2026 Regional Committee on Marking and Tagging Meeting Minutes
Tuesday March 24th – Thursday March 26th, 2026
Hybrid Meeting
Idaho Department of Fish and Game
600 S. Walnut St Boise, ID

Meeting Materials

- *For further Meeting Info & Documents:* RCMT Meeting Page
- *2026 Agency Updates:* **Agency Docs 2026**
- *Last Year's Meeting Minutes:* RCMT 2025 Meeting Minutes
- *Last Year's Agency Planning Documents:* RCMT All Agency Update 2025

Agenda

- Agenda-RCMT2026.pdf

Attendance

Online: Jason Azat (CDFW), Jillian Cady (WDFW), Sam Cimino (PSMFC StreamNet/PNAMP), Monica Diaz (PSMFC), Gabe Garza (ODFW), Todd Gilmore (USFWS), Megan Griffiths (PSMFC RMPC), Jordan Miller (PSMFC-Pikeminnow/RMPC), Greg Wilke (PSMFC), Mari Williams (PSMFC StreamNet/PNAMP), Jessie Rivera (USFWS), Dan Webb (PSMFC RMPC/Pikeminnow), Ryan Lothrop (WDFW)

In Person: Stan Allen (PSMFC), Kate Al-Sheikhly (PSMFC-RMPC), Forrest Bohlen, (IDFG-PSMFC), Matt Campbell (IDFG), Trevor Clark (ODFW), Benjamin Cross (USFWS), Katharine Coykendall (IDFG-PSMFC), Yvonne Dettlaff (USFWS), Lara Erikson (PSMFC), John Hargrove (IDFG-PSMFC), Audrey Harris (IDFG-PSMFC), Dave Knutzen (NMT), Eric Keller (ADFG), Brian Leth (IDFG), Jim Longwill (PSMFC-RMPC), Marianne McClure (CRITFC), Jesse McCane (IDFG-PSMFC), Nancy Leonard (PSMFC, RCMT Chair), Austen Reiter (NMT), Ash Shaffer (NWIFC).

Summary of Action Items

- Nancy will send out an email in September to the Regional Committee on Marking and Tagging (RCMT) members to check if there is a need for scheduling a RCMT Fall Status Update Meeting in October 2026.
- Washington Department of Fish and Wildlife (WDFW) and Northwest Indian Fisheries Commission (NWIFC) will host the 2027 RCMT Annual Meeting. WDFW and NWIFC will coordinate with Pacific States Marine Fisheries Commission (PSMFC) Regional Mark Processing Center (RMPC) staff, Nancy and Kate, to identify the meeting location.
    - Potential 2027 agenda item that requires follow-up including:
        - Marianne will coordinate with Ash regarding asking if Yakama supplementation group can participate.

        - Topic on how to assess the number of Coded-Wire Tag (CWT) recoveries needed for analysis, focus on indicator stocks, and how that could inform the number of fish that need to be CWT to meet that recovery number. Marianne indicated the existence of a program that could inform a more user-friendly tool, and Dave mentioned that Northwest Marine Technology (NMT) may have options to assist with increased tagging numbers.
        - RCMT members to send topic ideas for 2027 by email to Nancy.
- Jim will work with PSMFC staff to add the meeting list at the bottom of the RCMT webpage (https://www.rmpc.org/committees/rcmt/) for ease of tracking who has hosted which meeting and who is up next.
- Oregon Department of Fish and Wildlife (ODFW) will host the 2028 RCMT Meeting, with Columbia River Inter-Tribal Fish Commission (CRITFC) possibly assisting.
- Updates to agency contacts will be communicated with RMPC staff:
    - Ash will confirm name of the new CWT Coordinator for the Stillaguamish Tribe of Indians (STIL).
    - Marianne will confirm whether Yakama Nation (YAKA) has a new data provider, and whether this is Shubha Pandit.
    - RMPC website will be updated to reflect all changes
- Updates to the status of CWT datasets and corrections to records
    - Dan (PSMFC) will provide the specific Alaska Department of Fish and Game (ADFG), Canada Department of Fisheries and Oceans (CDFO) and WDFW location codes that Would-Be-Orphaned (WBOs) to the agencies for review and clean up.
    - Dan (PSMFC) will confirm with National Marine Fisheries Service (NMFS) that Little Port Walter is no longer reporting release (post 2022)
    - Reminder that Makah Tribe (MAKAH) is directly submitting Catch-Sample and Recoveries to Regional Mark Information System (RMIS), and that NWIFC continues to submit Release data on behalf of MAKAH.
    - U.S. Fish and Wildlife Service (USFWS) will check on 2025 release reporting and ensure the data are entered into the database.
    - California Department of Fish and Wildlife (CDFW), ODFW, and WDFW will report non-escapement data for 2023 onward, as NMFS will no longer report it.
    - Ash will check in with Quinault Division of Natural Resources (QDNR) regarding their non-escapement recovery data.
    - Yvonne will check in with Dan on USFWS recoveries from 2023–2024.
    - Dan will send the QDNR 2024 catch sample error to Ash.
    - Marianne will check on CRITFC 2024 releases.
    - Dan will reach out to Vaughn to clean up YAKA catch sample errors.
- Sam/Monica will contact Charles Seaton, Coastal Marine Observation and Prediction (CMOP) Coordinator cseaton@critfc.org to discuss adding the CMOP link to Salmon Data Discovery Tool (SDDT) https://cmop.critfc.org/datamart/

- PSMFC RMPC staff will have the draft RMPC and RMIS logos revised based on the input received, including making the fish in the logo bolder and not all one-color tone for all draft logos and using the hook and net logo version for the fishing regulations logo.
- Marianne will raise the RCMT suggestion of assessing how to incorporate biological and age composition data into RMIS with the Pacific Salmon Commission (PSC), Coho Technical Committee (CTC) and determine whether there is support to submit a request to Technical Committee on Data Sharing (TCDS).

Day 1: Tuesday March 24th, 2026

Item: Welcome/Introductions & General RMPC/RCMT Items

- National Oceanic and Atmospheric Administration (NOAA) representation updated: Charlie Waters replaces Caroline Lawrence as the NOAA RCMT member. Caroline Lawrence remains the NOAA data provider and CWT coordinator for now, and Charlie Waters may become the point of contact for these roles in 2027.
- MAKAH: Tiffany Peterson is the new data provider.
- STIL CWT Coordinator update pending: Kate Konoski has left STIL; Ash will share the new CWT Coordinator contact for the Stillaguamish Tribe of Indians.
- YAKA data provider confirmation: Marianne McClure will confirm any RCMT data provider changes for the YAKA member or confirm if Vaughan Gilmore is still the correct contact.
- 2027 RCMT Annual Meeting: WDFW will host in coordination with NWIFC;
- 2028 RCMT Annual Meeting: ODFW will host, with potential assistance from CRITFC.
- Past annual meeting locations and hosts: Jim will work with PSMFC staff to add a meeting host history and upcoming host list to the RCMT webpage for improved tracking.

Item: Status of CWT Datasets

- Reminder that the 2009 Idaho Department of Fish and Game (IDFG) genetic-based tagging system does not represent CWTs and is not reported to RMIS. This explanation is posted on the RMPC website.
- Nez Perce Tribe (NPT) confirmed it is no longer submitting recovery data to RMIS.
- Locations: Historical orphaned locations (including WBOs) were identified as needing cleanup and archival. A significant number of locations are not associated with data and may be candidates for cleanup.

Locations

It is believed that all locations necessary for Coded Wire Tag (CWT) validation and processing purposes appear to be present. For locations, an older last validated date does not necessarily indicate missing or incomplete location data sets.

Locations In Database	39,684
Associated with data	25,542
Not Associated	14,142
Would-Be-Orphaned (WBO)	390

Agency	Year	Submitted	Not Associated	WBO
Washington Department of Fish and Wildlife (WDFW)	2026	14,971	6,159	17
Fisheries and Oceans Canada (CDFO)	2026	9,654	415	345
Alaska Department of Fish and Game (ADFG)	2026	8,637	5,423	28
Oregon Department of Fish and Wildlife (ODFW)	2025	3,510	1,060	0
California Department of Fish & Wildlife (CDFW)	2026	1,754	1,019	0
National Marine Fisheries Service (NMFS)	2020	448	34	0
Idaho Department of Fish and Game (IDFG)	2023	347	31	0

Action Item:

- Dan will provide ADFG with a list of orphaned/WBO location codes; per request, he will also send lists to CDFO and WDFW to support cleanup and archiving.

- Releases: Most agencies are current on submitting releases, but several have not consistently met the January 31 deadline for prior year releases. Agencies with outstanding 2025 release data were noted (see Dan's briefing). RCMT member indicated that Little Port Walter may no longer be operating, and that RMPC staff should check with NOAA.

  Action Items:
  - USFWS will review release reporting status and update the database as needed. USFWS will check and submit any missing 2025 release data.
  - Dan will follow up with NMFS to confirm Little Port Walter release reporting status.
  - Marianne will check on 2024 CRITFC releases. There are no releases for 2020, 2024, and 2025
  - Yvonne will check on missing 2025 releases from USFWS

- Recovery: 2023 and older recovery data are expected, with some agencies still pending. Potential gaps in recovery (non-escapement) data were noted for CDFW (2023, 2024, 2025 non-escapement), IDFG (2024), USFWS (2023, 2024), and YAKA (2021–2023, 2024 shows as pending). National Marine Fisheries Service – Northwest Region (NMFSNWR) confirmed it will not report non-escapement data after 2022 as these will be reported by other agencies; recovery reporting for 2023 onward is expected from CDFW, ODFW, and WDFW.
  - **NOTE for CDFW Recoveries**: The data gap for Run Years 2023, 2024 & 2025 is the result of No Commercial Fisheries due to drought and poor escapement.

Action Items:

- Ash will follow up with QDNR regarding non-escapement recovery data.
- Yvonne will check with Dan on USFWS recovery submissions for 2023–2024.
- Dan will follow up on missing YAKA recoveries (new contact: Vaughn Gilmore).

- Catch Sample: CDFW has two outstanding historical errors requiring cleanup. A QDNR catch sample error for 2024 was identified. YAKA also has catch sample errors pending cleanup (contact: Vaughn Gilmore).

Action Items:

- Dan will send the 2024 QDNR error log to Ash to look at resolving the error.
- Dan will coordinate with YAKA (Vaughn Gilmore) to resolve outstanding catch sample errors.

- Data Gaps: The committee discussed ways RCMT could help address unreported data. Some options may be to have agencies provide hatchery tagging information and/or summary marking and tagging reports to help reconcile missing RMIS data and support data completeness. The committee didn't make a recommendation at this time.

Item: Other RMPC Announcements

RMIS Controlled Vocabulary

The effort is intended to standardize terms and definitions of data elements and fields and document variations in definitions. It serves as the successor to the Blue Book and began in spring 2024 with TCDS committee working groups. Work on the Recoveries and Releases sections has been completed, and the Catch/Sample section is approximately halfway complete. This section will be reviewed at the next TCDS meeting, scheduled for April 22–23, 2026.

Fishing Regulations DB Update

This update reflects incremental progress since the project started in 2023. Funding is secured through 2026. The team is working with state agency partners, and the project will soon enter a review phase. The current focus is on mark-selective fisheries for coho salmon, covering the years 2009–2015 for Oregon, Washington, and Alaska. Recovery data are being captured at finer spatial resolution than RMIS, including latitude and longitude, enabling queries by regulation, location (including HUC codes), and RMIS recovery records. The project includes a tabular regulations database, a geodatabase, and associated polygon layers. Work is now shifting toward a modular data system approach and integration of recovery data from RMIS. Development is also underway on a regulations AI component, with preparation to test the geospatial functionality using a SQL Server enterprise database. A streamline dashboard prototype was demonstrated,

showing how PDF regulation folders are processed through a Python pipeline and combined with QA/QC steps. Initial testing using manually compiled data has achieved approximately 40% accuracy, with a target of 80%. Errors typically cascade across categories (e.g., incorrect locations), reinforcing the need for ongoing human QA/QC. The next phase will focus on ingesting new regulations and expanding post-season review summaries. The team is targeting an April 1 implementation of the regulations AI/LLM tool and is working with consultants to improve accuracy through prompt engineering and supporting documentation. Jordan Miller is leading development of the GIS layers and has completed the creation of regulatory layers, which reference the tabular regulations database and map associated RMIS recovery data.

- How is the project addressing spatial mismatches at the state level?
    - The Fish Reg team is moving away from a purely polygon-based approach and toward a model similar to WDFW's, using features that are unique by species and other attributes. RMIS recovery codes are being aligned as closely as possible, followed by post-processing and review by subject-matter specialists. Because RMIS lacks angler-specific data (e.g., effort), the system will use watershed-boundary polygons at the HUC scale, with associated tabular data for analysis.

Juvenile Fish Trap Discovery Tool

The effort began in 2024 as a dashboard focused on screw-trap operations in the Columbia River Basin and has since expanded geographically and functionally. Interest now includes Puget Sound, the Klamath Basin, and the Oregon Coast, with participation from a multi-region fish monitoring work group using the SDDT template. The tool supports collaborative monitoring by showing when and where traps are operating seasonally and what species are being collected. While originally focused on juvenile salmonids, the scope has expanded to include Chinook, lamprey, and other bycatch species. The tool is being linked with the Columbia River Basin fish layer and PTAGIS and is being developed in coordination with QW Consulting, with a target delivery timeframe of mid to late summer. The project supports broader monitoring-resource discovery by identifying where traps are located and what data are being collected, an area of interest to Bonneville Power Administration. Sam noted that contacts for the Juvenile Fish Trap Discovery Tool are available and suggested checking the Pacific Northwest Aquatic Monitoring Partnership (PNAMP) monthly newsletter for updates.

- Discussion included mention of the SDDT that served as a template for the technology stack and approached used for the new Juvenile Fish Trap Discovery Tool. Recommendation was made to contact the CRITFC CMOP to ask about adding a link to the SDDT https://cmop.critfc.org/datamart/ .

    Action Item
    - Monica/Sam to contact Charles Seaton, CMOP Coordinator cseaton@critfc.org to ask about added CMOP link to SDDT

2026 Emerging Technology Information Sessions (ETIS)
PNAMP and StreamNet staff are collaborating again to host an in-person ETIS event in the Fall of 2026. The meeting is scheduled for October 26-28, 2026 at Skamania Lodge, Stevenson, Washington, USA. ETIS brings together monitoring professionals, project managers, data collectors, data managers, and data consumers from all over the world to showcase the latest technologies and innovative techniques in ecological monitoring. For details about the event, registration, and submitting an abstract see Emerging Technologies Information Sessions - Pacific Northwest Aquatic Monitoring Partnership

Item: All Agency Updates

Link to the All-Agency Update Document: AgencyUpdate2026.pdf

WDFW / Washington Dept. Fish & Wildlife 2025 Tagging Levels, Marking Plans, Special Requests, Comments:

- No changes since last year

CRITFC / Columbia R. Intertribal Fish Commission 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
The Hanford project may be discontinued due to Department of Energy (DOE) security rules that prevent overnight staffing, which is necessary for fish holding, tagging operations, and use of the on-site tagging trailer. Security requirements and ongoing staff shortages were identified as major challenges. Paul currently manages the manual tagging trailer at the site.

- Jillian C. asked when a final decision on the project will be made?
    - Currently working on staffing for the project.

CDFW / California Department of Fish & Wildlife 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
Overall tagging levels remain steady, with a slight decrease in Chinook production for Brood Year (BY) 2025. Coho production was strong in BY 2024 but is lower for BY 2025. Stan reported that Feather River operations have shifted to tagging 100% of 3-millimeter spring Chinook, replacing the previous practice of tagging 50% of 2-millimeter fish. Genetic sampling is being used for fry that are too small to be tagged.

ADFG / Alaska Dept. Fish & Game 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
Overall operations remain largely unchanged. Approximately 1.8 billion salmon are released annually, the majority of which are pink and chum salmon. Chinook are released at approximately 10 millimeters, and coho at approximately 30 millimeters. The program now operates two automated tagging trailers. Southern Southeast Regional Aquaculture (SSRA) in Ketchikan and Douglas Island Pink and Chum, Inc. (DIPAC) in Juneau have both

implemented mass marking of Chinook salmon, with SSRA beginning in 2022 and DIPAC in 2023. Other operational practices remain standard.

USFWS / U.S. Fish & Wildlife Service 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
A flooding event at Warm Springs clogged intake systems and affected Brood Years (BY) 2024 and 2025, both of which have already been released. As a result, there will be no fish available for release next year. At Coleman Hatchery, a large experimental release of fed fry was conducted, using parentage-based tagging (PBT) only, with no CWTs. At Makah Fish Hatchery, coho salmon were released with 100% marking through late June, and results are still under evaluation.

NWIFC / Northwest Indian Fisheries Commission 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
Counts include WDFW marking and are generally consistent with last year. Chinook production is approximately three million fish lower than the previous year, while coho numbers remain about the same. Mass marking continues at 100% for steelhead on the Quinault and Queets Rivers, with releases of approximately 500,000 and 600,000 fish, respectively.

NMFS / National Marine Fisheries Service, Alaska 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
No updates

IDFG / Idaho Dept. Fish & Game 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
Operations remain largely consistent with last year. Approximately one million fish were lost from Rapid River due to power outages. Production shortfalls are being backfilled from another hatchery, and marking remains at 100%.

MIC / Metlakatla Indian Community 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
All relevant numbers are included in the ADFG summary documents. MIC now reports through ADFG, and details can be found in the corresponding ADFG documentation.

ODFW / Oregon Dept. Fish & Wildlife 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
Operations are largely consistent with last year, with increased production of both spring Chinook and coho. An additional automated tagging trailer has been acquired, and all fish will be marked using auto-trailers this year.

YAKA / Yakama Nation 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
No updates

CCT / Colville Confederated Tribe(s) 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
See supporting documents

CTUIR / Confederated Tribes Umatilla 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
See supporting documents

NPT / Nez Perce Tribe 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
No updates

MAKAH / Makah Tribe 2025 Tagging Levels, Marking Plans, Special Requests, Comments:
No updates

Item: Update on PSC Data Exchange Projects & 2026 Work Plan
PSC has reduced meetings to one in-person meeting per year, and the PSC workplan travel budget will be adjusted accordingly. New change requests are being collected and will be addressed in version 5.1, with the possibility of a one to two-year gap between future updates. A new TCDS guidance document drafted for the PSC Secretariat, developers, and users was released in December 2025 and provides standards for coding, documentation, and application development.

- CRITFC asked if the PSC is developing standards for AI use.
    - Formal guidance is not yet available, but Pacific Fishery Management Council (PFMC) and PSC are developing recommendations. Nancy has communicated to PSC that PFMC is developing AI guidance and encouraged them to coordinate together given there is overlap in the participants of PSC and PFMC.

The 5.0 version of the data specification is scheduled to be active next week. Catch Sample data for ADFG and CDFO were identified as special cases and will require RMIS data to be resubmitted; these specific records will not be converted by the RCMT as part of the 5.0 release.

- NWIFC asked which entities are now submitting expanded location data now that this (recently-expanded) field allows for it.
- CDFO may resubmit some locations, though this has not yet been confirmed.

The RMPC has been working on CWT data specifications and AI modernization efforts. Plans for next year's work include database and data warehouse architecture changes, further expansion of RMIS API functionality, and enabling data submission through the API. The current version of the RMIS API supports data retrieval only, but future work will revisit the interface to allow data submission with full CRUD functionality and a standardized

query language. The current version of the RMIS API has been successful, with more than three million hits over the past eight months.

Day 2: Wednesday March 25th, 2026

Item: PBT/GSI Tech in the Snake River Basin

IDFG uses Genetic Stock Identification (GSI) and Parental-Based Tagging (PBT) to monitor Chinook salmon and steelhead in the Snake River Basin. PBT allows parentage to be traced back to hatcheries or broodstock, permanently tags all offspring without handling juveniles, and supports non-lethal recovery. GSI uses population-level genetic baselines to group similar populations into genetic stocks and track returns.

Fish Gen (FG) was established to store genetic data and monitor long-term trends, including identifying where Snake River steelhead are caught in Columbia River fisheries. These tools support estimating abundance by genetic stock and distinguishing truly wild fish from unmarked hatchery-origin fish. PBT improves abundance estimates compared to PIT tags, which previously covered only about 65% of returning fish. The Fish Inventory System (FINS) database is used to link PBT groups to release sites and track hatchery strays. Managers are also exploring extended PBT (grand-parentage) to better understand hatchery gene flow into wild populations, a capability not captured by the proportion of hatchery-origin spawners (pHOS) alone. CRITFC applies similar methods in the Columbia River Basin.

- **USFWS:** Would higher effective pHOS from some kinds of fish be less detrimental to conserving wild genetics?
    - It depends on management goals. Sampling both returning and spawning fish with PBT can help evaluate whether contribution targets are being met.
- **PSMFC:** Is sex determination being used for all species?
    - A genetic marker is used for sex determination and is effective for most species. Sockeye salmon are an exception and require additional validation methods.
- **CRITFC:** What would a shared PBT baseline look like, and how could it be implemented at scale?
    - FINS can already store PBT data and support parentage and grandparentage analyses at the required scale. Expanding this would require full PBT coverage across hatcheries and consistent data entry, though cost remains a major constraint.
- **ADFG:** Is survivorship bias a concern when interpreting effective pHOS results?
    - Yes. pHOS provides proportional estimates, while PBT offers additional resolution. Both metrics are needed, as differences in survival between hatchery and wild fish can influence observed proportions.

Item: PSC SFEC (Selective Fishery Evaluation Committee) Update

An overview of mass-marking numbers for coho and Chinook salmon was presented (see slides for details). Double-index tag (DIT) tagging programs remain focused on Chinook and some coho to support fishery evaluation needs, and DIT tagging is not currently being promoted for Chinook salmon. No new coho mark-selective fishery proposals were reported, while one new Chinook mark-selective fishery proposal was noted for the IDFG Snake River sport fishery. New Calendar Year Exploitation Rate (CYER) requirements for Chinook were discussed, including separate accounting for retained and released catch by mark status. A recommendation was made to review and re-evaluate release mortality rates for both Chinook and coho salmon.

Item: FishGen Data System

Jessie McCain (PSMFC-IDFG) provided an overview of FishGen.net, a basin-wide genetic data repository developed in response to IDFG's early-2010s recognition of the need for a centralized system to support emerging technologies such as Single Nucleotide Polymorphisms (SNP), and needing a single online genetic data repository. Research Data Inc (RDI) worked with PSMFC to develop FishGen, and the project was funded by Pacific Coast Salmon Recovery Fund and Bonneville Power Administration. FishGen was designed as a final, authoritative repository for raw genetic data and supports standardized data formats, definitions, and validation rules. Data is organized into collections representing fish sampled from a specific location, single day, or time-range that could be an entire fish run. The system includes a full GIS interface with required latitude and longitude metadata, allowing users to search, filter, and export data spatially. Saved datasets can be created on upload or from uploaded collections. These datasets are given a Unique Identifier (UID) that can be used for publications as well as allows for download of that dataset, as immutable snapshots of selected collections. FishGen focuses on storing raw genetic markers rather than analytical results, with the exception of hybridization studies for species such as cutthroat, rainbow, and bull trout. FishGen is intended to be a final repository of raw genetic data and is not intended for preliminary or changing data. The platform has been operational for over a decade with annual updates and includes contributions from multiple laboratories, including IDFG's Eagle Fish Genetics Lab, CRITFC, WDFW, and NOAA Manchester. Recent enhancements include support for microhaplotype markers, a new type of SNP, and migration of the system to a Microsoft Azure cloud environment.

- Still working with Research Data Inc (RDI)?
    - Yes, and they are maintaining the database. Labs use software called Progeny – commercial software; there is now no central online database.

Item; Scoping PBT Data Exchange

Past RCMT meetings have discussed the long-standing concept of incorporating PBT and GSI data into a regional data system and connecting to RMIS. PSMFC has pursued internal funding to advance this effort and discussed the need to identify which additional data fields and controlled vocabularies would be required to support genetic data alongside

existing CWT records. The next step is to convene a small scoping group to outline participants, define required fields, and map how genetic data could connect to RMIS. FINS and FishGen were identified as useful reference systems for linking hatchery, release, and genetic information. The technical and organizational conditions now exist to move this work forward after approximately a decade of discussion.

- Updates on this task?
    - RCMT can provide an update at the October meeting. Brian (IDFG) requested to remain informed as the work progresses.
- Is there an effort to standardize genetic markers?
    - A similar effort occurred around 2005, focused on developing genetic baselines. For ocean sampling, CWTs can be used for hatchery fish, but non-hatchery fish must be sampled for GSI.
- **Is this effort limited to the Columbia River Basin or Snake River?**
    - No. The intent is broader in scope. Coordination with Canadian partners is anticipated, including work by Terry Beacham (BC) and ongoing efforts in Canadian laboratories, as well as contributions from Eric Rondeau.
- **How does PBT compare to CWT?**
    - PBT and GSI provide different types of information than CWTs and are used to answer different questions, though there is some overlap. CWT remains a coastwide, two-stage sampling system and RMIS will continue to function primarily as a CWT database. The goal is to develop a centralized system that accommodates PBT and GSI data as complementary data types to CWT.
- **What data fields are needed (e.g., broodstock origin, geographic scope), and how would workgroups be formed?**
    - Past efforts gathered input from users to identify needed data elements, followed by collaboration with data experts to define specifications. This process should remain user-driven, similar to approaches used by PNAMP Fish Monitoring Workgroup.
- **How do FishGen and the FINS differ?**
    - FishGen is used to compare genotypes and identify baseline genetic matches. Once a genetic match is identified (e.g., a Dworshak fish), FINS can be used to obtain additional information such as life history and morphology. The key linkage is the genetic identifier connecting FishGen baseline data to FINS. FishGen is a fully public database. IDFG has made the most progress in implementing and standardizing PBT use.

<u>Item: Expedited Hatchery Reporting Discussion</u>

RCMT members discussed whether hatchery release data could be reported to RMIS more quickly and identified ongoing challenges with delayed submissions, which can affect tagging analyses, fisheries management decisions, and PSC reporting timelines. Release information is sometimes unavailable in RMIS when needed for pre-season planning, due in part to reporting lags and unresponsive or transitioning agency contacts. The group

noted that this issue has been discussed for many years and emphasized the importance of focusing outreach on agencies experiencing persistent delays rather than creating new reporting systems. RMPC staff continue outreach to agencies, though identifying successors remains difficult.

Options for improving data timeliness are summarized below, although there is a need to continue to explore how to improve release reporting timelines/timeliness:

- Use the RMIS "unresolved_reason" field to clearly flag recoveries that lack associated release records, allowing analysis to proceed without waiting for full release reporting.
    - Flag preliminary or incomplete release records during tag code searches, so users understand data limitations.
- Create a Known Good Tag status release type that lets you associate recoveries with those records. Then you could just update the release records. The associated recoveries would remain linked, and the agency would not need to resubmit recoveries.
    - Could you use the new RMIS field "unresolved_reason" to solve this same problem? - It would keep the releases and recoveries more separated, so you aren't waiting for releases to get recoveries in.
- Provide automated validation messages or notifications to agencies when recoveries with unresolved status appear to have corresponding release information.
    - Suggested one of the validation messages being "Your agency recovery records with status 7 and unresolved_reason now have a potential associated status of 1."
- Leverage RMIS data integrity reports as a coordination tool to identify and resolve reporting gaps in a timely manner.
    - Suggestion that this starts with some type of status report that tells agencies how many status 7s there are and checks if the tag coordinators and release agency can resolve this.
    - When releases are updated, the associated recovery data sets are still not updated to a status 1 until the agency resubmits all their recovery data to correct this.
- Suggestion to track fish that are handed off to release facilities, so we can tell who still needs to be contacted to report them. This would help identify which agency is responsible for reporting the final release.
    - Like the FINS outbox and inbox – allows you to see where there are tags missing
    - Who/Why are they not reporting the Releases?
        - It should be the last agency that handled the release event that should report it.
- Use summary-level release information to indicate expected releases while detailed records are still pending.

- Focus targeted outreach on agencies with repeated delays rather than creating new reporting systems or tables.
    - Suggestion to work with agencies that are not reporting releases on time to solve one part of this problem. Note: a pre-RCMT meeting with the data providers to review submitted data is planned to resume next year; it was not held for 2026 due to the V5.0 project.
    - What is the current lag in reporting? Depends, we should work on getting those releases faster.
    - Can we use the summary release info in tandem with this so you can see how many fish were marked/tagged that you are waiting on.
- Continue exploring longer-term solutions, including row-based recovery reporting in future RMIS versions.

Action Item:

- RMPC Staff to continue exploring approaches to improve reporting of releases, including direct check-ins with lagging agencies, and informing RCMT agency members.

Item: RMPC & RMIS Logo Updates

Draft RMPC, RMIS, and FishRegs Logos were reviewed (see slides). Group feedback emphasized improving visual clarity and design balance. Including the suggestions below:

- Reducing the use of a single-color tone and incorporating more graphic elements.
- A map should not be used for the FishRegs logo and recommended using a hook-and-net concept instead, with the net graphic made to look more realistic.

Action Item:

- RMPC coordinator will work with the graphic designer to produce revised logos and share with the RCMT for further input.

Day 3: Thursday March 26th, 2026

Item: Regional Coordination of Marking & Tagging: Operating Guidelines

RCMT Regional Coordination of the Coast-Wide Marking and Tagging of Pacific Salmonids: Operating Guidelines document was finalized in 2026 and is available in the documents section of the RMPC website (see link below). The guidelines include an objective on exploring new technologies, identifying potential new data categories for inclusion in RMIS, promoting consistent data collection and reporting standards, and improving the timeliness of data acquisition and reporting across agencies.

Document Link: https://www.rmpc.org/wp-content/uploads/2025/12/2025-RCMT-Operating-Guidelines_Adopted.pdf

Item: Discussion of Tasks for RCMT/PSMFC

Marking and Tagging Data Entry Modernization

Agencies discussed improving on-site data entry during marking and tagging, with the goal of getting data into agency systems more quickly for eventual submission to RMPC.

- ODFW is developing a multi-tab data entry sheet to track fish across ponds and raceways by mark group and mark status, including group transfers, dates, rearing conditions, and mortality.
- NWIFC described a tablet-based data entry system built on SQLite (rather than Survey123), which captures data by session or day and exports a CSV file to the tag coordinator. It does all calculations, tag retentions, drill-limits to all/only relevant hatcheries, etc. The exported excel file is sent by email. The field crew is using cellphones with a hotspot to send emails. The tablet is used only for data entry, and the emailed file is imported into the database. The system is 75% built, and they are working on how to deal with the wire samples (i.e. brood year, stock, hatchery). The focus is on getting away from all the paper handling. "Real-time" submission was considered impractical, but near-term transfer was effective. NWIFC tracks data by release group and noted similarities with ODFW's approach.
- WDFW is working on a data entry form to track fish across ponds by mark group type, and Gabe G. can share this form with Trevor.
    - Can the Fish ID crews put in the data, so the hatchery doesn't have to do this? WDFW reported that it is developing a new Hatchery Management System integrated with a new CWT/marking database. The system will support tablet and desktop entry but has been in development for several years and is still ongoing.
    - ODFW Easten Oregon is using tablets and Esri software (Survey123) to capture hatchery data and submit to FINS system. Contact Kasey Blisener /Eastern ODFW for details.
- Agencies discussed challenges with limited internet connectivity at hatcheries; most rely on local Wi-Fi or cellular hotspots.
- NMT noted that auto-trailers are closed systems with internal security controls, and external connectivity may raise security concerns.

- ODFW emphasized the need to reduce reliance on intermediaries and capture marking and tagging data earlier than release, to better track interim mortality and improve final release estimates.
- Use of StarLink? Is very inefficient, possibly insecure.
- IDFG asked why immediate data upload (same-day or sooner) is necessary.
    - ODFW explained that the goal is to eliminate the "middleman" and submit data directly to the agency. Currently, marking and tagging data are not captured until the time of liberation or release, which makes it difficult to track in-process mortality and accurately calculate final marking and release numbers. ODFW emphasized the need for a system that enables earlier data capture without adding unnecessary complexity.
    - NWIFC suggested that if tag distribution decisions are made in advance, agencies could enter that information earlier in the process, which ODFW agreed could be feasible.
    - NMT suggested exploring earlier tag inventory tracking methods, such as using QR codes on tag boxes linked to spreadsheets, and noted that reducing manual data entry would improve efficiency and data accuracy.

Fish Health Screening and Disease Prevention/ Vaccination

- ODFW asked how agencies detect disease prior to marking and tagging, noting instances where fish mortality occurs despite no laboratory detection.
    - ODFW noted instances where the Pathology department did not detect disease, yet fish mortality still occurred, raising concerns about underlying causes. In these situations, the laboratory and auto-trailer processes are often blamed. ODFW suggested the need to revisit and adjust current practices, including conducting pre-health checks several days before tagging. Others noted that it may be worthwhile to engage the Pathology Department staff more regularly so that they understand the existing system and operation.
    - ODFW noted that disinfection procedures are sometimes performed between species and follow long-established, highly specific protocols that have been in use at agencies for many years.
    - NWIFC described similar protocols involving fish health pathologists reviewing each batch shortly before tagging, double disinfection when disease is detected, and rapid coordination with fish health staff when mortality increases are observed.
    - WDFW indicated they have similar process as NWIFC
    - Participants discussed the need for earlier health checks and potential adjustments to long-standing disinfection protocols.
- ODFW asked about technologies for vaccinating fish prior to tagging.
    - NMT reported that injection-based vaccination systems currently work only for larger fish and are costly; advanced systems exist internationally (e.g., Norway, Canada, Chile).

- NWIFC and WDFW currently vaccinate fish via dipping at the trailer.
- NMT noted exploratory work on time-release vaccine tag concepts aimed at improving survivability under increasing temperature and disease pressures.

Biological Data and Age Composition

- CRITFC raised the question of establishing a central clearinghouse for age composition data, particularly in light of CTC's move toward a statistical catch-at-age model for 2028. CRITFC takes scale samples, but this information isn't sent to RMIS.
  - Most agencies store scale and age composition data internally, and these data are not standardized.
  - ADFG suggested age data could potentially be associated with Catch/Sample records to increase sample sizes. The issue is at what level of detail you can define it.
  - The group agreed that RCMT should scope this issue further, define data requirements (estimated at 5–6 fields), and determine whether RMIS is an appropriate home for these data. Marianne will follow up with CTC. If not accepted by Canada into the bilateral data specification it may be fine to have these data go into RMIS but not have it as bi-lateral (PSC) fields. Marianne will check with CTC further on this.

Coordination and Knowledge Exchange

- Participants suggested exploring a workshop format—potentially with PNAMP support—to share tools, evaluate emerging technologies, and improve data standards and integrity.

Action Item:

- Marianne will bring up the suggestion to scope out how to incorporate biological data and age composition data to RMIS with the CTC to assess if the CTC wants to submit a request to the TCDS.

Item: NMT Technology Update

Geraldine retired in October, and Austen Reiter has been hired to fill the customer service position.

AutoFish was developed as a collaborative effort among NMT, WDFW, and Bonneville Power Administration (BPA). Jeff Grible, the original AutoFish trailer operator, is now deceased.

NMT has posted new How-To videos for operating AutoFish trailers on its website, with additional videos planned.

Autofish Trailer Status:

- By this time next year, approximately 65 AutoFish trailers will be in operation across the U.S. (from New York to Southern California) and Alaska.
- Recent additions include new trailers for ODFW and the Hoopa Tribe (CDFW); WDFW is refurbishing an existing trailer.
- Software updates for AutoFish are largely complete, with minimal changes expected going forward.

Camera and Hardware Improvements:

- A new **digital 4K camera system** improves visibility of the adipose fin as fish enter the clamps and reduces mechanical components by keeping water off the lens.
- Four trailers will use the new camera this marking season (two at NWIFC, one at ODFW, one at WDFW), and new CDFW trailers will also include this upgrade.

CWT Reader Project:

- The CWT "Reader" project — designed to automatically read tags and populate data — was temporarily paused due to higher priority internal NMT technology work.
- The project is expected to resume once the internal work is completed.

Tag Code Issue (186846):

- A recovery of Canadian tag code 186846 was reported at Fall Creek Hatchery (Klamath Basin) before Canada had put the code into use.
- NMT traced the issue to a manufacturing error involving a kinked spool that was inadvertently remade into two batches, one with an incorrect sticker.
- The affected code has been destroyed, flagged in the system, and will never be reproduced.
- The recovered fish is undergoing genetic scale analysis to determine origin, and CDFW and CA agencies are checking their tag inventories.
- Discussion: Whether to report this tag in RMIS.
    - CDFW: Recommended waiting until more information is available and reporting only if the tag is confirmed to have been released by CDFW.
    - PSMFC: Agreed to wait for confirmation before action.
- NMT emphasized that this is a very rare occurrence, with only one recovery reported to date.

CWT Pricing:

- Are there plans to increase CWT prices given increases in cost of metals etc. ?
    - NMT: No price increase is planned. NMT is committed to keeping prices stable, and tag prices are fixed at the time of order regardless of delivery date. Although tungsten prices have increased significantly, NMT currently has sufficient supply and does not anticipate short-term impacts on tag pricing.

Item: 2027 RCMT Annual Meeting Planning

RCMT will be 50 years in 2027!!

Suggested topics included vaccines, electronic monitoring, and process bottlenecks related to data entry.

- PSMFC noted that some of these topics may fall outside RCMT core expertise or scope.
- CRITFC: Depending on where the next meeting is, Marianne can ask if the YAKA supplementation group can join - will coordinate with Ash.

NWIFC relayed ongoing PSC concerns regarding low recovery numbers, which have led to criticism of the CWT system. Current recovery rates may be due to lower survival, declining from historical levels of approximately 10–15% to around 2% today. The group noted the need to work with biometricians to evaluate whether increased marking and tagging levels are warranted and to better align tagging effort with analytical requirements, including determining the number of tags needed to achieve defined analytical objectives.

- CRITFC stated that needs may vary by indicator stock and suggested starting with those stocks.
- CRITFC also noted past work by Gary M. on a scoping program to estimate required tagging levels, though CTC users found it difficult to use; refurbishing this tool was suggested.
- NMT emphasized that tagging costs should not be the limiting factor and noted willingness to explore cost support if needed. Historically, similar analyses were conducted during periods of low Chinook survival, and NMT has previously provided free tags in limited cases. Most fish are now mass-marked using AutoFish; CWT-only marking is the fastest method, while ad-CWT and clip-only approaches require more time but are now more cost-effective than in the past.

ODFW asked whether agencies could standardize a barcode on CWT wire spools to allow scanning rather than manual entry. Interested in the RCMT coordinating, what type of bar code that NMT could put on the boxes of wire shipped out

- NMT is willing to support a smaller meeting, potentially involving ODFW, WDFW, and NWIFC, focused on a specific topic that falls within NMT area of work/expertise, such as developing a software process to auto-build a data file /spreadsheet. Participants would include Lara (PSMFC) and tag coordinator representative from WDFW, ODFW, NWIFC.
- NMT responded that boxes already include a barcode with tag code, quantity, and length. NWIFC added that current boxes include a general QR code with date, tag code, and tag count (see image below), which may already provide needed information. Gabe will follow up and test feasibility; NMT offered to provide sample boxes for evaluation.

Figure 1: NMT label with QR code

WDFW noted it is hosting the Northwest Fish Culture Conference in Vancouver, with registration opening in June.

PSMFC invited participants to submit additional topic suggestions as they arise.

Action Items:

- Marianne can ask if YAKA supplementation group can join the 2027 RCMT meeting, and will coordinate with Ash.
- NMT /Dave: is willing to support a smaller meeting, potentially involving ODFW, WDFW, and NWIFC, focused on a specific topic that falls within NMT area of work/expertise, such as developing a software process to auto-build a data file/spreadsheet. Participants would include Lara (PSMFC) and tag coordinator representative from WDFW, ODFW, NWIFC

Item: RCMT Status Update Fall Meeting

The group discussed whether to hold a short Fall Status Meeting (approximately two to four hours). NWIFC suggested instead holding a brief, separate meeting focused on planning for the 2027 annual meeting. Another option discussed was to send an email in September to assess interest in convening a meeting in October if needed, potentially Oct 26-29.

Action Item:

- Fall Update Meeting: Nancy will send out an email in September to check if there are topics that have come up and see if people want to meet in October.