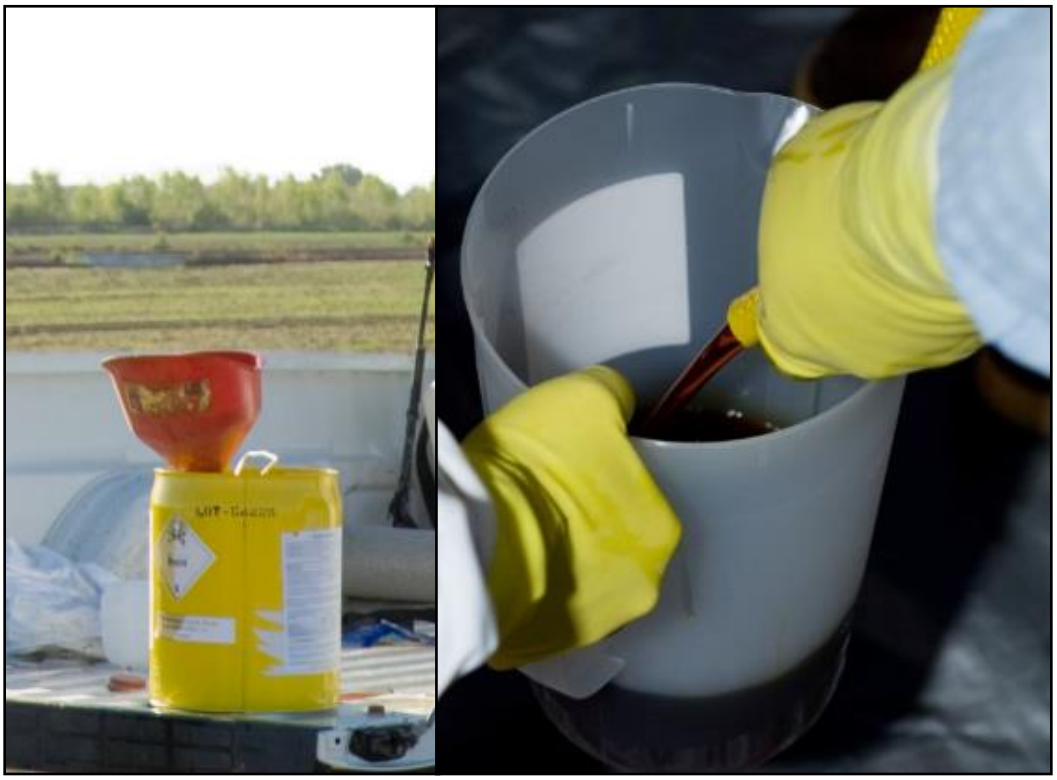
Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Imperial Ponds Renovation Plan – 2014



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

April 2014

Lower Colorado River Multi-Species Conservation Program Steering Committee Members

Federal Participant Group

Bureau of Reclamation
U.S. Fish and Wildlife Service
National Park Service
Bureau of Land Management
Bureau of Indian Affairs
Western Area Power Administration

Arizona Participant Group

Arizona Department of Water Resources
Arizona Electric Power Cooperative, Inc.
Arizona Game and Fish Department
Arizona Power Authority
Central Arizona Water Conservation District
Cibola Valley Irrigation and Drainage District
City of Bullhead City
City of Lake Havasu City
City of Mesa
City of Somerton
City of Yuma
Electrical District No. 3, Pinal County, Arizona
Golden Shores Water Conservation District
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Mohave Water Conservation District
North Gila Valley Irrigation and Drainage District
Town of Fredonia
Town of Thatcher
Town of Wickenburg
Salt River Project Agricultural Improvement and Power District
Unit "B" Irrigation and Drainage District
Wellton-Mohawk Irrigation and Drainage District
Yuma County Water Users' Association
Yuma Irrigation District
Yuma Mesa Irrigation and Drainage District

Other Interested Parties Participant Group

QuadState Local Governments Authority
Desert Wildlife Unlimited

California Participant Group

California Department of Fish and Wildlife
City of Needles
Coachella Valley Water District
Colorado River Board of California
Bard Water District
Imperial Irrigation District
Los Angeles Department of Water and Power
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Conservation Participant Group

Ducks Unlimited
Lower Colorado River RC&D Area, Inc.
The Nature Conservancy

Lower Colorado River
Multi-Species Conservation Program

Imperial Ponds Renovation Plan – 2014

Prepared by:

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Lower Colorado River
Multi-Species Conservation Program
Bureau of Reclamation
Lower Colorado Region
Boulder City, Nevada
http://www.lcrmscp.gov

April 2014

Finnegan, A.D. 2014. Imperial Ponds Renovation Plan – 2014. Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

ACRONYMS AND ABBREVIATIONS

AZNF&WCO	Arizona Native Fish and Wildlife Conservation Office
BONY	bonytail, *Gila elegans*
INWR	Imperial National Wildlife Refuge
JHA	Job Hazard Analysis
MSDS	Material Safety Data Sheet
NPIC	National Pesticide Information Center
PFD	personal flotation device
PPE	personal protective equipment
ppm	parts per million
RASU	razorback sucker, *Xyrauchen texanus*
Reclamation	Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
YPG	Yuma Proving Ground

Symbols

°C	degrees Celsius
°F	degrees Fahrenheit

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STATEMENT OF NEED

Disconnected backwaters free of nonnative fish could provide habitat for a recruiting population of bonytail (*Gila elegans*) (BONY) and razorback sucker (*Xyrauchen texanus*) (RASU) (Bureau of Reclamation [Reclamation] 2004). Currently, the Imperial Ponds have a suite of nonnatives, including black crappie (*Pomoxis nigromaculatus*), bluegill, (*Lepomis macrochirus*), common carp (*Cyprinus carpio*), redear sunfish (*Lepomis microlophus*), threadfin shad (*Dorosoma petenense*), warmouth *(Lepomis gulosus*), and western mosquitofish (*Gambusia affinis*). Although 100-percent nonnative-free backwaters are likely not possible for extended periods, a rigorous effort should be made to attempt a complete renovation on all the ponds before additional stocking efforts are initiated. In this plan, we will address pre-stocking protocols, including details on site preparation, as well as accepted protocols for treatments and intensive post-renovation monitoring. Lessons learned from previous renovations will guide our techniques and protocols to secure the best chances for success. Furthermore, renovation conducted well before any stocking is scheduled will allow for longer term monitoring to assess success and possibly correcting unsuccessful pond renovations, thereby giving stocked fish greater likelihood for establishment and recruitment.

Ponds 1 and 3 have previously been renovated, but considerations for site preparation and post-renovation monitoring were not included in the renovation plan and may have contributed to the unsuccessful removal of all fish from these ponds. In addition, the screened surface water supply was implicated as a possible vector for invasion of nonnative fishes. In order to address these factors, this plan includes pre-renovation site preparation, specific procedures and protocols for completing the renovation at the Imperial Ponds, and a post-renovation monitoring plan for determining effectiveness of the treatments. The ponds now have a water delivery system that is 100-percent well-water supplied and is assumed to be completely free of all life stages of nonnative fish, thereby eliminating a key vector for invasion and establishment of nonnative species.

Treatment Plan Actions

1. Removal of BONY and RASU from Pond 1.

2. Removal of inundated vegetation in the margins and hummocks of five ponds and the marsh area in Pond 5.

3. Chemical renovation of all six ponds using Prenfish® CFT Legumine™ (5-percent rotenone) Fish Toxicant.

4. Post-renovation monitoring will target larval and adult fish.

5. Renovation efforts will be evaluated and successes and failures identified.

TREATMENT PLAN

Pre-Renovation

Native Fish Removal

Efforts to remove BONY and RASU from Pond 1 will take place in the spring and autumn of 2014. A variety of sampling gear will be used, including, but not limited to, trammel netting, hoop netting, and trap nets. RASU will be transferred to the A10 backwater in Ehrenberg, Arizona, and BONY will be transported to the Lake Mead State Fish Hatchery. Population estimates will be generated between the spring and autumn sampling to assess the number of BONY and RASU remaining in the pond.

Removal of Vegetation

Inundated vegetation will be cleared along the shorelines and hummocks of the ponds to prevent areas of potential concealment for fish. Chemical piscicide may not be able to completely penetrate areas of thick-matted vegetation and will result in an incomplete removal of fish. A large marsh area located in Pond 5 will also be cleared. Removal of shoreline vegetation will be completed manually (mowing/cutting) between October 2014 and January 2015 to avoid nesting season. The marsh area in Pond 5 is to be removed by burning and/or manually depending on the effectiveness of the burning effort.

- Shoreline vegetation will be removed using hedge trimmers. All clippings will be collected and placed on brush piles as designated by Imperial National Wildlife Refuge (INWR) personnel.

- Removal of the marsh area in Pond 5 will require two parts: dewatering to allow the marsh to dry and removal of vegetation by means of burning or manual removal or a combination of both.

    - The pond will be lowered to a water surface elevation of 180 feet, which equates to roughly 66 to 106 acre-feet of water that will be removed from the pond. Reclamation's Yuma Area Office will be supplying a pump(s) that will be adequate for our needs. The pump(s) will be installed in October 2014. The pump(s) discharge line will go into the drainage ditch that runs along the east side on the ponds.

    - The pond's water elevation will be maintained at an elevation of approximately 180 feet for 14 days to allow time for the substrate to dry in preparation for vegetation removal.

    - The burn will be completed by the U.S. Fish and Wildlife Service (USFWS) Arizona Fire District.

- In the event that the prescribed burn cannot be accomplished, vegetation will be removed manually using hedge trimmers. All clippings will need to be collected and placed on brush piles as designated by INWR personnel.

- Following the burn in Pond 5, the well will be turned back on to bring the pond back to the target water elevation of 185 feet.

Addition of Water to the Ponds

Freshwater percolations have been identified in the ponds, which are preventing them from being completely drained and dried. It is assumed that the source of these freshwater percolations is groundwater intrusion from the adjacent Colorado River. Water surface elevation data collected in the ponds and the Colorado River suggest that there is a subsurface connection between the Colorado River and the ponds. This subsurface connection may allow for groundwater intrusion to dilute the chemical piscicide and create lenses of freshwater where fish may be able to escape treatment. Water elevation will be managed according to river stage to minimize groundwater intrusion. Therefore, prior to a chemical application, the ponds will be brought to a water elevation of 185 feet; this should exceed the surface elevation of the river, thus creating a positive head pressure in the ponds and in theory suppressing the freshwater percolations.

Rotenone Application

Rotenone will be applied as a two part treatment (i.e., one treatment = two chemical applications) (Robinson et al. 2009). The first application is to be applied in December 2014; the second, followup application is scheduled for January 2015. Prior to each day of application, a safety briefing will be given to all participants to review and sign the Job Hazard Analysis (JHA) and to discuss the layout of the day's activities and address any remaining concerns or questions. Any boats or equipment that is to be used for the second application that has not been dedicated to the Imperial Ponds will be inspected and sanitized so that nonnative fish (of any life stage) will not be introduced.

Fish Survival Stations

Hoop nets and minnow traps will be deployed the night prior to renovation. All nonnative fish collected from the sampling gear will be placed into escape-proof fish cages. The fish cages will be deployed subjectively in areas where rotenone distribution may be a cause for concern (e.g., area of inundated vegetation). The cages will be monitored every 30 minutes from the time the treatment begins until the fish die. The survival station will provide the time needed to kill the fish and the effectiveness of the kill (Finlayson et al. 2000).

Application

The piscicide, rotenone, will be applied using a self-contained spray boat with a venturi tube, which is property of the USFWS's Arizona Native Fish and Wildlife Conservation Office (AZNF&WCO) – Parker, Arizona. A second boat will be used to set up the fish survival stations and fish recovery operations.

- Both boats will be launched and trucks and trailers removed from the boat ramp so that it may be used as the staging area for each pond.

- A plastic barrier will be placed on the boat ramp and will extend to the water, providing an impermeable surface that is sloped toward the treatment area. In the event of a small spill, this will allow the chemical to be rinsed into the treatment area (Finlayson et al. 2010). A small spill is defined as less than 20 gallons (Finlayson et al. 2000).

- Containers are to remain sealed until ready for use. All personnel handling rotenone will be in the appropriate personal protective equipment (PPE).

- Rotenone will be transferred to the sprayer tank on the boat. The sprayer tank will contain a 1:10 rotenone:water mixture to be applied at a concentration of 4 parts per million (ppm) (see tables 1 and 2).

- Once a container is emptied, it will be placed back on the plastic barrier until it can be cleaned and prepped for disposal. Any containers that have rotenone remaining should be prepared for safe transport to the next pond.

- The application of rotenone will be dependent on weather conditions. Application will not be planned if the local forecast indicates high wind or rain. If winds exceed 15 miles per hour, the efforts will be moved to a later time of day or to the following day.

- The rotenone will be applied by boat; one person will be needed to operate the boat, and two people will be operating the sprayers on the boat. The boat will begin circling the perimeter of the pond, and rotenone will be distributed using pesticide sprayers and a venturi tube attached to the lower unit of the outboard motor. The boat will continue working in a decreasing radius circular pattern until it reaches the center of the pond, providing complete coverage of the pond.

- Remaining rotenone in the sprayer tank will be used to target areas that may provide refuge for fish species (e.g., areas of inundated vegetation, riprap bank line, etc.).

- The removal of dead fish from the treatment area for disposal is not needed under normal circumstances and is limited to times that they may become a public nuisance (Finlayson et al. 2010). Dead fish will not be removed from the pond, as the ponds are located in an area closed to the public and should not be a nuisance concern. If the biomass reaches levels of concern, the fish will be collected and buried.

Data

Data sheets will be created prior to the renovation. Data to be recorded during the renovation efforts will include:

- Application of rotenone
    - Pond number
    - Water elevation
    - Amount of rotenone applied
    - Application date
    - Application start and end time
    - Applicator name(s)
    - Elevation of river
- Fish
    - Number of BONY and RASU removed from pond
    - Passive integrated transponder tag number
    - Length
    - Stocking location of any recovered fish

Cleanup and Disposal

- Following application, the boat and sprayers will be removed from the pond and cleaned prior to launching into the next pond.
- Empty containers of rotenone are to be triple rinsed, punctured, and disposed of by USFW AZNF&WCO – Parker, Arizona.
- An exit briefing will be held after completion of the application to evaluate the process and address concerns or changes to be made prior to the second application.

Amount of Piscicide

Prenfish® CFT Legumine™ (5-percent rotenone) Fish Toxicant will be the piscicide used to renovate the Imperial Ponds. We will adhere to the product's general guide for application rates and concentrations of rotenone needed to control fish in lakes, ponds, and reservoirs (table 1).

Table 1.—Prenfish® CFT Legumine™ (5-percent rotenone) Fish Toxicant general guide to the application rates and concentrations of rotenone needed to control fish in lakes, ponds, and reservoirs

Type of use	Parts per million		Number of acre-feet covered by 1 gallon
	Prenfish Toxicant	Active rotenone	
Selective treatment	0.10 to 0.13	0.005 to 0.007	30 to 24
Normal pond use	0.5 to 1.0	0.025 to 0.050	6.0 to 3.0
Remove bullheads or carp	1.0 to 2.0	0.050 to 0.100	3.0 to 1.5
Remove bullheads or carp in rich organic ponds	**2.0 to 4.0**	**0.100 to 0.200**	**1.5 to 0.75**
Preimpoundment treatment above dam	3.0 to 5.0	0.150 to 0.250	1.0 to 0.60

The type of use identified for the treatment of the Imperial Ponds is the removal of bullheads or carp in rich organic ponds (table 1, red text). The amount of piscicide used is determined by the water volume reported in acre-feet. Water volume in acre-feet has been calculated for all six ponds at a water elevation of 185 feet (table 2). The ponds will be treated at 4 ppm; 1 gallon of rotenone will treat 0.75 acre-foot of water. The toxicant will be mixed at a rate of 1 part toxicant to 10 parts water. The first application is scheduled for the week of December 1 – 5, 2014. The second, followup application will be applied the week of January 12 – 16, 2014. The amount of Prenfish® Toxicant needed for treatment of each pond is identified in table 2.

Table 2.—Total gallons of Prenfish® Toxicant needed for each treatment base on a pond water elevation of 185 feet

(Calculated as acre-feet of water divided by the number of acre-feet covered by 1 gallon [see table 1])

Pond	Acre-feet of water	4 ppm total gallons
1	65	86.7
2	111	148.0
3	89	118.7
4	90	120.0
5	103	137.3
6	64	85.3
Total	**522**	**696**

Native Fish Reviving

A boat will be set up to retrieve native fish that may surface during renovation efforts. The boat will have a tank of freshwater with aeration. The revival boat will follow the treatment boat, remaining upwind of the treatment boat at a minimum distance of 15 feet. If a BONY or RASU surfaces during the application, it will be netted and placed into the clean water. Once the application of rotenone to that pond is completed, the fish will be transferred to a large holding tank until it can be stocked into the A10 backwater (RASU) or transported to the Lake Mead State Fish Hatchery (BONY). The water in the bucket on the revival boat will be replaced with clean water before proceeding with efforts on the next pond. Observers will be on shore to assist in identifying BONY and RASU that are coming to the surface.

Site Safety Plan

The Site Safety Plan has been prepared to identify and mitigate potential safety hazards associated with the rotenone renovation of the Imperial Ponds. A safety meeting will be held each morning prior to beginning operations to review the JHA (attachment 1). All participants will sign the JHA following the morning safety meeting. The potential safety hazards associated with rotenone include pesticide exposure, pesticide spills, boating, general safety hazards, and weather.

Pesticide Exposure

Rotenone ($C_{23}H_{22}O_6$) is a botanical pesticide registered for piscicide use. It has been classified by the United States Environmental Protection Agency as a Category 1 material. Category 1 materials are classified in the extremely toxic range for acute toxicity (Finlayson et al. 2000). The most common exposures include:

- Inhalation
- Ingestion
- Dermal exposure
- Ocular exposure (Finlayson et al. 2000, 2010; Prentiss, Incorporated, 2000)

The appropriate PPE is required when handling this chemical. Decontamination stations also need to be available onsite.

Personal Protective Equipment

All personnel that will be handling the chemical will be required to wear the appropriate PPE:

- A one-piece chemical resistant suit will be worn by anyone handling the chemical and anyone that is within reach of the chemical (overspray area from the applicator boat).

- Rubber gloves will be worn by anyone in contact with the chemical or anyone that will have direct skin contact with the water after application.

- Protective eye covering, a face mask, or googles will be worn by the applicators and anyone within reach of the chemical.

- An air-purifying respirator will be worn by licensed applicators from the AZNF&WCO. Undiluted chemicals may only be handled by licensed applicators using an air-purifying respirator.

The crew engaged in fish cleanup efforts will be required at a minimum to wear plastic gloves and eye protection.

Washing Facilities

In the event of skin contact with the chemical, a wash stations will be set up at the staging area as described in Finlayson et al. (2000):

- A large wash tub to allow for full immersion of at least one person will be provided. Following immersion, the person will clean the area of contact with liquid soap and rinse with clean water (5-gallon plastic jug). Disposable shop towels and a new, clean, chemical-resistant suit will be available at the wash station.

- If the chemical comes into contact with the eyes, an eye wash station will be available at the staging location. After flushing eyes for 15 to 20 minutes, the individual should seek emergency services if needed. A list of emergency phone numbers and the location of emergency services will be posted by the washing facilities (attachment 2).

- If an individual inhales the chemical, they should seek emergency services immediately.

- Moist towelettes will be kept on boats and at any other locations where personnel may have potential contact with the chemical. The moist towelettes may be used to clean googles and any minor areas of skin contact.

Pesticide Storage and Spills

The product is to be stored in a dry place away from children and animals (Finlayson et al. 2010). The product should not be stored below 40 degrees

Fahrenheit (°F)/4.4 degrees Celsius (°C). According to the product's label and Material Safety Data Sheet (MSDS), it is stable for 1 year when stored sealed at 70 °F/21.1 °C. There is not a maximum storage temperature provided on the label or MSDS; however, Finlayson et al. (2010) recommend that for long-term storage, the temperature should not exceed 95 °F/35 °C. We will try to arrange for the chemical delivery to be after October 1, 2014, to avoid extreme temperatures.

Rotenone will be stored in its original containers. It will be stored onsite in the shipping container at INWR on drum spill containment pallets until its time of use. The shipping container is not temperature controlled, and the average high temperature in September may exceed 95 °F/35 °C, but should not exceed 101 °F/38.3 °C (www.weather.com).

A warning sign will be posted on the canister until the renovation is completed. The sign will include: "Danger – Pesticides – Keep Out" and the name, address, and phone number of a contact person.

DANGER
PESTICIDE STORAGE AREA
ALL UNAUTHORIZED PERSONS KEEP OUT
CONTACT TRISH DELROS, 500 FIR STREET, BOULDER CITY, NV,
702-293-8202 WITH ANY QUESTIONS

Spills will be reported to the State Spill Response Unit and any other agencies as appropriate. When at the pond treatment site, a plastic barrier sloped toward the body of water to be treated will be in place to direct any spills to the water. If a spill occurs, the plastic barrier will be rinsed using a bilge pump to wash rotenone into the water.

Boating

Two boats will be on each pond during renovation efforts. The first boat will contain the rotenone and application equipment. The second boat is responsible for native fish salvage and revival. All personnel will wear a personal flotation device (PFD). The PFDs will need to be cleaned at the end of each day to remove any chemical that may have come into contact with it.

Heat Stress

The average high for Yuma, Arizona, in December is 69 °F/20.6 °C, with an average low of 46 °F/7.8 °C. The average high in January is 70 °F/21.1 °C, with an average low of 46 °F/7.8 °C (www.weather.com). The average temperatures may not raise a cause for concern regarding heat-related illnesses, but with the

addition of the required PPE and no shade, precautions should be taken. Personnel should take measures to stay hydrated and take appropriate breaks. A water cooler will be provided on station.

General Safety

Terrain around the ponds is dirt and gravel roadways. Renovation team members will need to use caution when walking to avoid trip hazards and falls. Rotenone will be packaged in 5-gallon canisters and can way up to 50 pounds. Use proper lifting techniques and team lifting. Take all safety precautions when trailering equipment around the ponds.

Post-Renovation Monitoring

Post-renovation monitoring will include monitoring for all life stages of fish previously known to exist in the ponds. Monitoring will occur for 2 years (Foye 1964) after the renovation of the ponds or until fish are captured from all of the ponds. Monitoring will be completed monthly. Monitoring gear will be dedicated to monitoring at the Imperial Ponds. If a fish is captured from one of the ponds, the equipment is to be cleaned and inspected for any fish that may remain in the nets prior to being deployed in another pond.

- Ichthyoplankton tows will be used to capture any larvae in the ponds.
    - Transects will be established for each pond.
    - Three depths will be sampled per transect; the first will be ½ meter from the bottom of the pond, the second at mid-water column, and the third at the surface.
    - Catch will be preserved with 95-percent denatured ethanol for later identification.
- Light traps will be used to collect larval and juvenile fish, many of which are phototactic.
    - Light traps will be deployed systematically along transects to provide an even sampling distribution throughout the pond.
    - Traps will be deployed at sunset and retrieved at sunrise or shortly thereafter.

- Minnow traps
    - Baited and unbaited minnow traps will be deployed systematically along transects to provide an even sampling distribution throughout the pond.
    - Captured fish will be identified to species when possible, and a length and weight will be recorded.
- Hoop nets
    - Hoop nets will be deployed along the shoreline and hummocks.
    - Nets may be baited or unbaited.
    - Nets will be fished overnight. Nets may stay deployed in the same location for the sampling week, but must be checked daily.
    - Captured fish will be identified to species when possible, and a length and weight will be recorded.
- Trammel and gill nets
    - Trammel nets with a 0.50- to 1.5-inch mesh or experimental gill net or both will be deployed.
    - Nets will be deployed for a maximum of 2 hours so that mortality of nontarget species, such as birds and mammals, can be minimized. The nets will be checked or pulled on 2-hour intervals.
    - Captured fish will be identified to species when possible, and a length and weight will be recorded.

At the end of the 2-year monitoring period, or when fish have been detected in all ponds, a report will be composed that identifies success and failures of the renovation. Based on the outcome of the renovation, and discussions with the Imperial Ponds Fisheries Coordination Team, the report will include recommendations for stocking BONY and RASU back into the ponds.

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ATTACHMENT 1

Job Hazard Analysis for Chemical Application of Rotenone at Imperial Ponds

Job Hazard Analysis	**JOB TITLE:** Chemical Renovation of Imperial Ponds	PAGE 1 OF 3	DATE:
PARTICIPANTS/AGENCY: James Stolberg (Reclamation), Mitch Thorson (USFWS), Nate Caswell (USFWS), Vance Wolf (USFWS), Trish Delrose (Reclamation), and Margie Shaffer (Reclamation)		**SUPERVISOR**: G. Garnett/T. Murphy	**ANALYSIS BY:** Andrea Finnegan
LOCATION: Imperial National Wildlife Refuge, Arizona	**PERSONAL PROTECTIVE EQUIPMENT**: Protective clothing, gloves, eye protection, personal flotation devices		**APPROVED BY:**

TASK/STEP	POTENTIAL HAZARDS	CONTROL MEASURES
Mobilize equipment to renovation site	Heavy lifting Back strain	Team lifting Use of equipment to move items Proper lifting techniques – lift with knees not back
Use of heavy equipment – by certified operators only (they are to follow operator protocols). This task addresses hazards for those within the work zone.	Accident	Be aware of location of equipment Do not stand in the way of equipment
Pesticide exposure	If swallowed	Wear provided personal protective equipment (PPE) Transport victim to medical facility Call the National Pesticide Information Center (NPIC) at, 1-800-585-3738 immediately for treatment advice Do not induce vomiting unless instructed by NPIC Do not provide any liquids to the person Do not give anything by mouth to an unconscious or convulsing person
Pesticide exposure	If inhaled	Wear provided PPE Remove victim to fresh air If not breathing, administer CPR Transport victim to medical facility Contact NPIC at 1-800-585-3738

TASK/STEP	POTENTIAL HAZARDS	CONTROL MEASURES
Pesticide exposure	Ocular exposure	Wear provided PPE Rinse slowly and gently with water for 15–20 minutes Contacts – rinse with contacts in for 5 minutes, then remove and continue rinsing eyes for 10–15 minutes Seek medical attention Contact NPIC at 1-800-585-3738
Pesticide exposure	Dermal exposure	Wear provided PPE Take off contaminated clothing Submerse area in water provided at wash station for 15–20 minutes Use soap to clean area and rinse with clean bottles of water next to wash station Discard contaminated suit and get fresh suit Seek medical attention if needed Contact NPIC at 1-800-585-3738 if further direction is needed
Pesticide spill	Dermal exposure Environmental impacts	See previous for dermal exposure Clean spills by washing rotenone into treated waterway Notify appropriate agencies
Netting	Working on boat Entanglement Lifting	Boating – see previous task/step Keep boat clean and organized, be aware of all lines, take your time, keep a knife within easy reach to remove yourself from entanglement if needed Lifting – see previous task/step

TASK/STEP	POTENTIAL HAZARDS	CONTROL MEASURES
Boating	Man overboard Trailering Pesticide exposure	Wear PFD Verify trailer is secure and lights are working – be aware of surroundings See “Pesticide exposure” task
Pump operation and fueling	Dermal exposure to diesel fuel Prolonged exposure to loud noise levels Injury from moving driveshaft	Operated by trained personnel only PPE: ear plugs, steel toe boots Avoid moving parts Dermal exposure – use washing station
Wildlife	Mosquito bites	Use of repellent Use of mosquito netting ThermaCell units cannot be used near chemical
Heat stress	Overheating Dehydration	PPE must be worn – take breaks as needed Stay hydrated
Chemical and physical hazards associated with rotenone	Flammable: Keep away from heat and open flame. Flash point minimum 45 degrees Fahrenheit	No smoking No ThermaCell use

Employee acknowledgement signatures

Agency	Printed name	Signature	Date

ATTACHMENT 2

Emergency Contacts

REPORT ALL ACCIDENTS AND INJURIES TO THE SUPERVISOR

TELEPHONE NUMBERS

All Emergency Services	911
Yuma Proving Ground (YPG) Emergency Dispatch	928-328-2117

Note: The YPG emergency dispatch number is the same as any other 911 system; dispatch can direct the Yuma County Sheriff, fire response, and emergency medical care from this single number.

HOSPITAL LOCATION(S)

Yuma Regional Medical Center
2400 South Ave A
Yuma, Arizona