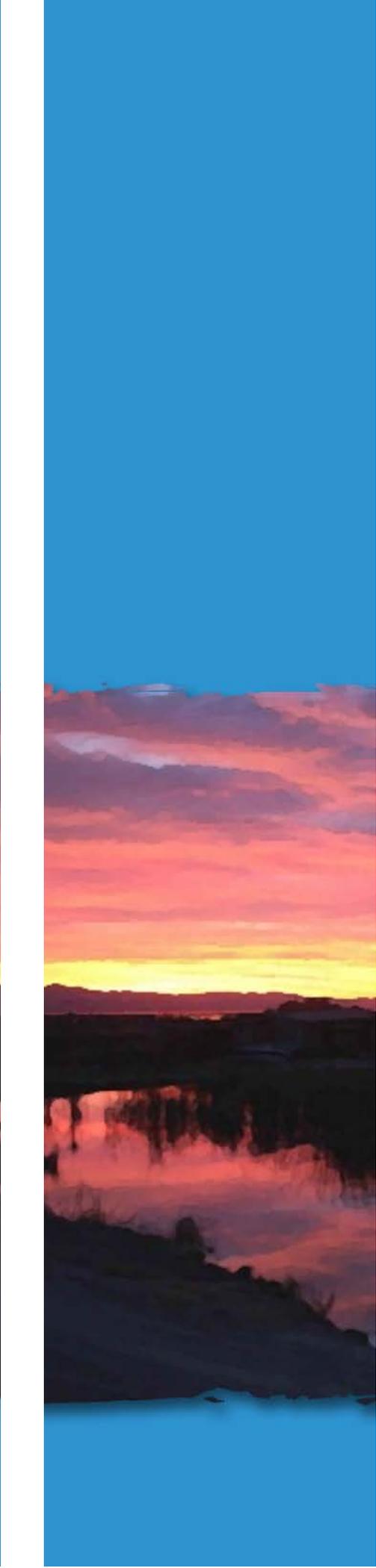


Appendix E
WHCP Environmental Checklist





Appendix E

WHCP Environmental Checklist

This appendix provides a summary checklist of WHCP activities to be conducted by the DBW in order to maintain compliance with the PEIR mitigation measures; WHCP Operations Management Plan (OMP); and USFWS, NOAA-Fisheries, and NPDES permits. There are two separate checklists, one for supervisors/environmental scientists (**Exhibit E-1**), and one for the field crew (**Exhibit E-2**). We include activities to be conducted by the Field Supervisor in the first checklist. Each checklist is divided chronologically into (1) Planning/Pre-Season; (2) In-Season; and (3) Post-Season. Following each activity, we identify the activity source – either a PEIR mitigation measure number, the WHCP Operations Management Plan (OMP), or both. Federal permit requirements are incorporated into the mitigation measures and OMP.

Table E-1, on the next page, provides a listing of the 22 mitigation measures following the same responsible party/chronology classification. Some mitigation measures appear in both the Supervisor/Environmental Scientist column, and the Field Crew column. One mitigation measure, #7 (Implement an adaptive management approach to minimize the use of herbicides) appears in all time periods for the Supervisor/Environmental Scientist, because it is a foundation of all WHCP activities.

Table E-1
WHCP Mitigation Measures by Responsible Party and Time Period

		Supervisor/Environmental Scientist Activities		Field Crew Activities
Planning/ Pre-Season	7.	Implement an adaptive management approach to minimize the use of herbicides	18.	Require treatment crews to participate in training on herbicide and heat hazards
	8.	Provide treatment crews with electronic mapping that identifies previously surveyed areas for giant garter snake habitat		
	18.	Require treatment crews to participate in training on herbicide and heat hazards		
In-Season	5.	Implement temporal and spatial limitations and restrictions on herbicide treatments to minimize treatments during times, and at locations, where larval and/or migratory fish are likely to be present	1.	Avoid herbicide application near special status species, and sensitive riparian and wetland habitat; and other biologically important resources
	6.	Monitor herbicide and adjuvant levels to ensure that the WHCP does not result in potentially toxic concentrations of chemicals in Delta waters	2.	Provide a 250 foot buffer between treatment sites and shoreline elderberry shrubs (<i>Sambucus</i> spp.), host plant for the valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)
	7.	Implement an adaptive management approach to minimize the use of herbicides	3.	Conduct herbicide treatments in order to minimize potential for drift
	14.	Conduct handpicking and herding only during winter	4.	Operate program vessels in a manner that causes the least amount of disturbance to the habitat
	20.	Implement safety precautions on hot days to prevent heat illness	9.	Monitor dissolved oxygen levels pre- and post-treatment for all WHCP treatments
	21.	Follow the Memorandum of Understanding (MOU) protocol for herbicide applications within one (1) mile of Contra Costa Water District (CCWD) drinking water intake facilities	10.	Treat no more than three contiguous acres at any treatment site
	22.	Notify County Agricultural Commissioners about WHCP activities	11.	Treat no more than one-half of the area of completely infested dead-end sloughs to allow for fish passage
			12.	Treat no more than one-half of completely infested moving waterways at one time to allow for fish passage
			13.	Use dip nets during and immediately following treatment to collect plant fragments
			15.	Identify and utilize disposal areas that have no and/or low habitat value for the federal and State listed giant garter snake (<i>Thamnophis gigas</i>)
			16.	Identify and utilize disposal areas that are at least 100 feet away from elderberry shrubs (<i>Sambucus</i> spp.)
			17.	Minimize public exposure to herbicide treated water
			19.	Follow best management practices to minimize the risk of spill and to minimize the impact of a spill, should one occur
		20.	Implement safety precautions on hot days to prevent heat illness	
Post-Season	7.	Implement an adaptive management approach to minimize the use of herbicides		

Checklist #1 – Supervisor/Environmental Scientist Activities

- | <i>Planning/Pre-Season</i> | |
|----------------------------|---|
| <input type="checkbox"/> | 1. Obtain and update records for crew Qualified Applicator Certificates (QAC) and continuing education. (OMP) |
| <input type="checkbox"/> | 2. Ensure that the WCHP is utilizing the most recent herbicide labels and MSDS, and provide training to crews on reading, understanding, and following herbicide label requirements. (OMP) |
| <input type="checkbox"/> | 3. Prepare and conduct environmental awareness training for treatment crews. (OMP) |
| <input type="checkbox"/> | 4. Prepare and conduct training on use of field equipment for treatment crews. (OMP) |
| <input type="checkbox"/> | 5. Conduct herbicide handling training for the field staff, in accordance with Title 3, Food and Agriculture, Division 6 of the California Code of Regulations, "Pesticides and Pest Control Operations." (OMP) |
| <input type="checkbox"/> | 6. Require treatment crews to participate in training on herbicide and heat hazards (Mitigation #18) |
| <input type="checkbox"/> | 7. Provide treatment crews with electronic mapping that identifies previously surveyed areas for giant garter snake habitat. (Mitigation #8 and OMP) |
| <input type="checkbox"/> | 8. Provide treatment crews with a Delta map that specifies the date when treatment can begin at specific sites throughout the Delta. (OMP) |
| <input type="checkbox"/> | 9. Prepare Pesticide Use Recommendations (PUR) for all application areas. The PUR must be prepared by a licensed Pest Control Advisor (PCA), and submitted to the County Agricultural Commissioner (CAC) offices. (OMP) |
| <input type="checkbox"/> | 10. Obtain a Restricted Use Permit (RUP) from CAC offices, if necessary. Communicate RUP provisions to application crews. (OMP) |
| <input type="checkbox"/> | 11. Prepare a prioritized list of treatment sites based on current field observations, prior infestation history, and staff knowledge. (OMP) |
| <input type="checkbox"/> | 12. Develop a plan and tentative schedule for water sampling required to fulfill USFWS, NOAA-Fisheries, and NPDES permit requirements. (OMP) |
| <input type="checkbox"/> | 13. Implement an adaptive management approach to minimize the use of herbicides. (Mitigation #7) |

- | <i>In-Season</i> | |
|--------------------------|---|
| <input type="checkbox"/> | 1. Prepare and submit Notices of Intent (NOI) for each week, and submit to the appropriate County Agricultural Commissioner (CAC) and field offices (to be completed by the Aquatic Pest Control Field Supervisor); notify County Agricultural Commissioners about WHCP activities. (Mitigation #22, OMP) |
| <input type="checkbox"/> | 2. Update the prioritized list of treatment sites based on new information, as appropriate. |
| <input type="checkbox"/> | 3. Implement temporal and spatial limitations and restrictions on herbicide treatments to minimize treatments during times, and at locations, where larval and/or migratory fish are likely to be present. (Mitigation #5) |
| <input type="checkbox"/> | 4. Follow the Memorandum of Understanding (MOU) protocol for herbicide applications within one (1) mile of Contra Costa Water District (CCWD) drinking water intake facilities. (Mitigation #21) |
| <input type="checkbox"/> | 5. Monitor herbicide and adjuvant levels to ensure that the WHCP does not result in potentially toxic concentrations of chemicals in Delta waters. (Mitigation #6) |

CHECKLIST #1 – SUPERVISOR/ENVIRONMENTAL SCIENTIST ACTIVITIES

Exhibit E-1

Checklist #1 – Supervisor/Environmental Scientist Activities (continued)

In-Season (continued)

- 6. Coordinate with treatment crews and conduct water sampling, as required, throughout the season. (OMP)
- 7. Notify application crews one week in advance of a planned treatment when conducting water sampling at that planned treatment. (OMP)
- 8. Conduct a survey of elderberry shrubs at the beginning and end of the treatment season to compare the health of elderberry shrubs at control and treatment sites. (OMP)
- 9. Cancel applications when wind and/or weather could be a factor in worker safety, and/or compromise the effectiveness of an application. (OMP)
- 10. Consult with field crews regarding presence of an Endangered Species in planned treatment areas. (OMP)
- 11. Enter and review Daily Log information from the field crews on at least a weekly basis. (OMP)
- 12. Prepare a Pesticide Use Report for the appropriate CACs each month. (OMP)
- 13. Conduct handpicking and herding only during winter (Mitigation #14)
- 14. Implement safety precautions on hot days to prevent heat illness. (Mitigation #20)
- 15. Implement an adaptive management approach to minimize the use of herbicides. (Mitigation #7)

Post-Season

- 1. Prepare Water Hyacinth Control Program Annual Report, including information required for USFWS, NOAA-Fisheries, and NPDES permits. (OMP)
- 2. Update WHCP Operations Management Plan. (OMP)
- 3. Implement an adaptive management approach to minimize the use of herbicides. (Mitigation #7)

CHECKLIST #1 – SUPERVISOR/ENVIRONMENTAL SCIENTIST ACTIVITIES

Checklist #2 – Field Crew Activities

Planning/Pre-Season

- 1. At least one member of all two-person crews (the Aquatic Pest Control specialist) must obtain a Qualified Applicators Certificate (QAC) from the California Department of Pesticide Regulation (DPR). Aquatic Pest Control technicians are encouraged to work toward obtaining a QAC. (OMP)
- 2. Read, understand, and be able to follow herbicide label requirements. (OMP)
- 3. Participate in environmental awareness training, and in particular become familiar with avoidance measures for delta smelt, Chinook salmon, giant garter snake, and valley elderberry. (OMP)
- 4. Participate in herbicide handling training. (OMP)
- 5. Participate in field equipment training. (OMP)
- 6. Participate in training on herbicides and heat hazards. (Mitigation #18)
- 7. Conduct field surveys to provide information on current field conditions (i.e. level and location of water hyacinth infestations). (OMP)

In-Season

GENERAL ACTIVITIES

- 1. Make all herbicide applications according to herbicide label specifications and California Code of Regulation requirements. (OMP)
- 2. Follow environmental protocols required by the USFWS Biological Opinion, NOAA-Fisheries Biological Opinion, and CVRWQCB NPDES General Permit. (OMP)
- 3. Follow all requirements for herbicide storage, transport, mixing, loading applications, and container disposal, as specified in Best Management Practice (BMP) #WH 1, Herbicide Handling Requirements. (OMP)
- 4. Conduct spray equipment maintenance and calibration on at least a weekly basis, as specified in BMP #WH2, Spray Equipment Maintenance and Calibration. (OMP)
- 5. Follow BMP WH#3, Spill Contingency Plan, in the event of an aquatic or terrestrial spill; follow best management practices to minimize the risk of spill and to minimize the impact of a spill, should one occur. (Mitigation #19, OMP)
- 6. Conduct field surveys to provide information on current field conditions (i.e. level and location of water hyacinth infestations and locations of drinking water intakes). (OMP)
- 7. Consult with the Environmental Scientist about upcoming applications to determine whether presence of an Endangered Species in a planned treatment area will prevent a scheduled application. (OMP)
- 8. Provide a 250 foot buffer between a treatment site and shoreline elderberry bushes. (Mitigation #2, OMP)
- 9. Utilize the Giant Garter Snake Habitat Evaluation Maps and visually check for giant garter snakes when launching a boat from an unimproved location on a levy. (OMP)
- 10. Minimize public exposure to herbicide treated water. (Mitigation #17)
- 11. Implement safety precautions on hot days to prevent heat illness. (Mitigation #20)

CHECKLIST #2 – FIELD CREW ACTIVITIES

Exhibit E-2

Checklist #2 – Field Crew Activities (continued)

In-Season (continued)
TREATMENT DAY ACTIVITIES
<ul style="list-style-type: none"> <input type="checkbox"/> 12. Understand and follow the PUR and label requirements before making any herbicide applications. (OMP) <input type="checkbox"/> 13. Check that all required equipment is in the boat prior to leaving the dock or storage bay. (OMP) <input type="checkbox"/> 14. Record the appropriate pre-treatment information on the Daily Log, after boating to the treatment site. (OMP) <input type="checkbox"/> 15. Perform a visual survey for species of concern and complete the Environmental Observations Checklist. If any sensitive species are present at the site, the application crew should not perform the treatment. (OMP) <input type="checkbox"/> 16. Avoid herbicide application near special status species, and sensitive riparian and wetland habitat; and other biologically important resources. (Mitigation #1) <input type="checkbox"/> 17. Utilize the dissolved oxygen monitor/meter, wind meter, and GPS to take the appropriate measures (water temperature, DO level, time, location, equipment calibration date, wind speed) and record in the Daily Log. (OMP) <input type="checkbox"/> 18. If the wind speed is greater than 10mph, or 7mph in Contra Costa County, do not perform the treatment at that particular site. (OMP) <input type="checkbox"/> 19. Complete electronic data collection in the handheld computer and determine whether the application meets the applicable NPDES permit conditions for treatment. (OMP) <input type="checkbox"/> 20. Monitor dissolved oxygen levels pre- and post-treatment for all WHCP treatments. (Mitigation #9) <input type="checkbox"/> 21. Do not conduct the treatment if the dissolved oxygen level is between 3.0 mg/l and the basin plan limit for that location, based on the dissolved oxygen maps. (OMP) <input type="checkbox"/> 22. Do not treat more than 2.75 acres¹ of a given site in one day. If 3 acres of a site are treated, skip treatment on adjacent sites, leaving an adequate portion of waterway open (i.e. without treatment) to allow for fish to pass the site. (Mitigation #10, OMP) <input type="checkbox"/> 23. Treat no more than one-half of the area of completely infested dead-end sloughs to allow for fish passage. (Mitigation #11) <input type="checkbox"/> 24. Treat no more than one-half of completely infested moving waterways at one time to allow for fish passage. (Mitigation #12) <input type="checkbox"/> 25. Conduct herbicide treatments in order to minimize potential for drift. (Mitigation #3) <input type="checkbox"/> 26. Operate program vessels in a manner that causes the least amount of disturbance to the habitat. (Mitigation #4) <input type="checkbox"/> 27. Use dip nets during and immediately following treatment to collect plant fragments. (Mitigation #13) <input type="checkbox"/> 28. Identify and utilize disposal areas [for handpicking] that have no and/or low habitat value for the federal and State listed giant garter snake (<i>Thamnophis gigas</i>). (Mitigation #15) <input type="checkbox"/> 29. Identify and utilize disposal areas [for handpicking] that are at least 100 feet away from elderberry shrubs (<i>Sambucus</i> spp.) (Mitigation #16) <input type="checkbox"/> 30. Record the appropriate post-treatment information in the Daily Log, and submit to DBW Headquarters staff. (OMP)

Post-Season
<ul style="list-style-type: none"> <input type="checkbox"/> 1. Conduct field surveys to provide information on current field conditions (i.e. level and location of water hyacinth infestations and locations of drinking water intakes). (OMP)

¹ The requirement is no more than 3 acres, the OMP specifies 2.75 acres in order to be conservative in meeting the 3 acre requirement.

CHECKLIST #2 – FIELD CREW ACTIVITIES





Water Hyacinth Control Program

