

**LAGUNITAS CREEK TECHNICAL ADVISORY COMMITTEE (TAC)
Meeting Notes from the June 12, 2020**

By Eric Ettliger

Chair and Vice-Chair Present: Rob Carson and Sarah Phillips

Committee Members Present: Greg Andrew, Gordon Bennett, John Campo, Terrance Carroll, Jodi Charrier, Kristin Drumm, Eric Ettliger, Leslie Ferguson, Bree Hardcastle, David Hines, Mike Napolitano, Richard Plant, Eric Rubenstahl, Barbara Salzman, Phil Sotter, Todd Steiner, Ann Thomas, Ryan Watanabe, Erik Young

Other Attendees: Mandy Culpepper and Chester Lindley (CDFW), Larry Bragman and Elysha Irish (MMWD), John Campo (Marin County Parks), Victor Aelion and Nicole Fairley (Regional Board), Lauren Hammack (Prunuske Chatham), Ayano Hayes (SPAWN), Anna Dirkse (Marin Knotweed Action Team), Lizzie DeLuca and Sterling Meus (Watershed Stewards Program)

Introduction of TAC members

Adopt agenda.

Agenda adopted.

1. Approve notes from the November, 2019 TAC meeting.

Notes were approved.

2. Lagunitas Creek Stewardship Plan 2021 (Greg Andrew, MMWD)

Reviewed factors that led to the 1995 State Board Order WR95-17 and the development of the Lagunitas Creek Sediment and Riparian Management Plan (1997) and the Lagunitas Creek Stewardship Plan (2011). Provided an overview of the rationale behind MMWD's involvement in Lagunitas Creek. The Stewardship Plan outlined mandatory requirements and voluntary actions MMWD would take on Lagunitas Creek. All required actions were achieved, with the exception of maintaining water temperatures below the required threshold. MMWD has committed to investigating water temperatures and potential impacts to salmonids in 2020. Projects, monitoring, and collaborative efforts conducted under the Plan, as well as spending, were presented. The 2021 updated to the plan was outlined, focusing on MMWD's ongoing commitments and timeline for plan development.

Comments by TAC:

Leslie Ferguson: Regional and State Board maintain that the actions in the Stewardship Plan are not voluntary, but mandated under WR95-17. Impacts of water temperature violations must be evaluated. Requests a subcommittee early on in the plan development process.

Jodi Charrier: Why weren't some bank stabilization projects implemented? Greg Andrew: A grant proposal was rejected and TAC didn't support a San Geronimo Creek project.

Gordon Bennett: Do winter habitat projects influence water temperature? Can we reduce

temperatures through canopy cover? Greg Andrew: Floodplain projects will not influence water temperature. Some additional shading could be beneficial.

Todd Steiner: SPAWN would like to collaborate on a project upstream of MMWD's Lagunitas Booster Station.

Rob Carson: Is MMWD amenable to a Stewardship Plan Subcommittee? Greg Andrew: I shouldn't commit to that before discussing internally.

3. Roy's Redwoods (John Campo and Lauren Hammack)

John presented the four-year history of the restoration project, hydrologic and resource goals, and current degradation. Project will incorporate boardwalks, "modular walkways," and ADA access. Lauren presented two conceptual designs and summarized the goal as increasing infiltration and groundwater storage. Logs would slow and spread water and encourage sediment deposition to facilitate plant growth. Headcuts near the park entrance would be stabilized with log weirs.

Comments by TAC:

Gordon Bennett: Will trails be elevated like in Muir Woods? John Campo: That's one of the concepts under consideration.

Barbara Salzman: You probably meant that access shouldn't influence the floodplain, not vice versa.

Greg Andrew: Maybe look at current plans for Muir Woods. What makes this site appropriate for "Stage Zero" restoration? Lauren Hammack: This area is an alluvial fan, which often exhibit stage zero characteristics.

Leslie Ferguson: Have you considered the impacts of reducing sediment on Larsen Creek downstream? Lauren Hammack: Coarse sediment is already dropping out and would have done so historically. Another tributary will continue to transport coarse sediment.

Todd Steiner: Happy to hear you will coordinate with efforts on the former golf course.

4. Updates:

a) 2020 Smolt Surveys – Draft Results (SPAWN, MMWD)

SPAWN operated a pipe trap from 4/17 to 6/4/20. First week of trapping was the peak of the coho outmigration.

Comments by TAC:

Leslie Ferguson: Can you use your previous years' data to estimate early coho outmigration that may have been missed? Eric Ettlinger: I can look into that based on PIT antenna detections and lunar cycle.

b) Project Updates:

MMWD: Greg Andrew summarized effectiveness monitoring of the Lagunitas Creek Winter Habitat Project sites through the winter of 2019-2020. Invasive plant management is beginning. Also described the awarding of a planning grant for habitat enhancement work in upper Lagunitas Creek and San Geronimo Creek. MMWD will update the Sediment and Streambed Monitoring Plan this summer, in collaboration with the Regional Board.

SPAWN: Phase 1 of the Lagunitas Creek Floodplain Project is complete. Hanford ARC has been awarded a contract to construct the Roy's Pools Project, slated to begin in July. Moving forward with five landowners on large wood projects upstream of Meadow Way Bridge. A riparian project on Larsen Creek will begin in August. The Lagunitas Floodplain Activation Flow Study: modeling is complete and will be verified in 2020-21.

Marin RCD: Both restoration sites constructed in 2019 are doing well and being monitored.

MKAT: Treated 69 knotweed sites in San Geronimo Creek and 175 sites in Lagunitas Creek (100% of identified sites). Recent survey found two new sites in lower San Geronimo Creek and seven sites need to be retreated. Will survey the rest of the stream by early July. Received funding to continue monitoring and treatment through Sept. 2021.

Comments by TAC:

Greg Andrew: What are the plans for treatments this year? Anna Dirkse: Will treat all known sites on San Geronimo Creek again this year. Unsure if COVID will impact NPS treatments. Bree Hardcastle: Planning to treat all known sites this year on State Park land.

Ayano Hayes: Do you depend on landowners to tell you about new knotweed patches? Anna: We've sent out mailers and knocked on doors. Now have access to most properties. She has surveyed some tributaries. Anna asked to report any knotweed sightings to acdirkse@ucanr.edu.

5. Reports by TAC members

CDFW: Currently reviewing FRGP proposals.

Barbara Salzman: Any concerns among agencies about fuels reduction work? Todd Steiner: SPAWN has received many complaints about PG&E tree trimming and removal. Mandy Culpepper: CDFW has a Senior Environmental Scientist, Robynn Swan, who consults with landowners on vegetation treatment outside of stream areas. Mandy should be notified about vegetation work along streams. Jodi Charrier: She will contact her colleagues at NOAA Law Enforcement about impacts to salmonid habitat. Gordon Bennett: We need to be aware of trees farther from streams that provide shade. Phil Sotter: Creating defensible space on hillsides is likely to result in significant erosion. Bree Hardcastle: State Parks has

been contacted by Joint Powers Authority and any tree work must go through CEQA, following BMPs and the Woody Debris MOU. Sarah Phillips: This is worth a deeper discussion at our next meeting.

Ann Thomas: Can we get a copy of Greg Andrew's presentation? Greg Andrew: I will post it to the MMWD website.

Kristin Drumm: The County is working to amend the Countywide Plan within 4-5 years. First phase will initiate a Stream Conservation Area ordinance in the San Geronimo Valley in first year. Phase 2 will be for all unincorporated areas of Marin in second year. Outreach for SCA will begin in September, including professional facilitators. Barbara Salzman: Will outreach include groups outside the San Geronimo Valley? Kristin: Yes, including Marin Audubon. Ann Thomas: Are you the point person for questions on the SCA and available to present to groups? Is your timeline realistic? Kristin: Yes to both, please contact me with questions.

Larry Bragman: Will bring TAC's discussion of fuel reduction to the next MMWD Watershed Committee meeting.

Eric Ettlinger: Steelhead run in 2019-20 was the fifth-highest on record with 198 redds.

Sarah Phillips: RCD hired a new agroecologist, Michelle Katuna. RCD isn't planning on staff reductions related to COVID. She's waiting to hear if the Urban Streams Program will be renewed in July. Salmonid Restoration Federation Conference is postponed to October and Coho Confab is still on.

Jodi Charrier: NOAA is focusing on coho salmon as a Species in the Spotlight. NOAA is taking on three interns and is looking for work for them in fisheries conservation.

Leslie Ferguson: Let's form a subcommittee now for MMWD's planning process. Can we get more advanced notice of MMWD's Watershed Committee schedule and agendas? Larry Bragman: Meetings are quarterly but we can share the calendar earlier. Shaun Horne: Meetings are third Thursday of the month at 1:30 and scheduled a year in advance. Rob Carson: Folks interested in being on a subcommittee should email him. Sarah Phillips: Also need members for a Woody Debris MOU subcommittee.

Phil Sotter: Broom work continues on Thursdays with volunteers staying 20-30 feet apart. Looking for permission to work on former golf course.

Gordon Bennett: No response from CDFW to net pen letter. TBWC received a letter from CA Dept of Health about bathrooms on east shore of Tomales Bay, which are operated by MMWD, State Parks, and Marin County. There are too few bathrooms and signage is poor. Liza Crosse requested that TBWC support for an EIR on San Geronimo Flats Project. Gordon would like to be part of the SCA process.

Rob Carson: TBWC continues pathogen monitoring for TMDL with Regional Board and

Inverness PUD. NPS has halted monitoring due to COVID restrictions. State of the Bay Conference has been put off for a year, but a virtual program is in the works.

6. Future Agenda Items

- Fuel reduction impacts (new item)
- CDFW fish release/fish rescue policy
- Overview of the Coastal Monitoring Plan (CMP)
- Cumulative Impacts Analysis for San Geronimo Cr.
- Redwood Creek and Muir Woods Road bridges
- Marin Local Coastal Plan
- Mt. View Road Bridge replacement project

Other Items:

- Sarah Phillips: Eric Ettlinger has stepped up to provide snacks and take notes for future TAC meetings. Thanks MMWD!
- MMWD future/updated stewardship plan (MMWD)
- Target recovery numbers per species per life stage
- LWD MOU Review
- Knotweed presentation by NPS/State Parks
- WR95-17 temperature analysis looking for any correlation to salmonid size
- SGV (San Geronimo Valley) Watershed Base Study

7. Public Comment

None.

Adjournment: Meeting was adjourned ahead of well wishes on Greg Andrew's retirement.

Lagunitas Creek Stewardship Plan 2021

Lagunitas Creek Technical Advisory Committee
June 12, 2020

MMWD Involvement in Lagunitas Creek

- Five Water Supply Reservoirs in the Lagunitas Creek Watershed
- 1982 Peters Dam on Kent Lake Raised in Response to mid-1970s Drought
- 1995 State Water Board Order WR95-17 issued to MMWD to Mitigate Impacts to Coho Salmon, Steelhead, and California Freshwater Shrimp
- 1997 Lagunitas Creek Sediment and Riparian Management Plan Developed and Implemented, through 2010.
- 2011 Lagunitas Creek Stewardship Plan Developed to Update MMWD Actions on Lagunitas Creek - developed as a ten year plan.
- 2020 MMWD Beginning Process to Update Stewardship Plan.
- 2021 Target to Develop the Updated Stewardship Plan

Rationale for MMWDs Activities on Lagunitas Creek

- **MMWD Mission Statement and Watershed Management Policy**
*Manage natural resources in a sustainable manner;
protect native fishery resources, in streams within the District's sphere of influence.*
- **State Water Board Order WR95-17**
Requires MMWD to Mitigate Impacts to Coho Salmon, Steelhead, and California Freshwater Shrimp. It also references the following:
 - *Fish and Game Code (5937): The owner of any dam shall allow sufficient water at all times to pass ...over, around or through the dam, to keep in good condition any fish, ...below the dam.*
 - *Public Trust Doctrine: The aquatic resources of Lagunitas Creek belong to the people of the state and the District's activities need to ensure that these resources are maintained for the state.*
- **State and Federal Endangered Species Acts**

2011 Lagunitas Stewardship Plan Categories of Actions

1. On-Going Mandatory Requirements of SWRCB Order WR95-17.
2. Actions MMWD would lead.
3. Actions MMWD would participate in but might not lead.



Accomplishments

Ongoing Mandatory Requirements

Successfully Implemented Compliance Requirements

- Instream Flows
- Upstream Migration Flows
- Water Year Classifications
- Special Circumstances
- Ramping
- Stream Gages
- Reporting

Partially Implemented

- Temperature

Accomplishments

MMWD Led Activities

Restoration Successfully Implemented

Winter Habitat Assessment & Enhancements

Sediment Reduction and Management Actions

- Sediment source assessments
- Sediment source treatments in the watershed

Instream & Riparian Enhancement Projects

- Rearing and winter habitat with large woody debris
- Riparian vegetation enhancement projects

Partially Implemented

- Biotechnical Streambank Stabilization - Lagunitas Booster & SP Taylor
- California Freshwater Shrimp Habitat Assessment

Accomplishments

Winter Habitat Enhancement



Accomplishments

Winter Habitat Enhancement



Accomplishments

Winter Habitat Enhancement





Accomplishments

Winter Habitat Enhancement



Accomplishments

Jewell Creek Sediment & Fish Passage





Accomplishments

Jewell Creek Sediment & Fish Passage



Accomplishments

Lagunitas Watershed Roads Improvements



Accomplishments

Lagunitas Watershed Roads Improvements



Accomplishments

MMWD Led Activities

Monitoring Successfully Implemented

- Survey and Monitoring Working Groups
- Stream Flow Monitoring
- Juvenile Salmonid Surveys
- Salmon Spawner Surveys
- Salmon Smolt Surveys
- Habitat Typing Surveys
- Sediment & Streambed Monitoring
- Project Site Monitoring

Accomplishments

Surveys & Monitoring



Accomplishments

MMWD Led Activities

Programs and Policies Implemented

- Roads Memorandum of Understanding (MMWD, County, MCOSED, State Parks, NPS, RCD, TAC)
- Woody Debris MOU (MMWD, County, MCOSED, State Parks, NPS, RCD, TAC)
- Mt. Tamalpais Watershed Management Policy

Collaboration and Outreach

- Lagunitas Technical Advisory Committee - TAC
- Partnerships & Collaboration (TAC, TBWC, NBWA, One Tam, WSP, etc)
- Public Involvement & Educational Programs (Trout-in-Classroom, SRF)

Accomplishments

MMWD Participation in Programs & Projects

Collaborative Activities

- Early Detection/Rapid Response for Invasive Species
- Aquatic Invasive Species (AIS) Protocols for cleaning, storage, and inspections of field equipment and gear; surveys; public information
- Invasive Plant Control - Marin Knotweed Action Team (MKAT)
- Water Quality Monitoring - TBWC
- Coastal Monitoring Program – CDFW & NOAA Fisheries
- Community Education and Stewardship Initiatives – One Tam, WSP
- Devil's Gulch Habitat Enhancement - Trout Unlimited
- Habitat Enhancement w/Large Woody Debris – Marin RCD/Marin Co.
- Other Winter Habitat Enhancement Projects – SPAWN

Accomplishments

Partnerships - Lagunitas TAC



Accomplishments

Partnerships – Watershed Stewards Program



Accomplishments

Education & Outreach

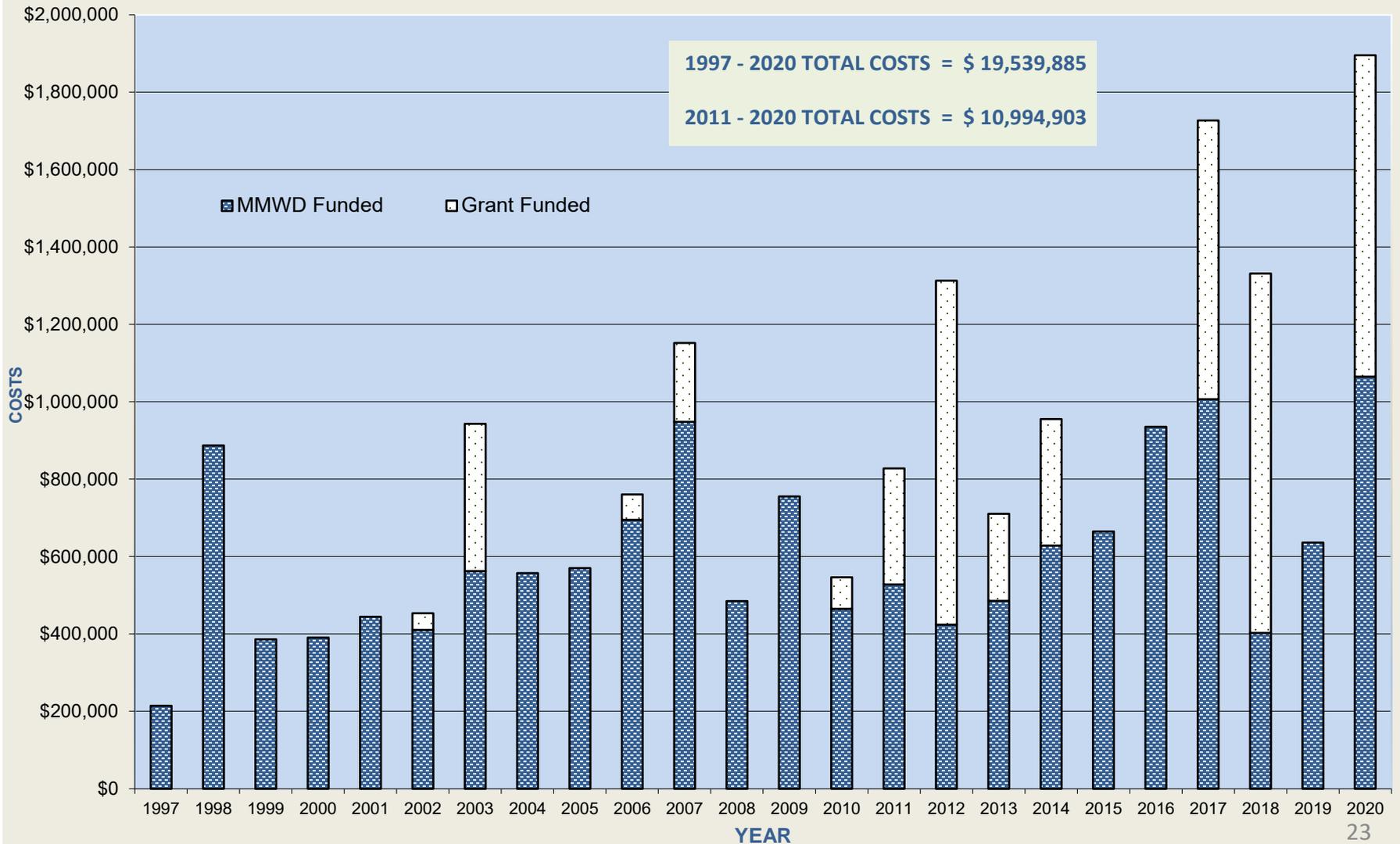


Accomplishments

Education & Outreach – Trout in the Classroom



MMWD Fishery Program Costs 1997 - 2020



Stewardship Goals



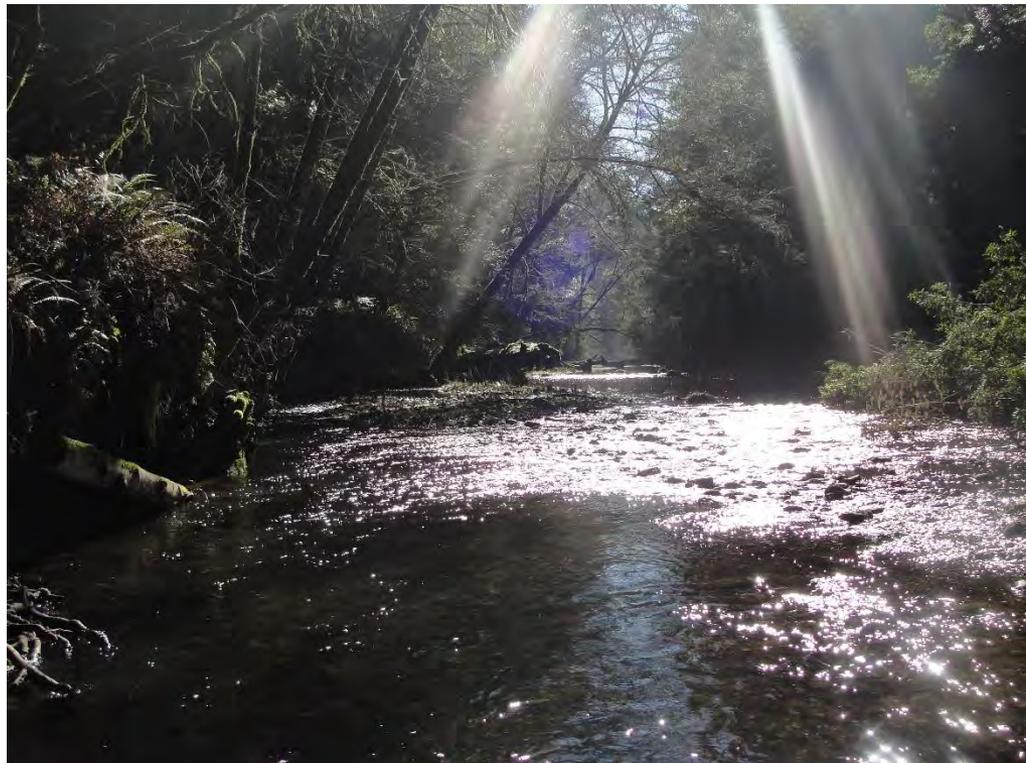
Goals & Targets in the 2011 Stewardship Plan

- Compliance with SWRCB Order WR95-17
- Habitat Goals & Targets
- Monitoring Goals
- Aquatic Invasive Species (AIS) Goals
- Program & Policy Goals
- Collaboration & Outreach Goals



Habitat Goals & Targets

- Targets for Suitable to Optimal Habitat for Coho, Steelhead, and California Freshwater Shrimp
- Based on habitat conditions as described in recovery plans by NMFS, CDFW, and USFWS; and Sediment TMDL:

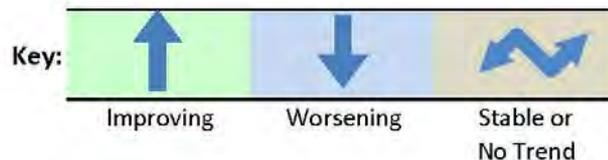


Habitat Goals & Targets

- Targets for Suitable to Optimal Habitat for Coho, Steelhead, and California Freshwater Shrimp
- Based on habitat conditions as described in recovery plans by NMFS, CDFW, and USFWS; and Sediment TMDL:
 - Deep complex pools formed by large woody debris
 - Adequate quantities of water
 - Cool water temperatures
 - Unimpeded passage
 - Clean spawning gravel & substrate
 - Access to floodplains
 - Large woody debris / Wood Loading
 - Riparian cover
 - ❖ Undercut banks
 - ❖ Exposed roots & overhanging vegetation
 - ❖ Submerged branches and vegetation.

**Lagunitas Creek Habitat Trends:
Habitat Typing Surveys 1995 - 2016**

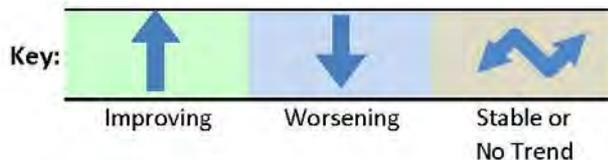
Parameter	Lagunitas Creek	San Geronimo Creek	Devil's Gulch
Fish cover	↓	↓	↓
Large Logs in Pools	↑	↓	↔
Primary Pool Extent	↔	↔	↓
Primary Pool Frequency	↔	↓	↓
Bank Vegetation	↑	↓	↑
Canopy Cover	↑	↑	↑
Gravel Substrate	↔	↓	↔
Fine Substrate	↔	↔	↔
Pool Tail Embeddedness	↓	↓	↓



Monitoring and Measuring Habitat Conditions

**Lagunitas Creek Habitat Trends:
Habitat Typing Surveys 1995 - 2016**

Parameter	Lagunitas Creek	San Geronimo Creek	Devil's Gulch
Fish cover	↓	↓	↓
Large Logs in Pools	↑	↓	↔
Primary Pool Extent	↔	↔	↓
Primary Pool Frequency	↔	↓	↓
Bank Vegetation	↑	↓	↑
Canopy Cover	↑	↑	↑
Gravel Substrate	↔	↓	↔
Fine Substrate	↔	↔	↔
Pool Tail Embeddedness	↓	↓	↓



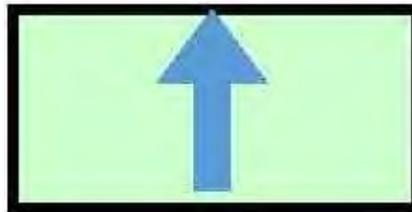
Monitoring and Measuring Habitat Conditions

Data Sources:

- MMWD Habitat Typing Surveys 2011 & 2016
- MMWD Sediment & Streambed Program 2012 - 2019

Habitat Condition – Proportion of Pools

Goal	Status	Description	2011 Habitat Survey	2016 Habitat Survey
<p>Maintain the proportion of pools at 40-50% by stream length</p>	<p>Habitat Conditions Improved 2011 - 2016</p>	<p>Proportion of pool habitat increased</p>	<p>44% Pools</p>	<p>61% Pools</p>



Habitat Condition – Pool Shelter Rating

Goal	Status	Description	2011 Habitat Survey	2016 Habitat Survey
Improve the shelter rating of pools	Habitat Conditions Declined 2011 – 2016	Overall decrease in pool cover	22% Cover in Pools	14% Cover in Pools



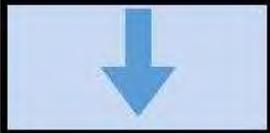
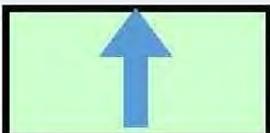
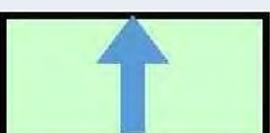
Habitat Condition – Gravel Substrate

Goal	Status	Description	2011 Habitat Survey	2016 Habitat Survey	2012 – 2019 Streambed Surveys
Increase the amount of beneficial gravel	Habitat Conditions Variable 2011 - 2019	Reduction in Gravels but Streambed Coarsening and Reduced Fines	42% Gravel & Cobble Substrate	28% Gravel & Cobble Substrate	Larger D50 & Lower % Fines

Different Surveys with Different Results

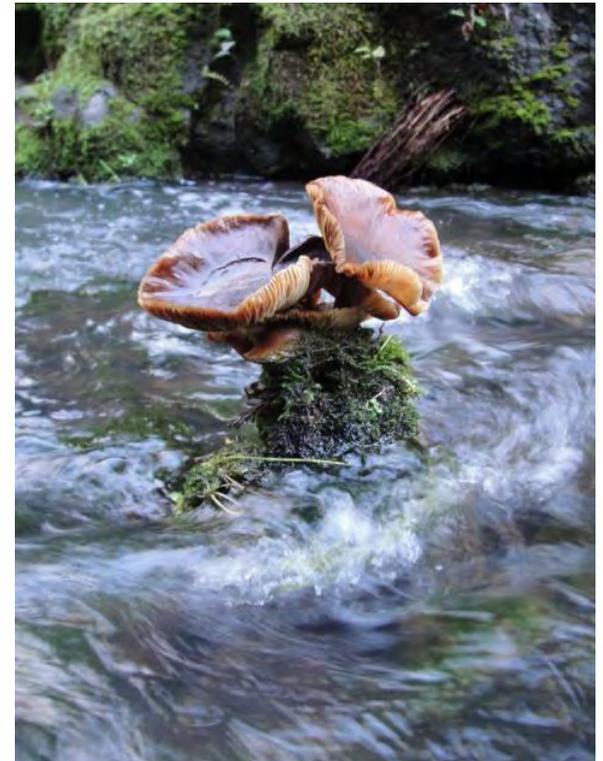


Habitat Condition Targets – Summary

Goal	Status	Trend
Maintain the proportion of pools at 40-50% by stream length	Habitat Conditions Improved 2011 – 2016	
Improve the shelter rating of pools	Habitat Conditions Declined 2011 – 2016	
Increase the amount of beneficial gravel	Habitat Conditions Variable 2012 - 2019	
Improve floodplain complexity & connectivity	Habitat Conditions Improved 2011 - 2020	
Increase large wood (LWD) frequency	Habitat Conditions Improved 2011 - 2020	
Enhance riparian corridor & canopy cover	Habitat Conditions Improved 2011 - 2016	

General Elements of Stewardship Plan 2021

- Continue Ongoing Requirements of Order WR95-17
- Continue Survey & Monitoring Studies
- Restoration Planning and Implementation
- Continue Participation and Support of the Lagunitas Technical Advisory Committee (TAC)



Process and Timeline for Stewardship Plan 2021

Timeline	Plan Development Activity
April 21, 2020	MMWD Board of Directors – Initiate Plan Development
	Lagunitas TAC – Review Stewardship Plan Achievements
	Watershed Committee – Report on TAC input and discuss the focus of the Plan
	MMWD Staff – Develops Preliminary Plan
	Watershed Committee – Preliminary Draft Plan
	Lagunitas TAC – Draft Plan Presented
	MMWD Staff – Revises Plan Based on Input Received
Fall of 2021	Watershed Committee/TAC – Preliminary Final Plan
	MMWD Board of Directors - Final Plan (Informational Item)





MARIN MUNICIPAL
WATER DISTRICT

Thank you