mussels downstream. Most drawdowns are conducted during the winter months. Lake Billy Chinook has bi-water drawdown capability. There will be consideration for anadromous fish needs. There are additional impacts to consider when conducting drawdowns. Staging areas for on-site actions will be on developed asphalt sites, and no drawdowns will occur, therefore it is estimated there will be few FERC issues because there are likely no effects to PGE activities that would affect water delivery, fish passage, water compliance, etc. So for this situation, the primary notification of resource groups, implementation committees, etc. to inform them of the action.
- **Federal Nexus**— If there is no federal nexus, there is no formal pathway for a Section 7 Consultation; however, the USFWS will want to review the action, the results, the impacts to listed species and habitats, and lessons learned. A federal nexus is created any time federal funding, permitting, etc. is involved or related to the situation. US Army Corps of Engineers (USACE) Water Resource Development Act (WRDA) funding could be the federal nexus and that may result in an initial discussion with USACE, but the state would still lead the action effort.
 - Any project that has a federal nexus, such as a project that receives federal funding, a federal permit, or other federal authorization requires the federal agency to ensure that the continued existence of a federally endangered or threatened species is not jeopardized.
 - If effects of a control action are fully contained within the reservoir, there is no nexus with NOAA because of the lack of anadromous fish species; however, we should communicate with NOAA regarding the activity.
- **Additional communication considerations**

- Think about other partners in the region that are also sampling water bodies and ensure we include them in the outreach as they may modify their sampling efforts based on the activity at Lake Billie Chinook. Some of the partners sampling include, Portland State University, US Geological Survey, Confederated Tribes of Warm Springs, ODFW, and others that monitor)
- The Oregon Rapid Response Plan has identified many entities for notifications in Oregon and the CRB. This can be referenced initially.
- Local and regional partners and stakeholders to communicate with
 - US Forest Service
 - Stakeholders list (watershed councils, SWCDs)
 - NGOs and other groups that have historically been involved in restoration in the upper basin, e.g., Deschutes River Conservancy, Upper Deschutes WC, Trout Unlimited, etc.
 - Tourism and recreation groups (e.g. Tumalo Canoe and Kayak in Bend). They create a culture of stewardship that can assist with public outreach
 - Local county staff/commissioners/Culver-Madras community, etc.
 - Irrigation districts and water utilities
 - Private landowner outreach (people that live along the LBC shores with boat launch sites, etc.) - Three Rivers
 - Local businesses and local news media
- Involve USFWS External Affairs if possible.

Post-exercise Evaluation and Debrief - Lessons Learned

At the conclusion of the event, participants were asked a set of questions to evaluate the efficacy of the exercise.

What worked well?

Participants stated the conversion of a planned onsite event to a virtual event was seamless, although it did result in fewer people attending the event. The ESA Consultation portion of the event was considered a milestone relative to past exercises, as it affirmed the process that currently exists aligns with USFWS expectations for a pre-action emergency consultation. Participants were able to focus on obtaining information and filling out necessary forms when they broke into smaller work groups, then reconvened as one large team to share their work. The exercise gave an increased level of confidence in the ability to respond to an introduction, it's critical to prepare, and know what is needed to improve. The exercise made one participant ask many questions about how his agency would be involved in the event of a detection, with subsequent action(s). The new CRB DIRT site has useful information, is a concise place for technical information, and was helpful in developing steps associated with a response. The newly modified ICS forms are more applicable to a mussel incident and helps keeps things organized in a meaningful way - these forms better represent what responders need. Collaboration, level of engagement, and trust among exercise participants has evolved through time. Participants were able to practice what could be implemented in the field, and achieved a lot of pre-action work (e.g., understanding permits

needed, etc.). Morning sessions with afternoon breakouts were efficient and useful. Note: Sometimes, the in-person sessions include sidebar conversations and other activities that lessen focus.

What needs improvement?

Participation - more feedback from water quality agencies (DEQ), Warm Springs tribe - drinking water source 3 miles downstream of dam, reservoir operators. An in-person meeting would have allowed for improved participation and engagement. Have a designated person to set up conference calls for small groups that need to convene to fill out forms, do research, etc. Reference the CRB Plan, Oregon RR plan, etc.

What was missing, or should have been covered in advance of the exercise?

Hydrology, depth, shorelines - that level of detail in advance of the exercise would have been helpful (depth in marina, etc.). The more information we have in advance, the better. Consider native mussels and other species that may not be listed, but could be protected prior to an action. Be on the lookout for other aquatic invasive species.

What was not accomplished for this virtual exercise that would have been accomplished on site at LBC?

Site visit - we would have a much better idea of the site and what we are dealing with re: reservoir depth, movement of water. Interaction with key agencies and partners that would be part of a real-life situation (county emergency services, marina manager, etc.). Potential dive team input and training (creates a press opportunity, too). Communication with the Governor's office (may have had improved participation, especially without COVID-19) - although their participation in the virtual exercise was improved relative to past exercises. Doing an actual inspection and seeing the coming and going of the actual level of activity this time of year.

What should be done differently for future exercises?

Retain the ESA consultation component. Set a time slot for irrigation districts, water utilities, and NGOs and ask them questions relative to local conditions and perspectives. This could be done ahead of the event or after.

What else can CRB DIRT do for you?

Add NOAA trust species to the CRB DIRT website. Add references to aquatic applications. Modify the ICS forms to make it easier to cut and paste images/maps into the forms.

Are there other issues that we need to tackle on behalf of the states?

More checkpoints and WID on highways coming into state and between states. Fostering collaborations and partnerships to advance AIS prevention efforts. DEQ water quality issues/standards/TMDLs associated with water bodies.

Appendices

Appendix A - Oregon Rapid Response Players Handbook

Oregon Rapid Response Players Handbook

Lake Billy Chinook

May 2020



Lake Billy Chinook; Oregon State Parks

Purpose and Scope

The purpose of this exercise is to advance Oregon readiness in response to the discovery of dreissenid mussels.

The exercise is meant to explore the roles of Oregon Department of Fish and Wildlife, Oregon State Marine Board, Oregon State Parks, Portland General Electric, locally affected Tribes, and all other responsible parties in the State of Oregon to respond to a simulated dreissenid discovery in Lake Billy Chinook.

Objectives

- Update the *Oregon Dreissenid Mussel Rapid Response Plan (2017)* based on exercise outcomes
- Develop a clear multi-agency communications plan for internal and public use
- Test the new *Columbia River Basin Dreissenid Mussel Rapid Response Plan (crbdirt.com)* elements and provide feedback on their functionality
- Utilize the new *Columbia River Basin ESA Manual for Rapid Response* in the exercise process
- Post-exercise, share information on exercise outcomes with other agencies and non-participants in Oregon

Participant roles, guidelines and exercise assumptions

This is an exercise. If you make contact outside of the exercise players you should preface all communication with “This is an exercise, not an actual incident”. This ensures that individuals not participating in the exercise understand that the events are not occurring.

Players in the exercise will respond to the situation as presented utilizing their expert knowledge, current response plans, and familiarity from relevant training.

Problem-solving will be the primary focus of the exercise. Decisions made during the exercise should be viewed as an opportunity to discuss and explore multiple options and possible solutions.

Oregon Department of Fish and Wildlife utilizes the following guidelines in their sampling regime to help guide management decisions from monitoring results. This terminology will be utilized throughout this response which is specific to dreissenid monitoring.

Waterbody definitions⁸:

- Status Unknown – Waters that have not been monitored.
- Undetected/Negative - sampling/testing is ongoing and nothing has been detected, or nothing has been detected within the time frames for de-listing.
- Inconclusive (temporary status) - Waterbody has not met the minimum criteria for detection.
- Suspect – Waterbody that has met the minimum criteria for detection.

⁸ Definitions were developed by the Western Regional Panel in ANS, Building Consensus in the West Committee

- Positive – Multiple (2 or more) subsequent sampling events that meet the minimum criteria for detection.

Scenario

On Saturday May 8, 2020 an Oregon State Park Ranger found ten intact and what appeared to be adult dreissenid mussels at the Crooked River Day Use boat ramp on Lake Billy Chinook. The ranger contacted his supervisor about the discovery at the boat ramp. The ranger was instructed to contact the local Oregon Department of Fish and Wildlife biologist and to survey the parking area for potential fouled boats etc. The ranger discovered a truck and trailer with Arizona license plates, which was the only vehicle present with out-of-state plates. Being very concerned, the ranger then went looking for the boat associated with this vehicle. After several hours, a 24 ft. Edgewater Center Console fishing boat with twin outboard engines registered in Arizona was found moored at the Cove Palisades Marina. The ranger noticed a heavy accumulation of attached mussels on the boat hull and found an additional 20 intact adult mussels along the beach in the direct vicinity of the boat.

The owner was also located and it was determined that the amount of time the boat had been in the water in Oregon was 10 hours and that they had not yet started to fish on the lake. The boat in-question was last used in Lake Pleasant, Arizona, where the boat had been moored for three months (Feb-April). The boat had been out of the water for approximately two days prior to being launched into Lake Billy Chinook on May 8, 2020.

The boater was unaware of boat inspection or boat decontamination requirements. The route the boater took from the Phoenix area did not pass any highway inspection stations; from Phoenix the fastest route was North on Hwy 93 with the Hwy 11 / 515 bypass through Las Vegas and then North on Hwy 95 to Tonopoh, NV, up 376 North, to 305 North to Battle Mountain, NV, briefly traveling west on Hwy 80 from Winnemucca, NV and then North on Hwy 95 entering Oregon in McDermitt and then West on Hwy 20 to Lake Billy Chinook.

After learning of this information from Oregon State Parks, the local District Fish Biologist reported the incident, and sent pictures and summary report of the mussels to ODFW Invasive Species Supervisor. On May 9, ODFW dispatched field staff to collect water samples from the immediate area of the boat ramp and conduct shoreline surveys one-mile on each side of the ramp. Prior to ODFW staff arriving on site, Oregon State Parks and law enforcement consulted with ODFW Invasive Species Supervisor and had the boat removed from the water and held until ODFW watercraft inspection personnel could inspect and decontaminate the vessel.

- All mussels collected by the park ranger as per ODWF instructions and were placed into a bucket of lake water overnight and showed obvious signs of being still alive (shells open to feed and then closed when probed).
- Standing water was found inside the boat within the bilge area and in a live well. Samples of the bilge water were sent to ODFW for initial microscopic analysis and an independent lab for verification. The initial analysis results were positive for veligers.
- State Parks temporarily closed the ramp at Crooked River with barriers until ODFW watercraft inspectors could arrive on-site.

- A park ranger interviewed the boat owner and found that they had only launched the boat and not started fishing around the lake.
- Divers were deployed to examine boats in the marina and remove any mussel that were found in the area.
- Divers found additional mussels in the vicinity of the marina where the boat is located.

Description of scenario location

Lake Billy Chinook is a reservoir in Central Oregon. Lake Billy Chinook, created by Round Butte Dam, fills the canyons of the Crooked, Metolius and Deschutes Rivers. Within these three large arms is 72 miles of shoreline surrounding 3916 acres, average depth of 102 ft., with a maximum depth of 415 ft. Pelton and Round Butte Dams were completed in 1958 and 1964 respectively. They are co-managed by Portland General Electric and Confederated Tribes of Warm Springs.

There are multiple locations to launch a boat on Lake Billy Chinook; Three Rivers Marina, Cove Palisades Marina, Cove Palisades State Park (Crooked River, Deschutes River and Upper Deschutes) and Perry South. Lake Billy Chinook supports largemouth, and smallmouth bass, rainbow, brown and bull trout, kokanee salmon, whitefish, and suckers, minnows and dace. There are many anadromous salmon and steelhead species native to the Deschutes, including sockeye, kokanee, summer steelhead, redband trout, spring and fall chinook, and bull trout.

Timeline

May 8, 2020 – fouled boat launched at Lake Billy Chinook

Week of May 11-15 – Assessment, survey, lab results (turn-around time 2 days)

Week May 19 – Assemble for response

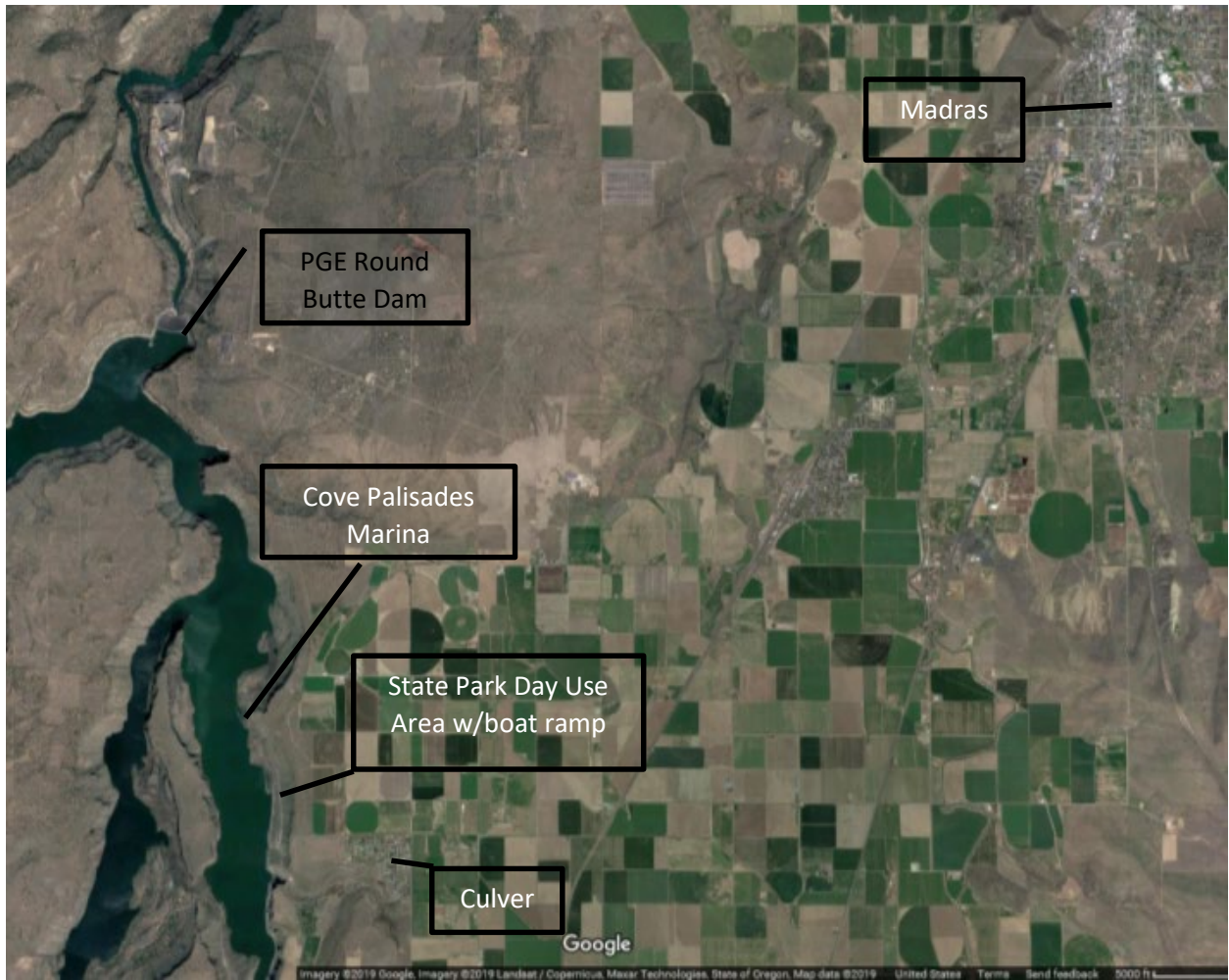
Homework and Preparation

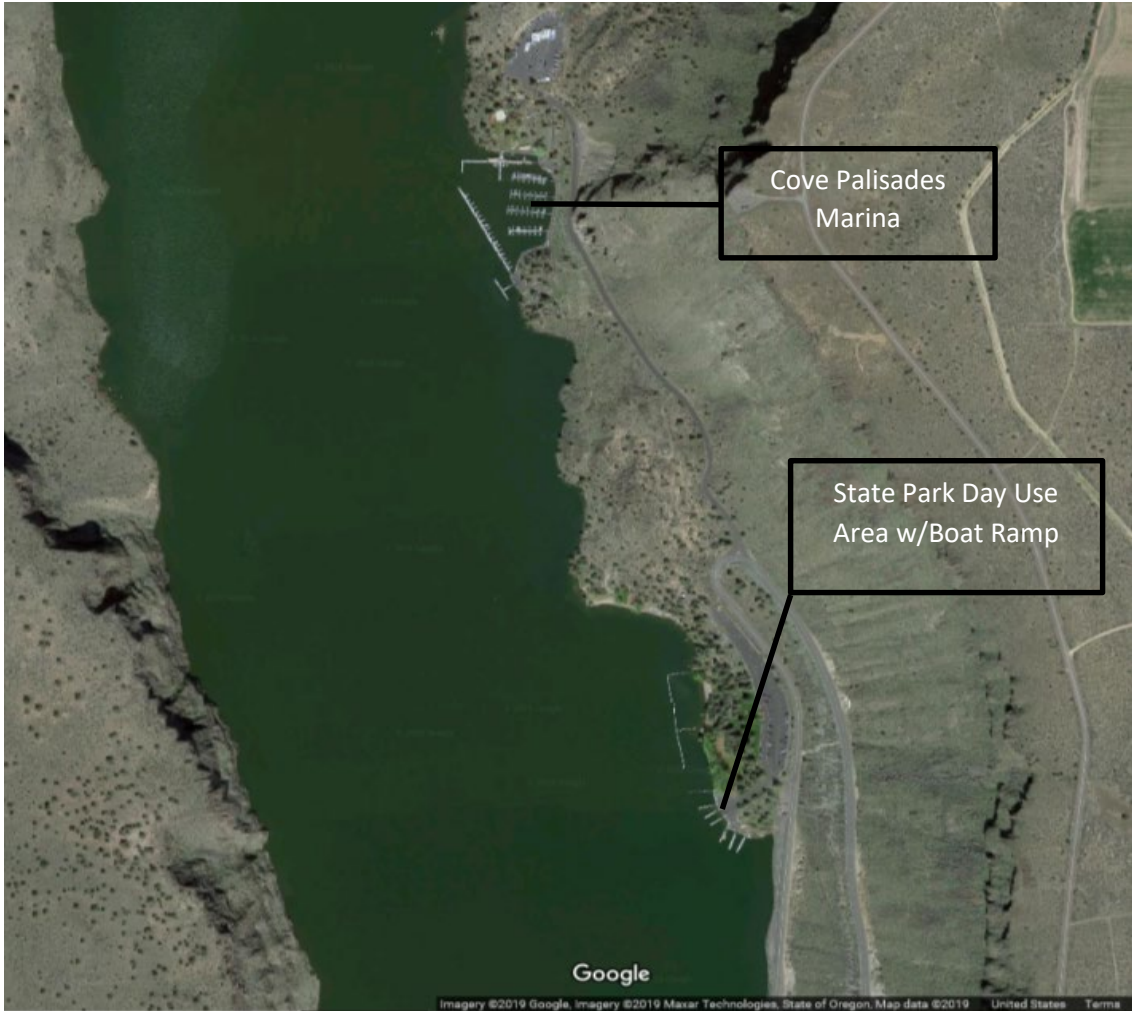
Familiarizing yourself with the current Oregon Rapid Response Plan and The Columbia River Basin Dreissenid Incident Response Toolkit (www.crbdirty.com) prior to the exercise is suggested.

Site description and resources

Scenario weather conditions:

- The weather conditions at Lake Billy Chinook were very favorable to mussel survival as it was raining and cool in the mid-50s.
- Average daily high and low temperatures in Arizona in early May are in the upper 80s to mid-60s respectively.







Appendix B

Oregon Dreissenid RR Exercise Agenda

All Times are Pacific Time

May 19, 2020	Activity	Lead	Pre-exercise assignments
8:00am – 8:30am	Welcome and Introductions Setting the Stage Ground Rules/tips using GoToMeeting	Stephen Phillips, PSMFC Rick Boatner, OR Fish and Wildlife Glenn Dolphin, OR Marine Board	Rick and Glenn to discuss roles
8:30am – 8:50am	Review scenario and discuss actions to date <ul style="list-style-type: none"> ▪ Recap scenario details/timeline (Incident Status Report A - 1st 3 pages only) ▪ Governor actions/declarations 	Rick Boatner, Glenn Dolphin	Rick and Glenn to complete first 3 pages of ICS Form A; Rick and Glenn talk with their leadership to work through protocols used to have discussions with Governor's office
8:50am – 9:10am	Review maps and familiarize with spatial logistics with GIS materials	Todd Honeywell, OR Parks Lisa DeBruyckere, CRS	Todd to produce/recommend maps/information/bathy- metric associated with LBC
9:10am – 10:00am	Discuss monitoring and containment strategies <ul style="list-style-type: none"> ▪ Use Incident Critical Analysis Form C (2 - one for containment, one for monitoring) to document optional monitoring and containment strategies 	Martyne – Monitoring Lead Rick, Todd – Containment Lead Lisa - Typist	Martyne, Rick, and Todd to familiarize themselves with potential monitoring and containment strategies, including description of resources needed (e.g., determine if local law enforcement and others are needed)
10:00am - 10:10am	BREAK		
10:10am – 11:00am	ESA Consultation Prep: <ul style="list-style-type: none"> ▪ Identify listed species and critical habitats ▪ Potential response options based on these species and their habitats ▪ Best management practices to be implemented as part of potential response options 	Lisa DeBruyckere, CRS walks through ESA consultation process and information to prep for conference call with USFWS Team designates Compliance Lead for response; designate afternoon assignments	All RR exercise participants review www.crbdir.com .

May 19, 2020			
	Activity	Lead	Pre-exercise assignments
11:00am – 1:30pm	BREAK		
1:30pm – 2:00pm	MAC Briefing Call via teleconference	Stephen Phillips, Moderator Rick, lead	Stephen sends out call information
	BREAK		

AFTERNOON - ON YOUR OWN (as much time as it takes)	<p>Communicate with experts via teleconference to fine-tune potential response actions - Fill out ICS Form D</p> <ul style="list-style-type: none"> ▪ Chemicals, Permits, Licensed applicators (Grant, Martyne) ▪ Barrier options - silk curtains, bubble curtains (Damian Walter - USACE - Stephen), etc. (Lori, Todd, Bridget) ▪ Equipment (boat decon equipment, signage, road barriers - Martyne - ODFW) ▪ Lay out the game plan by timeline (Rick, Glenn, Therese) ▪ Drawdown potential (Lori-PGE) 	<p>Individuals/groups track down information on equipment/chemicals/permits necessary to inform a response provide Form D to Leah by 4 pm</p>	
	BREAK FOR DAY		

May 20, 2020			
	Activity	Lead	Pre-exercise assignments
8:00am – 9:30am	Update everyone on information garnered from 2-4pm exercise the day before (Review and Refine ICS Form D) Complete Incident Briefing Report A (page 4)	All	
9:30am – 9:45am	Develop list and contacts of agencies/governments/partners via teleconference <ul style="list-style-type: none"> ▪ Complete Incident Communications List - Form E 	Rick and Glenn lead discussion on who should be on Form E Lisa - Typist	
9:45am – 10:00am	Initiate actions to draft press release	Rick, Glenn lead Lead for press release - (Adam)	Agency PIOs invited to coordinate press release

10:00am – 10:30am	Report on results of discussion with PGE re: FERC compliance/issues <ul style="list-style-type: none"> Document any information/findings that would inform either response actions/response follow-up, or future FERC licensing 	Rick, Amanda, Lori, and Bridget report to group	Confederated Tribes of Warm Springs (Amanda), Bridget (Oregon Parks), Lori (PGE) and Rick (ODFW) lead discussion
	BREAK		
12:30pm – 1:30pm	Initiate Emergency Consultation with the USFWS. Review listed species and critical habitats, proposed response action, and best management practices.	Rick and Glenn lead call with USFWS Pacific Region USFWS Ecological Services	Theresa lines up Ecological Services staff for call
1:30pm – 2:00pm	Finalize response strategies and timeline - Finalize all needed forms Share propose press release	All	
2:00pm – 3:00pm	Participant debrief, evaluation and lessons learned for a) the exercise and b) the planning process: <ul style="list-style-type: none"> What worked well? What needs improvement? What was missing, or should have been covered in advance of the exercise? What should be done differently for future exercises? How can we improve the CRB DIRT website to make the tool more useful? Are there other issues that we need to tackle on behalf of the states? 	Leah and Lisa	
3:00pm	ADJOURN		

Appendix C

Joint Press Release created by partner Public Information Officers



OSMB Media Contact: Ashley Massey
ODFW Media Contact: Adam Baylor
OPRD Media Contact: Chris Havel
PGE Media Contact: Allison Dobscha

Phone: (503) 378-2623
Phone: (541) 464-2179
Phone: (503) 931-2590
Phone: (503) 867-7037

For Immediate Release –Joint Release

Date: Friday, May 22, 2020

Oregon Prepares for Aquatic Invaders with Rapid Response Exercise

On May 19 and 20, a Rapid Response Team of local, state and federal natural resource agencies, and the Confederated Tribes of Warm Springs, convened for a virtual tabletop, scenario-based exercise in the event invasive quagga or zebra mussels are found in the Columbia River Basin.

The practice scenario involved a boat launching into Lake Billy Chinook after coming to the lake from mussel-infested Lake Pleasant, Arizona. In the scenario, the out-of-state boat launched and moored in a marina on the lake for 10 hours before the invasive mussels were detected. The exercise included monitoring and containment options ranging from facility closures, law enforcement assistance, and mandatory boat inspection/decontamination for boats leaving the waterbody.



The Rapid Response Team activated a mock command center and rapid response for containment and explored the best mitigation options for the conditions. There were several

goals in conducting this proactive exercise: streamlining communication among action agencies, strengthening skills, improving response time and coordinating mussel containment actions.

Representatives from the Oregon State Marine Board, Oregon Department of Fish and Wildlife, US Fish and Wildlife Service, Confederated Tribes of Warm Springs, Oregon Department of Agriculture, Oregon Parks and Recreation Department, Oregon Department of Environmental Quality, Portland General Electric, Invasive Species Action Network and the Pacific States Marine Fisheries Commission, participated in the exercise.

“Oregon needs to practice a rapid response plan and act fast, said Glenn Dolphin, the Aquatic Invasive Species Coordinator for the Oregon State Marine Board. “The question isn’t “if” the mussels contaminate the basin, but “when.” Dolphin continued, “We need to have everything dialed in, including technology and communication, to the point where the group is a well-tuned machine with leadership and procedures in place, so everyone knows what role they play.”

The Rapid Response Team took lessons-learned from neighboring states and the measures they’ve implemented to improve response through policy and planning during previous exercises.

“These types of exercises help reveal areas that might be missing or that might need to be strengthened in Oregon’s Rapid Response plan in order to be successful in an eradication effort. This is why it is important to have exercises and to work with various partners. Their expertise on the species and knowledge of the area is very valuable to successful eradication efforts,” says Rick Boatner, Invasive Species, Wildlife Integrity Supervisor for the Oregon Department of Fish and Wildlife. “If you miss your window of opportunity for whatever reason, the mussels will take over an entire ecosystem and now you are dealing with containment and control, which is far more expensive and drastically increases the chance that the mussel will expand into more areas around the state,” adds Boatner.

“We are proud to be a part of this multi-agency, long-term, and proactive approach to invasive species prevention in the Columbia River Basin,” said Dr. Theresa Thom, Regional Aquatic Invasive Species Coordinator for the U.S. Fish and Wildlife Service. “Our successes and lessons learned are being used to inform other rapid response efforts across the nation.”

Mandatory boat inspection stations in Oregon are the first line of defense, but most are only open seasonally during daytime hours, with Ashland and Ontario stations open year-round. Recreational boaters can help protect waterways with three simple steps: **Clean, Drain, Dry** their

boat after every use. In 2020, all boaters are also now required to “**pull the plug**” and empty any water-holding compartments when leaving a waterbody and during transit.

The Marine Board and Oregon Department of Fish and Wildlife co-manage Oregon’s Aquatic Invasive Species Prevention Program. Non-motorized boats 10 feet long and longer are required to purchase and carry a Waterway Access Permit and non-resident motorboat owners must purchase an out-of-state aquatic invasive species permit (AIS).

A portion of the Waterway Access Permit, all of the out-of-state AIS permit fees, as well as a portion of Oregon’s motorized boat registration fees help fund the program. The revenue pays for aquatic invasive species inspection stations, decontamination equipment, staffing, law enforcement, and outreach materials.

For more information about aquatic invasive species permits and to purchase a permit, visit: <https://myodfw.com/articles/waterway-access-and-aquatic-invasive-species-permits>.

Learn more about aquatic invaders and see boat inspection reports at : <https://www.oregon.gov/osmb/boater-info/Pages/Aquatic-Invasive-Species-Program.aspx>.

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Appendix D

Incident Action Plan and Support Materials

INCIDENT BRIEFING (CRB IMS Form A)

1. Incident Name:	2. Water Body Name:	3. Date Initiated:
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4. **Map/Sketch** (include sketch or map showing the total area of operations, the suspect or infested site/area, direction of water flow if applicable, impacted shoreline(s), boat ramps and other access points, and other graphics depicting situational and response status)



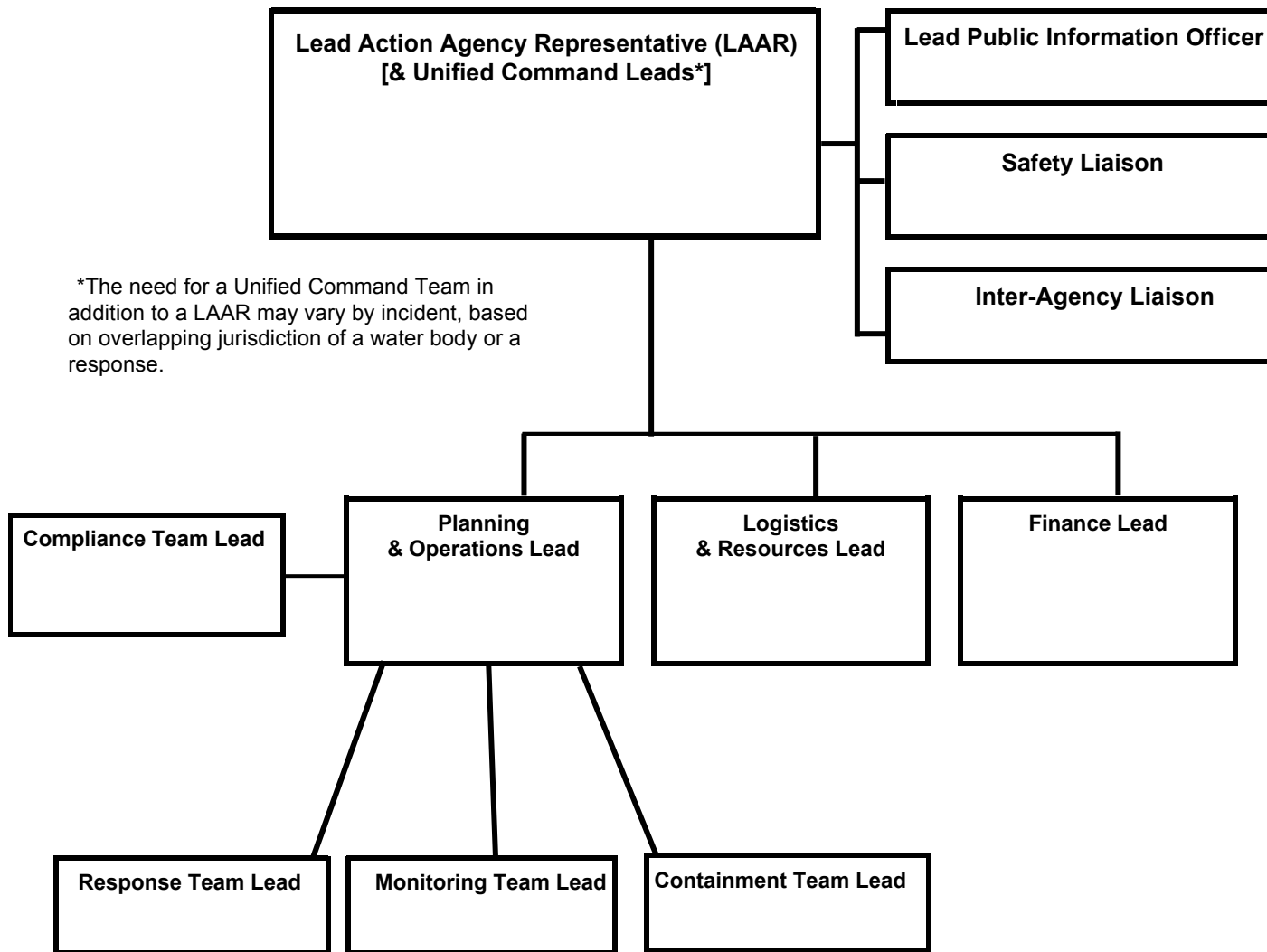
5. **Summary of the current situation** (include status of additional monitoring/verification sampling):

6. Prepared by:	Agency/Title:	Signature: _____
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INCIDENT BRIEFING (CRB IMS Form A)

1. Incident Name:	2. Water Body Name:	3. Date Initiated:
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9. Organizational Chart (fill in additional organization as appropriate):



- Please see also:
- Form B - Expanded Incident Organizational Chart
 - Form E - Contact Names and Information for People Associated with the Incident

6. Prepared by:	Agency/Title:	Signature: _____
CRB IMS Form A, Page 3 of 4 [FEMA ICS - 2011]	Date:	

INCIDENT BRIEFING (CRB IMS Form A)

1. Incident Name:	2. Water Body Name:	3. Date Initiated:
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10. Resource Information:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Cost	Notes (agency/location/status)
				<input type="checkbox"/>		
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Notes:	Total Costs:
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6. Prepared by:	Agency/Title:	Signature: _____
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EQUIPMENT INVENTORY (CRB IMS Form D2)

Adopted from FEMA ICS-218

1. Incident Name:	2. Date:	3. Equipment Category:
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4. Vehicle/Equipment Information

	Order Request Number	Vehicle or Equipment Classification	Vehicle or Equipment Make	Category/Kind/Type, Capacity, or Size	Vehicle or Equipment Features	Agency or Owner	Operator Name or Contact	Vehicle License or ID No.	Incident Assignment	Incident Start Date and Time	Incident Release Date and Time

CRB IMS D2 Pg ___ of ___	5. Prepared by: _____	Agency: _____	Signature: _____
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Add: Electrofishing boats - Marine Board, ODA, and ODFW have boats - need for only one boat in the water sampling with trained ODFW crews sampling veligers

INCIDENT ACTION CRITICAL ANALYSIS (CRB IMS Form C)

1. Incident Name:	2. Operational Period (Date/Time) From: _____ To: _____	3. Location:
4. Planning and Operations Team: <input type="checkbox"/> Response <input type="checkbox"/> Monitoring <input type="checkbox"/> Containment <input type="checkbox"/> Other:		
5. Objective(s) (optional: additional forms may be completed for each objective):		
6. Priorities:		
7. Limitations and Constraints:		
8. Leadership Messaging (safety, key actions, direction, etc.):		
 <p style="text-align: right;">See form D1 for Incident Safety Hazards</p>		
9. Prepared by: (Operations and Planning Lead)		10. Date/Time:
CRB IMS Form C, Page ____ of ____		adapted from FEMA ICS-202

INCIDENT ACTION CRITICAL ANALYSIS (CRB IMS Form C)

1. Incident Name:	2. Operational Period (Date/Time) From: _____ To: _____	3. Location:
4. Planning and Operations Team: <input type="checkbox"/> Response <input type="checkbox"/> Monitoring <input type="checkbox"/> Containment <input type="checkbox"/> Other:		
5. Objective(s) (optional: additional forms may be completed for each objective):		
6. Priorities:		
7. Limitations and Constraints:		
8. Leadership Messaging (safety, key actions, direction, etc.):		
		See form D1 for Incident Safety Hazards
9. Prepared by: (Operations and Planning Lead)	10. Date/Time:	
		adapted from FEMA ICS-202

OPERATIONAL PLANNING WORKSHEET (CRB IMS Form D)

1. Incident Name:			2. Date:					3. Planning and Operations Team:				
4. Team, Group, or Other designation	5. Work Assignment & Special Instructions	6. Resources						7. Costs	8. Special Equipment & Supplies	9. Reporting Location	10. Requested Arrival Time	
		Req.										
		Have										
		Need										
		Req.										
		Have										
		Need										
		Req.										
		Have										
		Need										
CRB IMS Form D Page ___ of ___ Adapted from ICS Form-215	11. Total Resources Required							Total Costs: \$	14. Prepared by: Name: Agency: Signature:			
	12. Total Resources Have on Hand											
	13. Total Resources Need To Order											

PERSONNEL AND RESOURCES (CRB IMS Form D1) Adopted from FEMA ICS-209

1. Incident Name:			3. Planning and Operations Team(s):					<i>Incident Resource Commitment Summary</i>	
2. Date Prepared:			<input type="checkbox"/> Response <input type="checkbox"/> Containment <input type="checkbox"/> Monitoring <input type="checkbox"/> Other:						
4. Agency or Organization:	5. Resources (summarize resources by category or type; show # of resources on top ½ of box, show # of personnel, if any, on bottom ½):							6. Costs (if any)	7. Total Personnel
								NA	
								NA	
								NA	
								NA	
								NA	
								NA	
								NA	
								NA	
8. Totals									
9. Additional Cooperating and Assisting Organizations Not Listed Above:									
10. Comments:									
CRB IMS Form D1 Page ____ of ____						Prepared by:			