

Methow Restoration Council

December 15, 2015

Participants:

Name	Organization/Affiliation
Amy Martin	Okanogan Conservation District
Brian Fisher	MSRF
Chris Butler	Yakama Nation
Chris Johnson	MSRF
Crystal Elliot	Trout Unlimited
Gene Shull	Forest Service
Greg Knott	Van Hees Environmental
Jarred Johnson	Yakama Nation
Jeff Peterson	Reclamation
Jenni Novak	WDFW
Jennifer Molesworth	Reclamation
Jessica Goldberg	MSRF
Joanne Hedou	Local Citizen
John Crandall	MRC
Joy Juelson	UCSRB
Ken Muir	USFWS
Kristen Kirkby	CCFEG
Lance George	Forest Service
Madeleine Eckmann	Yakama Nation
Paul Wagner	Colville Tribes
Rick Alford	Yakama Nation
Rob Crandall	Methow Natives
Robes Parrish	US Fish and Wildlife Service
Ryan Fortier	WDFW
Sara Mounsey & Biology Class	Methow School District Independent Learning Center
Teresa Fish	Yakama Nation
Troy Brandt	River Design Group

Meeting Notes:

John Crandall – Monitoring Update: We’re gearing up for the annual redo of the Methow Monitoring programmatic worksheet. All the programs in the Methow shift every year. Expect that to come out to different groups to find out what things are ongoing and occurring. We will try to get that updated. MaDMC will meet in January to make a master monitoring list for the Upper Columbia. It is quite an effort to get it done across the Upper Columbia. This will lead to the annual Upper Columbia monitoring meeting. The meeting has had a mixed success rate in terms of its utility and what people can learn from it. Last year we tried to bring in relevant speakers interspersed with the reporting. The reporting is important to avoid duplication of effort and to be accountable to the public to using our resources for monitoring efficiently and effectively. Also facilitates data sharing. The annual meeting will likely be in March, may be in the Methow this year.

This month’s paper is from Forest Ecology and Management “wildfire may increase habitat quality for spring Chinook salmon in the Wenatchee River subbasin, WA, USA” offered by Rebecca Flitcroft, et al. It is an interesting read; the take-home is that fire is really good for fish over the long term, effect varies by life stage, may decrease some stages in the short term, but brings in wood and gravel, etc.; fire affects temperatures, but

over time the effects are a good thing. I hope to see some creative forest management that will benefit forests and fish over the long-term.

Chris Butler – Eightmile Creek Fish Passage Barrier Assessment & Stream Corridor Reconnaissance: Gene Shull started talking to me about the road impacts to Eightmile Creek in 2011, but there wasn't enough information to go on. We went to bid on an assessment, and River Design Group got the contract for the work.

Gene Shull – for those not familiar with the creek, it is a tributary of the Chewuch River, very cold, very good water quality. It's about 16 miles long, flows in to the Chewuch from the NW near Boulder Creek. It drops at the very bottom, and there is about 12 miles of really great fish habitat in terms of temperature and gradient. The road was built on the channel, constricting it and making it a velocity barrier. A natural waterfall is also a partial barrier. It's a creek that we have been looking at ways to get more fish up in there. Current issues are that there is a strong brook trout population, so we need to do something to address that or hold off if bull trout are our primary goal. Still considering brook trout eradication, but chemical treatment may not be an option due to listed fish. We will get an expert to look at feasibility/constraints, may do physical removal, or we may just open it up and let the fish sort it out.

Troy Brandt – River Design Group, based out of Corvallis; we work in Oregon, Idaho, and Montana primarily, this project is our first with the Yakamas and up in this area.

Goals and tasks, Data Collection, Fish Passage Assessment, Hydraulic Modeling Stream Corridor Recon

Project Goals: Assess and characterize barriers, Develop concepts to address issues, look at habitat potential.

Tasks: reviewed existing reports, fish barrier surveys and recon, hydro analysis, memo of findings, compile data.

Existing barriers – there is the bridge site and the waterfall site. The waterfall site has three distinct drops. For recon, we broke the watershed into reaches, using Forest service air photo panels. We used a tablet with PDF Maps to get geo-referenced photos.

Data Summary: We wanted to collect sufficient data to develop a surface model, used real world elevations, continued channel profiles downstream of each site to assess gradient. Noted typical conditions, potential fish passage issues, habitat conditions

Fish passage metrics – we looked at WDFW natural barriers metrics – morphological. We don't really have a cumulative slope and vertical drop metric. Energy dissipation factor (EDF) – turbulence, based on NOAA fishway – morphological and hydraulic, depth, velocity, vertical drop, EDF.

Jennifer Molesworth – don't you have to think about life stage too? Very different for juveniles than adults.

Time of year/flow is also important.

Troy – yes, I will talk about that. EDF is tied to body size increases, will talk more about values with change in flow.

Fish Passage Metrics Comparison - WDFW Natural Barriers – no cumulative (slope and drop) metric.

Hydraulic modeling – hydrology – used regional equations (from StreamStats 3). There's a large gap between high flow and average flow, so we also looked at some intermediate flows. We looked at metrics for all three species.

Hydraulic Modeling output variables – velocity, depth, Energy Dissipation Factor

Bridge Site – the observed flow was 42 cfs, two discrete drops. We used SRH 2D for modeling. Also used 130 cfs (typical May/June flow), and did a depth and velocity plot.

With increasing discharge, we see increasing energy discharge values. At lower flows, larger bull trout are likely able to make it through the waterfall site

John – any difference between your data and the Forest Service report?

Troy – the earlier effort had fewer topo points, 1D vs. 2D model, but the results were similar. Probably showing that the bridge site is a barrier at lower flow than it is, but that bull trout can likely get through the waterfall site, may be too much for steelhead.

Discussion – existing redd and fish survey data, not conclusive and they haven't looked a lot, tagging locations and PIT data. Spring Chinook use.

Chris B – I talked to Charlie Snow about why we don't see chinook at the mouth, and he thinks there isn't enough flow, and there may be spawning habitat limitation.

Discussion – previous sampling efforts, population estimates, discharge measurements and flow losses over the stream.

Troy – Hydro modeling – shallow depths, high velocities, high turbulence. Falls may be passable at low flows; difficult flow conditions at moderate to high flows,

Velocity depth and variation may provide channel margin passage

Reconnaissance – Channel influenced by beaver, LWD, hill slope effects, bedrock outcrops; undersized culverts (some replaced); livestock use; recreational use; fine sediment

Next steps – finish recon write up, developing concepts for fish passage solutions

John – there is a lot of info on eradication of fish to reintroduce bull trout, electrofishing is tough – you knock them back and they come back quickly. With Eightmile, even the chemical treatment would be difficult because of springs and upwelling providing refuge, especially over such a long stream channel. If you put bull trout up there, they will hybridize with the brook trout pretty quickly, so you need to think about it.

Gene – the Eightmile Creek sub-watershed is the Methow Ranger District's priority restoration area, we are slowly moving forward with the Yakama, and need to decide on a path forward of dealing with the brook trout. We won't do one that has a low probability of success.

John – cost is also a factor

Gene – we also have westslope cutthroat, rainbow trout, so it's complicated

Jennifer – if you could get steelhead up there, it might be worth it. Brook trout aren't seeming to be dominant in areas where they have to compete.

Chris Johnson – are you talking about artificial fish passage?

Gene – at the bridge site, we would need to look at ways to either build passage through there with the road, or possibly move the road, but it would be a very expensive road to move. Have more flexibility there to do a more natural channel. The lower waterfall site is more challenging, equipment access is almost impossible, may look at something artificial, but don't want to cause a lot of future maintenance.

Chris B – we want it to be natural, not something to maintain.

Gene – we aren't totally there; we haven't decided where to go there.

Chris B – also with the brook trout, the road, all of these issues are topics on the table, next steps are to look at the issues and constraints and see how or whether to address it.

John – hard to get my head around removing a natural barrier where some fish are getting past; is this something the FS is going to be doing?

Gene – we are looking at Eightmile separately. It's a unique area, excellent potential for fish passage above it. No other areas are on the radar.

Jeff Peterson – the same discussion is happening at Icicle Creek; part of the argument is working on climate change adaptations

Jennifer – understanding what happens with steelhead would be important.

Gene Shull – Fire Retardant Use in the Watershed: I was asked to give a short discussion on fire retardant and the use of that tool over the last few years. I will talk about Carlton Complex (2014) and Chelan/Okanogan complex (2015) fires. Fire retardant is a fertilizer based formulation that inhibits forest fuels' flammability and combustion. Common type is Phos-chek LC-95A-R or F. Includes water, ammonium phosphate, and additives. I have been told that it no longer contains cyanide. The additives are trade secrets. R is for iron oxide, red color, F is fugitive color, which is a temporary pigment. Comes out as a thick, gummy mud like consistency for improved drop characteristics. Retardant is toxic to organisms, especially aquatic organisms, so the Forest Service has a set of guidelines on how to use fire retardants – mapped avoidance areas, follow retardant use guidelines for aircraft operation, annual pre-season coordination and training, and monitoring reports. For aquatic resources, we avoid waterbodies with a 300 ft. buffer for occupied T&E Habitat and Critical Habitat. I'm only talking about national forest system lands, off that there are no restrictions.

Lance George – there are still some restrictions off forest, but not as many

Gene – and there is flexibility if there is life or property at stake. We try to use lowest toxicity when we can; they train pilots on how to follow guidelines, and how to avoid waterbodies. Good effort to give the pilots the

tools to follow the guidelines. Forest Service meets with NMFS and USFWS every year to get updated info on fish distribution, improvements, and they brief pilots on avoidance areas. If we have a drop in an avoidance area, it is called a “misapplication,” and afterwards we have a monitoring protocol. We do reporting on all drops on National Forest lands. A misapplication triggers water quality monitoring and maybe some fish monitoring. We had a misapplication on Gold Creek during Carlton Complex. After a misapplication, they test water quality. If ammonia detected exceeds a threshold, fish bios go look for dead fish. If mortality is observed, snorkel surveys are done to determine if the historic local population is still present, if not, they work with FWS and WDFW for remedial options. Ammonia toxicity depends on pH and temperature.

Lance – the size of reach downstream also matters.

Kristin Kirkby – do the effects linger?

Gene – in a study where they put retardant into a creek, they were able to detect traces of elevated ammonia a year later. There is initially a rapid drop in concentration, but with lingering effects.

Discussion – ammonia taken up by plants and fish, algae

Gene – toxicity to fish – the retardant is considered a “practically nontoxic” to fish. Lowest toxicity category for fish. Retardant does kill fish, but has to be very concentrated. Iron oxide kind is slightly less toxic.

Carlton complex – an estimated 581 loads were dropped, almost a million gallons, one misapplication; there were other drops on streams off the national forest.

FS acres – 130,460; Private Acres – 96,150; WA DNR/DFW acres – 29,390 (all approximate)

John – does any entity track drops off of the National Forest?

Gene – both the Carlton Complex and Chelan Complex fires were state fires, technically DNR fires. I don’t know who tracks the info. I guess that the responsible agency is responsible for tracking that. Concentration level that drops can go up to is extremely high, so you can get very toxic conditions for a short time. The misapplication was over the North Fork of Gold creek. We estimated 60 gallons hit the stream, approximately 110 lbs., and we estimated it impacted over a ¼ mile of the creek, toxicity is short term, one study saw a 90% reduction in 30 minutes. No mortality was observed, but likely occurred.

Chelan and Okanogan Complexes: For this year, for the Methow we estimate 157,545 gallons on the Chelan complex, and more than 400,000 gallons on the Twisp River. There were two misapplications on private land on the Twisp River. We had no requirement, but did go out and measure water quality on those two anyway. We got in there 24 hours later, and it was in an area where there was no threat from fire. It sounds like at least the lower misapplication was intentional.

Chris J – the fire had spotted into the restoration mulch, they probably were trying to put that out.

Gene – we saw one dead steelhead and one sculpin on the upper site, no dead fish at the lower site, ammonia recorded was at low end of being toxic, 1-2 days later.

Forest Service has changed fire retardant drop guidelines. In the past, fire retardant drops over CH or water were acceptable to save lives and property, now, intentional drops over Avoidance Areas are only acceptable to protect only for life and human safety. Only for FS managed fires, property protection is not a reason for intentional drops. We will continue to use fire retardant as a tool, while working to avoid misapps into ESA streams. With climate change and anticipated increase in extreme fire behavior, we can expect more retardant misapplications.

Discussion – possible habitat restoration options if necessary, more likely to be necessary in pond or slow moving area where it wouldn’t wash through, rain events causes it to wash in to the stream.

Independent Learning Center Biology Class

Rob Crandall– we have a presentation from the Independent Learning Center in Twisp. Through MSRF’s Watershed Watchers programs, we work with Kindergarten through High School.

Students – we’ve been working on a field study on the restoration site in Winthrop; we were looking for scientific evidence on whether the restoration is working. We started with classroom work with Rob, then we did a site visit. We looked at plant diversity at the Twisp Ponds site to see a mature restoration site, and then conducted a field study at WDFW Floodplain. Our question was “Is the project improving the quality and function of the riparian habitat?” We looked at shade, canopy layers, plant diversity, and ground cover.

For our scientific method, we discussed components of a successful field study. We had three plots, baseline, representative, and treatment. We did estimates for the plots and also included data from another class at Liberty Bell High school to increase our data. We assigned a point system for habitat evaluation scoring. The treatment plot had the most plant diversity, which will increase function of the site as long as the plants keep growing. Only the representative plot had shade, but the hope is that the treatment plot plants will grow to also have shade. The treatment plot is a developing riparian habitat that is beginning to improve the riparian condition for the site.

Rob – with Watershed Watchers we are always trying to improve the program. We are working with the older students to improve the biology, field study presentation.

Joy Juelson – UCSRB Updates: Greer asked me to remind you all to register for the Upper Columbia Science conference that will January 27th and 28th, registration is free through the end of the month. There is a reservation block at the Coast hotel. We have some great keynote speakers – a nice mix of out of the area and local speakers.

Jeff – we have a number of people at Reclamation who chose to go to this instead of River Restoration Northwest this year.

Chris – are we setting up a WebEx?

Joy – we need to work on that. There will also be discounted lift tickets to Mission Ridge the Friday after the conference as well.

SRFB – we had our list approved by the SRFB last week. Two projects from the Methow and four from the Wenatchee. The Methow projects were protection projects.

Citizens Advisory Committee for the SRFB process - we had an opening on the Okanogan Committee when Don Phillips retired. We had a call for nominations. We received three nominations for the committee, nominations were sent to Okanogan County Commissioners, and they chose Tom McCoy, who was approved by the UCSRB board last week.

2015 projects – we had 38 projects in the Upper Columbia (12% decrease over 2014). Majority were restoration, 4 protection, and 3 combination, 5 assessments, etc. Methow had 18 projects. It was an off year in the Entiat. We are tracking all of the projects and will submit them to NOAA, identify metrics, and put it in HWS. Information is available for those who want it.

Chris – it would be interesting to know how many of the protection projects are intended to lead to restoration and which are true protection.

Jennifer – do you have an update on the expert panel?

Joy – the look back dates are Feb 24th and 25th, and the look forward will be June 21-23rd.

Jeff – the process is a requirement for the action agencies under the BiOp, Jude and Rosy have made the process smoother, and more meaningful. We've had really good comments.

Joy – big picture, the Expert Panel can influence where Bureau and BPA funds are spent on restoration.

Jennifer – it's our report card, and is where the money comes from.

Jeff – we are assuming there will be another BiOp after 2018, moves to reform the expert panel process with models, but we appreciate the local participation.

Jennifer – the locals and the regional technical people are the experts in the process

Roundtable

Jennifer Molesworth – Reclamation: we are working on the Barkley Bear project now, we have initiated the project, located on the mainstem of the Methow downstream of Winthrop. It's a historic irrigation intake that is scheduled to be abandoned and moved downstream in a TU project. We will be looking at habitat restoration in the area where the diversion is no longer needed. They are converting to a pump station downstream.

They are finishing up the MVID project, a huge milestone. We've been able to abandon the Twisp river diversion and return 11 cfs+ to the Twisp River, huge win for flows in the Twisp. MVID will have a brand new system.

Teresa Fish – Yakama Nation: we're back down to two people. We just completed our second year of solid data success at Hancock Springs. We had some important help from volunteers.

Gene Shull – US Forest Service: we're were ramping up into full swing with our Mission Project. Taking our field work from this summer. This is our first Forest Restoration Strategy project. We've had a lot of help from Crystal at TU, Melody at UCSRB, John Crandall, working on our Aquatic restoration package.

Our Chewuch Transportation Plan is also out for comment – the plan to right-size roads in the Chewuch. Please send in comments and support decommissioning roads to benefit fish.

Lance was part of a BAER team this fall that came up with some mitigation projects, but they weren't able to do the work on Black Canyon this fall. We will try to get up there after the snow melts before runoff with equipment – there is about a 30 ft. deep cut in the road. Pretty impressive – the road diverted the creek. We will be looking for other similar possible situations. We had planned to pull culverts on that road, but couldn't. Lance – it's all glacial outwash there, if we had pulled it we probably would have still had a failure, not down the road, but still a failure.

Jennifer – the creek looked pretty good downstream

Gene – our Forest is transitioning to a new budgeting process, our Forest Supervisor's office is setting our district priorities. Now any project that takes more than a week of our time, we need to get approval for it. We're starting to develop our next year's work plan the year before. So if people want to work with us, we need to know early and the better it aligns with our goals and objectives the better we will be able to work it in. We are still really into partnerships, but we have to work on things early. Volstead road is not on our priority list for the coming summer, but it is a resource priority.

Paul – what would it take to get Volstead road on the list?

Gene – a call to Richard Vacirca would be the first step, and include Mike Liu. Sept 30 is the end of the Fiscal Year.

Discussion – roads on Beaver Creek, squeaky wheels are good; FS getting better at working with partners
Crystal Elliot– the NW Forest Health Collaborative is a good venue for this kind of conversation, they can help elevate the conversation.

Lance George – USFS: we also have several Chewuch and Early Winters projects with the Yakama Nation. Early Winters campground has a bank erosion problem, working with National Forest Foundation on Treasured Landscape. On the Chewuch, RM 15-20 will start this year. We finished Goat Creek and will be monitoring that. We will have a lot of ongoing BAER work this spring, hope not to have more impacts before we are able to get out there.

Gene – also Jenni Novak is working hard on the Wolf Creek Diversion issue, doing a lot of the leg work.

Jeff Peterson – Reclamation: we call these groups the Watershed Action Teams, and this group is heavy on the action. A lot of people working through the years to get things done.

Greg Knott – VHE: The MVID rehab and instream flow improvement project is a \$10 million project and the payoff to fish is 11 cfs in the Twisp River, and that will be this spring. Seeing 11 cfs there is huge, and the restoration project is going in. Nice to see it come together. Down to the final pieces of the puzzle on the MVID project. Almost on budget and almost on schedule.

The Methow Watershed Council – we are a group that deals with water quality and quantity and not habitat. We had a project to try to restore flows on Bear Creek and we ran into insurmountable obstacles with the amount of water available, amounts of water in Bear Creek, and water right issues. We will be re-scoping our Ecology grant to look at the Wolf Creek Reclamation District – an irrigation and water in wolf creek project. We expect to get an answer to the re-scoping in January from Ecology.

Brian Fisher – MSRF: The MVID project has allowed MSRF and Reclamation to do the habitat project at Twisp Floodplain. We completed the first phase of the project, in areas that are outside of the ordinary high water

line, this summer. This reconnected a substantial floodplain wetland, removed MVID intake and fish screen. Next summer will be levee removal and instream wood placements to be done during the instream work window.

On Frazer Creek, we just completed a trial of Beaver Dam Analogue structures to capture sediment in a section of incised channel. We are excited to use them in other areas, a demonstration project as well.

We are also working on Barkley Bear with Reclamation, BPA, and UCSRB.

Jenni Novak – WDFW: we are working on the Upper Wolf Creek irrigation diversion, replacing and moving the screen, addressing the fish bypass, permitting. We have a lot of support, and we have funding. We will present design to the District Board, the work will be done after irrigation season.

Working on a fish barrier irrigation diversion on Frazer Creek to bring screen into compliance.

Gene – we need to know ahead of time before all barriers are addressed on Frazer Creek.

Chris Butler – Yakama Nation: it was a busy construction year, I hope everyone comments on the Chewuch Transportation Plan. We're looking at RM 15.5-20 on the Chewuch, with potential construction 2017-2018. Also talking with private landowners downstream. Eightmile Creek. We did 3.5 miles of projects this year: RM 13-15 with the Forest Service, Chewuch Campground project, and Chewuch River Right project. We got everything done and replanted, came out well, BCI contractors did well. Kysar and Koistinen also were great; they are always adapting and came up with some new tools.

Ken Muir – USFWS: we did goat Creek with MSRF, USFS, and NFF this fall. We installed 4 time lapse cameras for the winter; we're getting a new web site.

Amy Martin – Okanogan Conservation District: we are considering some fire mitigation grant applications/FEMA

Ryan Fortier – WDFW: from fish management, steelhead season closed on the Methow, the likelihood is that it will not reopen. Harvested about 1200 hatchery fish. The Okanogan is still open. Looking at 180,000 for spring Chinook returns, but not as accurate; the sockeye predictor is more accurate and looking at only 40,000, which is not great.

Jarred Johnson – Yakama Nation: upcoming projects for 2016 – Hans is managing several projects, Early Winters creek in 2017, Twisp Ponds left bank in development for 2016, Horseshoe side channel project for 2016.

I will manage three construction projects in 2016 – Big Valley, Newby Narrows, and Lower Twisp Large Wood project.

We are still moving forward with the Scaffold Camp acquisitions; we received approval to move forward with an appraisal.

The Upper Methow Reach Assessment is done, we will send to Jessica for distribution.

Jennifer – at the last meeting, we talked about having a project prioritization session for the Upper Methow and the Twisp to Carlton Reach Assessments; those would queue up really well for the expert panel process, so would be good to have them before June

Rick Alford – Yakama Nation: were finishing up spawning ground surveys; coho run this year not as good as expected, slightly less than average.

Joanne Hedou – Local Citizen: I am a fluvial geomorphologist; I have worked at NHC and Wild Fish Conservancy. I am also a creative non-fiction writer, including grant writing, and would like to look for some small work in writing or maybe field work.

Kristen Kirkby – CCFEG: we are looking for the final Twisp to Carlton Reach Assessment in January or February. Silver Side channel project re-scoping – we had to present for a change to the grant, which went through.

Robes – we are working on the design for the lower part, and we are still working on access to the upper part.

Chris Johnson – MSRF: USFWS has asked MSRF to look for further access and acquisition in support of the CCFEG Silver Side Channel project. Getting started on working on that, will be getting together with the landowners.

We are working on round 3 of the Methow car removal and art, debris removal project. We also asked for funding to remove what is left of Bob Elk's garage before it falls into the river.

Frazer Creek BDA's, working on additional bridges on Frazer Creek. Lots more still happening on Frazer Creek. 2016 Methow Watershed Calendars are here and ready for distribution. Contact Chris for details.

Paul Wagner – Colville Tribes: nothing new since last time, project planning for 2016-17 funding cycle. Our funding starts July 1.

Next MRC meeting January 19th

Definitions of Commonly used Acronyms	
AEM	Action Effectiveness Monitoring
ANS	Aquatic Nuisance Species
AREMP	Aquatic and Riparian Effectiveness Monitoring Program
BACI	Before, After, Control, Impact (study design type)
BEF	Bonneville Environmental Foundation
BO/BiOp	Biological Opinion
BPA	Bonneville Power Administration
CAC	Citizens Advisory Committee (for SRFB funding applications)
CAO	Critical Areas Ordinance
CBFWA	Columbia Basin Fish and Wildlife Authority (pronounced "cubfwah")
CCFEG	Columbia Cascade Fisheries Enhancement Group
CCT	Colville Confederated Tribes
CHaMP	Columbia Habitat Monitoring Program
CMZ	Channel Migration Zone
CREP	Conservation Reserve Enhancement Program
CSF	Community Salmon Fund
EDT	Ecosystem Diagnosis and Treatment
ESA	Endangered Species Act
FCRPS	Federal Columbia River Power System
FFFPP	Family Forest Fish Passage Program
FIA	Forest Inventory and Analysis program (USFS)
Four "H"s	The four factors affecting salmon recovery: Hatchery, Hydro, Habitat, Harvest
HACCP	Hazard Analysis and Critical Control Point
HGMP	Hatchery Genetic Management Plan
HPA	Hydraulic Project Approval
HSRG	Hatchery Scientific Review Group
HWS	Habitat Work Schedule
IMW	Intensively Monitored Watershed
IS	Implementation Schedule
ISEMP	Integrated Status and Effectiveness Monitoring Project
ISRP	Independent Scientific Review Panel
IT	Implementation Team
LW/LWD	Large Wood/Large Woody Debris
M2	Middle Methow (a project area defined as the reach between Winthrop and Twisp)
MaDMC	Monitoring and Data Management Committee (pronounced "madmac")
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MRC	Methow Restoration Council
MSRF	Methow Salmon Recovery Foundation (pronounced "em-surf")
MVRD	Methow Valley Ranger District
MWC	Methow Watershed Council
MYAP	Multi-year Action Plan (also sometimes called the 3-year workplan)
NFF	National Forest Foundation
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration

NPCC	Northwest Power and Conservation Council
OCD	Okanogan Conservation District
OBMEP	Okanogan Basin Monitoring and Evaluation Program
OWL	Okanogan Wilderness League
PCSRF	Pacific Coastal Salmon Recovery Fund (pronounced "Pacsurf")
PIBO	PACFISH/INFISH* Biological Opinion
PNAMP	Pacific Northwest Aquatic Monitoring Partnership
PUD	Public Utility District
QAQC	Quality Assurance, Quality Control
RA	Reach Assessment
RCO	(Washington State) Recreation and Conservation Office
REI	Reach-based Ecosystem Indicators (used in Reach Assessments)
RFEG	Regional Fisheries Enhancement Group
RFP	Request for Proposals
RM	River Mile
RPA	Reasonable and Prudent Alternative(s)
RTT	Regional Technical Team
SEPA	State Environmental Policy Act
SMP	Shoreline Management Plan
SOAL	State Owned Aquatic Lands
SOW	Statement of Work
SPIF	Specific Project Information Form (used with the Corps ESA programmatic)
SRFB	(Washington State) Salmon Recovery Funding Board (pronounced "surfboard")
SRP	State Review Panel (for SRFB funding applications)
STEM Database	Status, Trend and Effectiveness Monitoring database at NOAA's Northwest Fisheries Science Center
UCSRB	Upper Columbia Salmon Recovery Board
TRT	Technical Recovery Team (NOAA)
USFS	US Forest Service
USGS	US Geological Survey
VSP	Viable Salmonid Population
WAT	Watershed Action Team (the MRC is our WAT)
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WNFH	Winthrop National Fish Hatchery
WWP-TU	Washington Water Project of Trout Unlimited
YN	Yakama Nation

*PACFISH/
NFISH The PACFISH/INFISH Biological Opinion (PIBO) Effectiveness Monitoring Program was initiated in 1998 to provide a consistent framework for monitoring aquatic and riparian resources on most Forest Service and Bureau of Land Management lands within the Upper Columbia River Basin.