

Mussel Prevention Implementation Plan for Mill Creek Ponds

Implementation Project Narrative

Section A – Reservoir Project Area Description and Management Activities.

A.1. Reservoir and Project Area Description.

Two reservoirs exist within Mill Creek County Park in Mendocino County, the Upper Pond, and the Lower Pond. Both dams were built in the early 1900s to store water for the Mental Hospital located in Talmage. Over the ensuing 100+ years, the ponds have filled with sediment, reducing the size of the Lower Pond to ~1.2 acres and the Upper Pond to ~7 acres of surface area. The primary uses of both ponds involves non-motorized recreational activities, and the upper pond has been used as a water source for firefighting activities.

A.2. Description of the Recreational Activities and Risk for Quagga and/or Zebra Mussel Introduction.

Both ponds are popular recreational destinations. Although the County does not have an accurate count of visitors, the ponds, the picnic area, the parking areas and all road pull outs are frequently full on weekends and holidays. The upper reservoir receives over 90% of recreational usage due to its ease of access along the shoreline. The water in the lower reservoir is more difficult to reach due to dense cattails, and the dam provides the only suitable fishing and launch structure for flotation devices.

Recreational angling at the Upper Pond is the primary mode of recreation, although some angling does occur at the Lower Pond. The California Department of Fish and Wildlife (CDFW) plants hatchery-reared juvenile steelhead trout in the Upper Pond at least once per year to promote recreational angling opportunities. Shore-based angling is the most common method used by families, who can walk along the north and south banks. Boat-based angling usually involves people in small boats (12' long), canoes, kayaks, and float tubes, but represents less than 10% of the angling public. Motorized watercraft are prohibited from use in both reservoirs.

During the summer and early fall months, swimming is a popular recreational activity at the Upper and Lower Ponds. The Lower Pond only has access to the water at the dam because the rest of its shoreline is densely vegetated with cattails. The dam at the Lower Pond usually gets no more than 10 recreationists at a time because of the small area. The Upper Pond has several areas to access the water, and is the primary draw for recreational swimmers. A rope swing on the south bank exists for the agile people able to navigate that trail. The shallow inlet area of the Upper Pond is frequented by families with young children. The fishing platform on the north end near the Upper Pond's dam is the most used area for swimmers, anglers, and picnicking families.

Although no Quagga or Zebra Mussels (QZ Mussels) have been detected in either reservoir, the high calcium concentration, measured in 2018 and 2019, represents an opportunity for them to become established if a contaminated watercraft gets launched. Since motorized watercraft are prohibited from use in either reservoir, the potential for infestation would be limited to personal

watercraft (kayaks, canoes, float tubes, etc.), which are considered a significantly lower risk vector than larger vessels.

A.3. Description of Management Activities including Prevention Program/Plan.

The County of Mendocino is responsible for scheduling dam inspections with the Department of Water Resources and reporting water use, if any, to the State Water Resources Control Board. Facilities at the County Park are maintained by the Mendocino County Facilities Division, which includes solid waste management of trash cans and scheduling cleanout of the portable toilets. The Mendocino County Cultural Services Agency is responsible for scheduling reservations at the picnic area east of the Upper Pond, which is located next to the main trail leading to the south side of the Upper Pond.

The Quagga and Zebra Mussel Prevention Plan for Mill Creek Ponds in Mendocino County (Plan) was approved by CDFW in December 2019. The County of Mendocino is submitting this grant application to implement the Plan.

Section B – Project Description.

Purpose

The purpose of this project is to implement the approved Quagga and Zebra Mussel Prevention Plan for Mill Creek Ponds in Mendocino County (2019). The implementation project involves three core elements: early detection monitoring of possible Quagga and Zebra Mussels, a user knowledge survey to document knowledge about invasive mussels and how they spread, and public education and outreach for best practices in the prevention of mussel infestation to community members who use the ponds for recreation.

Scope of Work

The information below outlines the basic tasks for the proposal. Information about deadlines is found in the Table of Deliverables.

Item A: General Compliance Requirements

Item A includes general project management and administration of compliance needs. Subtasks include Final County Resolution, Evidence of Insurance, Final CEQA/NEPA Documentation, as applicable, Public Agency Approvals, Entitlements or Permits, as applicable and Photo Proof of DBW Funding Sign Installed. It will also include the signed contractual agreement to complete this project, develop invoices with supporting documentation, and manage all details related to successful completion of the project.

Item B: Project Specific Requirements

As per the suggestion of the Division of Boating and Waterways grant manager, these items have been incorporated into Item C: Project Deliverables for this project.

Item C: Project Deliverables, identified as Tasks

Task 1.0 Early Detection Monitoring

The purpose of this task is to continue early detection monitoring for invasive mussels according to the schedule and protocols outlined in the approved Prevention Plan (attached). Monitoring protocols listed in the Plan will be followed each year according to the schedule (Table 1). The County of Mendocino will contract with a firm to perform surface and artificial substrate sampling. Staff from CDFW will perform plankton tows and collect water to test for calcium concentration. The County will consolidate all the data into a single report each year.

Table 1. Sampling Schedule for the Monitoring Program of Mill Creek Ponds.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Surface Survey					X	X	X	X	X	X		
Artificial Substrate					X	X	X	X	X	X		
Plankton Tow				X		X		X		X		
Calcium Concentration				X				X				X

Task 1 Subtasks:

- 1.1 Surface surveys, 6x a year, Upper Dam only
- 1.2 Artificial substrate monitoring, 6x a year, at Upper and Lower Dams
- 1.3 Plankton tow surveys and calcium concentrations, data management of CDFW surveys
- 1.4 Survey results reporting

Deliverables: Report of monitoring results

Task 2.0 Management of Vectors

The purpose of this task is to adopt the CDFW Aquatic Invasive Species (AIS) Decontamination Protocols county-wide, to communicate those protocols to cooperating agencies and to include the protocols into contracts, when appropriate.

Task 2 Subtasks:

- 2.1 Adoption of CDFW AIS Decontamination Protocol by County for all dam and pond related activities; Staff drafting of protocol; Board of Supervisors' approval
- 2.2 Communication among agencies regarding protocols: provide educational materials, inclusion in contracts

Deliverables: BOS approval of CDFW AIS Decontamination Protocol; correspondence with cooperating entities.

Task 3.0 Survey

The purpose of this task is to implement the required Knowledge Survey by polling users of the ponds during high day-use to ascertain their knowledge of invasive mussels, their life cycle and the problems they create for water systems.

The location of the ponds in a narrow canyon limits internet and cell phone access, and the County of Mendocino determined that the most effective way to educate the community and measure increased QZ Mussel knowledge will be through in-person surveys. The County will subcontract with a firm to complete one in-person survey per year. The survey will be conducted once a year during one of CDFW's Free Fishing Days, which are on the Saturdays nearest July 4 and Labor Day. The Upper Pond sees over 50 anglers on each of those days and represents the best opportunity to convey QZ Mussel Prevention information, and to measure the extent of knowledge that anglers and others have regarding this topic.

Due to the remote location of the Mill Creek Ponds, the survey will be conducted in person, with data gathered either on paper or using an iPad. The survey will be presented verbally to an angler (shore-based or on the water) or another recreationist, and responses will be recorded on the data sheet. Content for the questionnaires will be developed using DBW templates as well as Sonoma Water examples. Existing QZ Mussel surveys will be reviewed to identify questions and metrics that can be included in our survey questionnaire.

In addition, due to the large number of Spanish speakers who use the ponds, the survey will be translated into Spanish and at least one surveyor will be a fluent Spanish speaker. The County will work closely with both the DBW Outreach Coordinator and Sonoma Water (Lake Mendocino) to ensure consistency of messaging and protocol across Mendocino County.

Task 3 Subtasks:

- 3.1 Develop a survey in conjunction with DBW and Sonoma Water
- 3.2 Conducting surveys on CDFW Free Fishing Day in 2021 and 2022. At least one member of the survey crew will be fluent in Spanish.
- 3.3 Analyze surveys and create a report of results

Deliverables: Survey results and report

Task 4.0 Public Outreach and Education

The purpose of this task is to communicate the "Don't Move A Mussel" message to the public, using a variety of means outlined in the approved Prevention Plan, including on-site signs, outreach events, news articles and public service announcements (PSAs), social media posts and handouts.

Task 4 Subtasks:

- 4.1 Create content for 11 mussel prevention signs in coordination with Sonoma Water (Lake Mendocino)
- 4.2 Secure bids from at least 3 sign companies to create graffiti-resistant signs
- 4.3 Install signs at high visibility locations at Upper and Lower Mill Creek Ponds
- 4.4 Conduct at least 3 public outreach efforts at local events, including tabling at local events
- 4.5 Create and disseminate newspaper articles, press releases, and PSAs
- 4.6 Create a Don't Move a Mussel page on County website
- 4.7 Create and post social media posts on the County Facebook and Instagram pages
- 4.8 Create and distribute a mussel prevention postcard at nearby bait vendors and sporting stores

Deliverables:

Designs and photos for 11 mussel prevention signs
Photos from at least 3 public outreach events
News articles and Facebook posts
Screenshot of Don't Move a Mussel page on County website
PDF of postcard for public distribution

The signs will be developed in coordination with Sonoma Water, which has installed mussel prevention signs at Lake Mendocino, to ensure a consistent message gets presented regionally. Due to the remote nature of the Upper and Lower Ponds, securing signs that are graffiti resistant will be required. Mendocino County's Facilities Division will install the signs at locations shown in Figures 1 and 2.

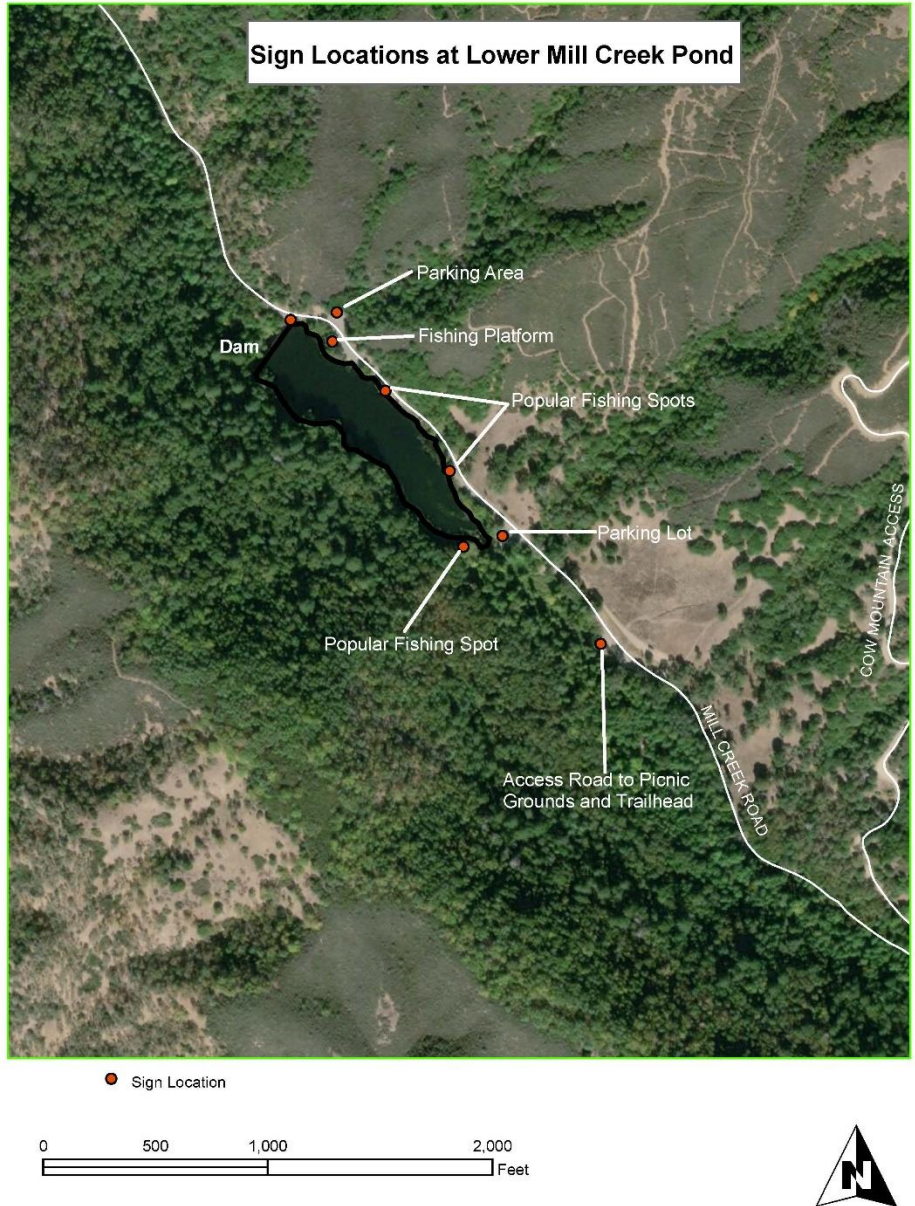


Figure 1. Proposed sign placement at strategic locations along the Upper Pond.



Figure 2. Proposed sign placement at strategic locations along the Lower Pond.

Item D: Invoicing

This task covers basic invoicing administration, including Reimbursement Claim/Invoicing and Final Reimbursement Claim/Final Invoice.

Item E: Reporting

This task covers all the reporting requirements, including development and submission of the Quarterly Progress Reports, Annual Reports, Draft Final Project Report, Final Project Report, Final Project Summary, and Final Project Inspection and Certification(s): Project Completion Certification; and Contractor's Release Form, if applicable.

Section C – Regional Impacts from a Potential Quagga and/or Zebra Mussel Infestation.

The Mill Creek Ponds discharge water into Mill Creek on a year-round basis. Mill Creek flows into the Russian River between the communities of Ukiah and Talmage. Approximately 90 river miles exist downstream of the confluence of Mill Creek and the Russian River to the Pacific Ocean, which includes the communities of Cloverdale, Geyserville, Healdsburg, Windsor, Santa Rosa, Petaluma, and Guerneville – the majority of the human population and agricultural production in the Russian River watershed.

Mill Creek typically flows subsurface in its lowest two miles beginning in May of each year, with residual pools drying out by August. The aquatic habitat connection between Mill Creek and the Russian River is therefore only active, on an average rainfall year, between November and April. Survival of QZ Mussels in the dry section of Mill Creek during the summer months would be minimal, but is possible. If the Mill Creek Ponds become infested with QZ Mussels, the opportunity for them to spread into the Russian River through streamflow would be during that 6-month period when aquatic habitat connection is continuous.

It is estimated that at least several hundred people use Mill Creek County Park each year for fishing and swimming enjoyment. Many of these same people are likely to also visit Lake Mendocino, the Russian River, and Blue Lakes nearby to go swimming or fishing. If Mill Creek Pond were to become infested, the spread throughout Mendocino County and into Lake and Sonoma Counties would have disastrous effects on the ecology and economy in those communities.

Section D – Technical and Feasibility Approach.

Technical Approach

There are three core elements to this proposal: early detection monitoring, knowledge survey, and public education and outreach. The technical aspects of implementing this project include 1) sampling for biological presence using established protocols, 2) monitoring calcium concentration in the water column, 3) staffing tables at public events to promote awareness about

QZ Mussels, 4) performing in-person surveys to gauge knowledge of the public, and 5) installing signs at strategic locations at both reservoirs. These tasks do not require a high level of complex skills, but will require clear project management for effective implementation to ensure proper protocols are followed, surveys are developed and analyzed in a systematic manner, and that the signs reflect a message consistent with the regional QZ Mussel prevention effort.

Feasibility

The tasks of early detection monitoring and public education are straightforward and use well established protocols. No machinery will be installed, or novel activities implemented. The County of Mendocino has the capacity to complete all the Tasks, either in house or by hiring local partners as subcontractors. The feasibility of implementing this project is the highest possible.

Section E – Performance Monitoring (Tracking of the Project).

Success for the various project tasks will be defined by Task as:

Task 1.0 Early Detection Monitoring: Completion of biological monitoring and water quality sampling according to schedule.

Task 2.0 Management of Vectors: Adoption of CDFW AIS Decontamination Protocol by County for all dam and pond related activities; Evidence of communication among agencies regarding protocols.

Task 3.0 Survey: Development and administration of the in-person survey in 2021 and 2022.

Task 4.0 Public Outreach and Education:

- 11 QZ Mussel prevention signs installed
- At least 3 public outreach events
- Newspaper articles in local paper
- Don't Move a Mussel page on County website
- Social media posts on the County Facebook and Instagram pages
- Mussel prevention postcard at nearby bait vendors and sporting stores

Metrics that support the determination of success:

Task 1.0 Early Detection Monitoring: Six data sets per year for surface and artificial substrate sampling; data sets collected quarterly from CDFW for plankton surveys and calcium concentrations.

Task 2.0 Management of Vectors: Copy of CDFW AIS Decontamination Protocol adopted by County for all dam and pond related activities; Number and record of emails among agencies regarding adopting the protocols.

Task 3.0 Survey: Copies of completed surveys, photos of survey administration, report(s) on results.

Task 4.0 Public Outreach and Education:

- Number of mussel prevention signs installed (11).
- Number of public outreach events (at least 3)
- Number of newspaper articles in local paper (at least one yearly)
- Don't Move a Mussel page on County website (screenshot)
- Number of social media posts on the County Facebook and Instagram pages (at least one yearly)
- Number of locations for mussel prevention postcard at nearby bait vendors and sporting stores (at least one venue)

Progress will be measured according to:

Year 1 Accomplishments:

1. Complete early detection monitoring actions
2. Draft and adoption of County policy for Management of Vectors by implementing CDFW AIS Decontamination Protocol for all pond and dam related management activities.
3. Create questionnaire and perform Knowledge Survey during Free Fishing Day in July.
4. Public Outreach & Education
 - Approval of sign content, execute contract with sign company, installation of 11 signs
 - Tabling at public events
 - Submittal of articles to local newspaper
 - County development of “Don’t Move a Mussel” web page
 - Posting on social media platforms
 - Printing and distribution of education postcard at sporting goods stores and bait vendors.

Year 2 Accomplishments:

1. Complete early detection monitoring actions
2. Communicate to partners and agencies about County policy to implement CDFW AIS Decontamination Protocol for all pond and dam related management activities.
3. Perform Knowledge Survey during Free Fishing Day in July 2022, and compile survey data to document knowledge gained about QZ Mussel hazards.
4. Public Outreach & Education
 - Confirmation that all 11 signs remain intact and maintain a clear message
 - Perform the Knowledge Survey during the Free Fishing Day in July 2022.
 - Tabling at public events
 - Submittal of articles to local newspaper
 - County update and maintenance of “Don’t Move a Mussel” web page
 - County posting on social media platforms
 - Continued distribution of education postcard at sporting goods stores and bait vendors.

Long-Term Implementation of Mussel Prevention Plan for Mill Creek Ponds in Mendocino County:

- Include early detection monitoring action into annual County budget
- Complete and submit annual report of data and QZ Mussel Prevention Plan activities to CDFW.

Section F – Early-Detection Quagga and Zebra Mussel Monitoring.

Early detection monitoring forms one of the core elements of this proposal. The measurements of calcium concentration in 2018 and 2019 indicate that there is a risk of infestation if QZ Mussels get introduced to these reservoirs. To date, the early detection QZ Mussel monitoring has been performed by CDFW staff in the form of Surface Surveys and Substrate Surveys in 2019 where no invasive mussels were detected. Two Plankton Tows were done by CDFW in 2019, but have not yet been analyzed.

Due to the unknown duration of COVID-19 shelter-in-place restrictions, beginning the monitoring field work may not coincide with the schedule listed in the Prevention Plan. All monitoring activities will follow CDFW's protocols, as detailed in CDFW's Quagga/Zebra Mussel Surface Survey Protocol and Quagga/Zebra Mussel Artificial Substrate Monitoring Protocol (see Appendices A and B in the Quagga and Zebra Mussel Prevention Plan for Mill Creek Ponds).

Implementing the early detection aspect of Mendocino County's Mussel Prevention Plan in 2020 will begin with procurement of prefabricated artificial substrates, which will be deployed at the dams of the Upper and Lower Ponds. During deployment and monitoring of the artificial substrates, the surface survey at the Upper Pond will be completed. CDFW staff will take water samples to document calcium concentration, and will perform plankton tows at both reservoirs according to schedule (Table 1). CDFW will report results to the County of Mendocino, which will compile the results into a report. All data will be recorded and reported to CDFW and DBW according to schedule.

Section G – Education and Outreach.

The Education and Outreach element of this project forms another core element of this project and has six distinct parts:

1. Create content for and install 11 mussel prevention signs
2. Conduct at least 3 public outreach efforts at local events, including tabling at local events
Staffing a table at public events will be an opportunity to promote awareness about the threat of QZ Mussel infestation
3. Create and disseminate newspaper articles, press releases, and PSAs
4. Create a Don't Move a Mussel page on County website
5. Create and post social media posts on the County Facebook and Instagram pages
6. Create and distribute a mussel prevention postcard at nearby bait vendors and sporting stores

Section H – Key Officers and Oversight Bodies.

1. Carmel Angelo, Chief Executive Officer, County of Mendocino
2. Sarah Dukett, Deputy Chief Executive Officer, County of Mendocino
3. Karen Horner, Director, Cultural Services Agency - Parks Division, County of Mendocino

Section I – Project Member/Entities, Administration and Partners.

1. Mendocino County Resource Conservation District: subcontractor for project implementation
2. California Department of Fish and Wildlife: plankton tow and calcium concentrations data collection
3. Sonoma Water: coordination of outreach and signage message and efforts
4. California Department of Boating and Waterways: templates for signage and survey

Section J – Readiness to Proceed.

The County of Mendocino is prepared to implement this project in September 2020, or as soon as the contract with DBW gets executed. The Mendocino County Resource Conservation District (MCRCD) is qualified to implement surface and artificial substrate surveys, and will be secured to begin the process immediately. County staff will develop the web page, social media posts in coordination with the County of Mendocino and MCRCD. The MCRCD will address all other project tasks and report to the County monthly to ensure clear communication and to secure appropriate approvals.

Schedule

TASKS	SCHEDULE
Task 1.0 Early Detection Monitoring	Sept. 15, 2020 to Sept. 14, 2022
1.1 Surface surveys, 6x a year, Upper Dam only	October 2020, April-October 2021, April to September 2022
1.2 Artificial substrate monitoring, 6x a year, at Upper and Lower Dams	October 2020, April-October 2021, April to September 2022
1.3 Plankton tow surveys and calcium concentrations, data management of CDFW surveys	October 2020, April-October 2021, April to September 2022
1.4 Survey results reporting	Annual Report due March 31, 2021 and 2022
Task 2.0 Management of Vectors	Sept. 15, 2020 to Sept. 14, 2022

2.1 Adoption of CDFW AIS Decontamination Protocol by County for all dam and pond related activities; Staff drafting of protocol; Board of Supervisors' approval	By Draft Final Report
2.2 Communication among agencies regarding protocols: provide educational materials, inclusion in contracts	By Draft Final Report
Task 3.0 Knowledge Survey	Sept. 15, 2020 to July 31, 2022
3.1 Develop survey in conjunction with DBW	Completed for use by June 2021
3.2 Conducting surveys on CDFW Free Fishing Day or similar in 2021 and 2022. At least one member of the survey crew will be fluent in Spanish.	July, 2021 and 2022
3.3 Analyze surveys and create a report of results	By Annual and Draft Final Reports
Task 4.0 Public Outreach and Education	Sept. 15, 2020 to Sept. 14, 2022
4.1 Create content for 11 mussel prevention signs	Sept. 15, 2020 to April 30, 2021
4.2 Secure bids from at least 3 sign companies to create graffiti-resistant signs	By May 31, 2021
4.3 Install signs at high visibility locations at Upper and Lower Mill Creek Ponds	Summer 2021
4.4 Conduct at least 3 public outreach efforts at local events, including tabling at local events	Ongoing through grant term
4.5 Create and disseminate newspaper articles, press releases, and PSAs	At least once a year, 2021 and 2022
4.6 Create a Don't Move a Mussel page on County website	Ongoing through grant term
4.7 Create and post social media posts on the County Facebook and Instagram pages	Ongoing through grant term
4.8 Create and distribute a mussel prevention postcard at nearby bait vendors and sporting stores	By July 31, 2021