

**WETLANDS PROGRAM PLAN (WPP) FOR THE
RESIGHINI RANCHERIA, 2020-2025**

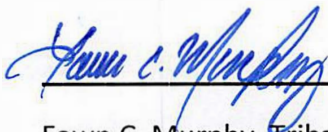


July 2020

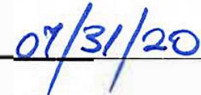
WETLANDS PROGRAM PLAN (WPP) FOR THE RESIGHINI RANCHERIA, 2020-2025

Prepared by Bradford R Norman, Wetlands Program Coordinator, Resighini Rancheria, Klamath, CA.

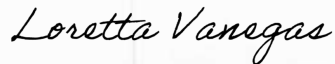
Approved By:



Fawn C. Murphy, Tribal Chairperson, Resighini Rancheria



Date



Loretta Vanegas, CWA Project Officer, US EPA Region 9

08/03/2020

Date



Leana Zang-Rosetti, Life Scientist, Wetlands Office, US EPA Region 9

8/3/2020

Date

WETLANDS PROGRAM PLAN (WPP) FOR THE RESIGHINI RANCHERIA, 2020-2025

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1. OVERALL WETLANDS PROGRAM PLAN (WPP) GOAL STATEMENT.

To enhance, evolve and generate improved capacity of the Resighini Rancheria Wetlands Program, 2019- 2025.

2. OVERALL TIMEFRAME. The overall timeframe that this WPP covers extends from Fiscal Year 2019-2020 through the Fiscal Year 2024-2025 (six years, inclusive).

3. LIST OF PLANNED ACTIONS CONSISTENT WITH THE CORE ELEMENTS FRAMEWORK, TO ACCOMPLISH THE OVERALL WPP GOALS.

ACTION 1) Maintain CRAM Assessments at a sub-set of wetland sites contained within the Wetlands Inventory presently at hand as of December 2018 on the order of 10 per year, and then on a rotational basis. Core Element 1. The sites will be selected randomly from the Wetlands Inventory of December 2018 each CRAM sampling season (using CRAM protocol May through August each year) either by a random selection process and/or a sequentially rotating process, but also until all Wetlands Inventoried Points are included in the sampling set before any sampling site is repeated in the process. A rotating sequential system is probably preferred as the sites are already listed randomly within the Wetlands Inventory of December 2018 (Norman, Wetlands Program, personal observation, 2018) (see Appendix 1).

ACTION 2) Review and Refine the Existing QAPP approved by EPA Region 9 Office in June 2018, which will need to be reviewed and refined, as needed. Core Element 1.

ACTION 3) Maintain Water Quality Monitoring Data Collection Efforts bi-monthly and water quality monitoring database through periodic updates, while expanding program capacity with new state-of-the-art water quality equipment and multiple tests of water quality parameters, such as Total Hardness, Nitrates, Nitrites, Phosphorus, etc. Core Element 1. The sampling sites for this ACTION would concentrate on those already listed in the Resighini Rancheria Clean Water Act 319 Sampling Action Plan (CWA 319 SAP), which was revised in December 2018 (Dowd & Norman, 2018; approved by Region 9 US EPA ca. November- December). Other water quality sampling sites that are in the Wetlands Inventory of December 2018 would be sampled in addition, concentrating on the larger known wetland sites listed in the Wetlands Inventory (Norman, Natural Resources Department, Resighini Rancheria, 2018).

The inclusion of these other wetland sites would be prioritized depending upon ease and immediacy of accessibility, testing equipment and personnel availability, overall wetland size and a

possible rotating component through the Wetlands Inventory already in place. A random component - including testing of different but with continuously repeating sub-sets of sampling sites - could also be employed. An effort should be made to include all inventoried wetland sites over the course of this plan, and multiple seasonal test sampling is preferred for the previously inventoried wetland sites aforementioned.

ACTION 4) Conduct Continued Refinements to Bio-assessments of selected wetland sites within the Wetlands Inventory of December 2018. Core Element 1. A rotationally all-inclusive sampling of sites within the Wetlands Inventory, as in ACTIONS 1 and 3 above, would be deployed.

ACTION 5) Invasive Plants Program initiated that studies and plans eradication treatments, as well as produces maps of invasive plant species known to be present on the Resighini Rancheria land holdings with emphasis on wetland sites and wetland areas. **Core Element 3.** A rotationally all-inclusive sampling of sites within the Wetlands Inventory of December 2018, as in ACTIONS 1, 3, and 4 above, would be deployed.

ACTION 6) Engagement, Outreach and Community Education through engagement with the Tribal Council, Natural Resources Staff, the Tribal community to gather information to inform Wetland Science Program issues, water quality monitoring data-gathering and the databases maintained within the program. **Core Element 2, Action f.**

ACTION 7) Capacity Development will continue to be built in order to develop the Resighini Rancheria Wetlands Program capacity for continuous water quality sampling over time, with respect to climate studies, flood dynamics, fire protection and readiness, hazard analysis, Air Quality, etc., so as to integrate with the existing GAP program of the Natural Resources Department. **Core Element 1.**

ACTION 8) Conduct botanical surveys and develop an herbarium collection that documents the wetland and riparian forest species existing within the Resighini Rancheria wetlands. **Core Element 1.** A rotationally all-inclusive sampling of sites within the Wetlands Inventory of December 2018, as in ACTIONS 1, 4, and 3 above, would be deployed.

ACTION 9) Conduct Algae Sampling as part of the bio-assessments of freshwater algae and especially potentially toxic freshwater algal blooms in the Klamath River Basin. **Core Element 4.**

ACTION 10) Initiate a Watershed Restoration Program for the Junior Creek Wetland Complex, including culvert replacement projects and the control of excessive sediment deposition due to historic and on-going upslope logging. **Core Element 3.**

ACTION 11) Initiate a Bullfrog Control Program that studies, plans for, and attempts to control the populations of invasive American Bullfrog at the Resighini Rancheria wetland sites. **Core Element 3.**

ACTION 12) Building Capacity through Travel and Training by participating in regional and local scientific meetings, groups and national wetland-related groups, such as the American Society of Wetland Managers (ASWM), Trout Unlimited, the Salmon Restoration Federation, the Society for the Study of Amphibians and Reptiles (SSAR), the American Fisheries Society (AFS), the American Society of Ichthyologists and Herpetologists (ASIH), the CA/NV Amphibian Task Force, etc. **Core Elements 1 & 2.**

4. INTENDED SCHEDULE FOR THE ACHIEVEMENT OF EACH ACTION.

- i) 2019-2020. Action 1, Action 2, Action 3, Action 4, Action 5, Action 6, Action 7, Action 8, Action 10, Action 11, Action 12.**
- ii) 2020-2021. Action 1, Action 3, Action 4, Action 5, Action 6, Action 7, Action 8, Action 10, Action 11, Action 12.**
- iii) 2021-2022. Action 1, Action 3, Action 4, Action 5, Action 6, Action 7, Action 8, Action 10, Action 11, Action 12.**
- iv) 2022-2023. Action 1, Action 3, Action 5, Action 6, Action 7, Action 8, Action 9, Action 10, Action 12.**
- v) 2023-2025. Action 1, Action 3, Action 5, Action 6, Action 7, Action 10, Action 12.**
- vi) 2024-2025. Action 3, Action 5, Action 6, action 7, Action 10, Action 12.**

5. A LISTING OF MORE SPECIFIC ACTIVITIES TO BE ACCOMPLISHED UNDER EACH ACTION.

ACTION 1) Maintain CRAM Assessments: Conduct CRAM Assessments at a sub-set of wetland sites contained within the Wetlands Inventory presently at hand as of December 2018 on the order of 10 per year, and then on a rotational basis.

SPECIFIC ACTIVITIES: a) obtain and train 1-2 additional seasonal workers to assist in the CRAM assessments each summer; b) conduct the CRAM Assessments at 10 (ten) wetland sites each summer, on a rotating basis; c) seasonally log the CRAM scores into the On-line CRAM database each summer; d) maintain hardcopies and digital files of CRAM data-forms filled out each summer in the Wetlands Program Filing System.

ACTION 2) Review and Refine the Existing QAPP: Review and Refine the existing QAPP approved by the EPA, Region 9 Office in June 2018.

SPECIFIC ACTIVITIES: a) review Resighini Rancheria's Wetland Program Quality Assurance Program Plan (QAPP) which was approved by the EPA in June 2018; b) consult with EPA to provide possible additions and /or modifications to the QAPP; c) submit a revised draft of the QAPP to EPA; d) revise and obtain approval for a revised Wetlands Program QAPP.

ACTION 3) Maintain Water Quality Monitoring Data Collection Efforts :Maintain Water Quality monitoring data collection efforts bi-monthly and maintain water quality monitoring database through periodic updates.

SPECIFIC ACTIVITIES: a) obtain additional pH and Dissolved Oxygen loggers; b) install pH and Dissolved oxygen loggers at various wetland sites throughout the Resighini Rancheria; c) maintain the temperature loggers and stage gages that are in place at wetlands sites on the Resighini Rancheria; d) continue bi-weekly water quality monitoring using the various probes and test methods set in place in the 2018 QAP and water monitoring program; e) update the water quality

database on a periodic basis throughout the duration of this Wetlands Program Plan (WPP) . The periodic basis should be as soon as weekly or monthly, and no longer than quarterly.

ACTION 4) Conduct Continued Refinements to Bio-assessments: Conduct continued refinements to bio-assessments of selected wetland sites within the Wetlands Inventory of December 2018.

SPECIFIC ACTIVITIES: a) continue benthic- macro-invertebrate sampling at wetland sites throughout the Resighini Rancheria; b) refine bio-assessment methods as necessary in order to include small mammal and bat surveys; c) conduct soil invertebrate surveys at wetland sites; d) continue to add to and curate the biological voucher collection; e) continue Spring bird point counts and maintain a bird sighting database; e) continue monitoring amphibian breeding sites and maintain a database of observed amphibian occurrences; f) conduct fish sampling at wetland sites.

ACTION 5) Invasive Plants Program: Initiate a program that studies invasive plants at wetland sites, plan eradication treatments, and produce maps of invasive plant species known to be present on the Resighini Rancheria land holdings with emphasis on wetland sites and riparian areas.

SPECIFIC ACTIVITIES: a) conduct field surveys for invasive plants at wetland sites; b) GPS invasive plant infestations at wetland sites for mapping purposes; b) seek grant funding to research and plan invasive plant removal efforts; c) enact invasive plant removal efforts; d) monitor the invasive plant removal efforts.

ACTION 6) Engagement, Outreach and Community Education: Engage the Tribal Council, Natural Resources Staff, the Tribe, and the community overall to inform regarding Wetland Science Program issues, water quality monitoring data-gathering and the databases maintained within the program.

SPECIFIC ACTIVITIES: a) attend Tribal Council meetings and present summary presentations of data collected during wetlands surveys; attend Natural Resource Department and Staff meetings and present wetland data; c) prepare power-point presentations for outreach to Tribal and community members on wetlands program topics; d) participate in annual meetings to present wetlands program findings to Tribal members, the community and to local schools when presented with the opportunities; e) give presentations at regional wildlife meetings and symposia.

ACTION 7) Capacity Development Continue to evolve, maintain and develop the Resighini Rancheria Wetlands Program capacity for continuous water quality sampling over time, with respect to climate studies, flood dynamics, fire protection and readiness, hazard analysis, Air Quality, etc., so as to integrate with the existing GAP program of the Natural Resources Department.

SPECIFIC ACTIVITIES: a) seek grant funding to maintain the Wetlands Program staff salaries; b) conduct topical research via internet and library source regarding the wetland topics, flooding issues, and the topics listed above; c) seek grant funding to purchase a weather station to be set up at the Resighini Rancheria to record climate data over time that may be used in on-going climate and wetland studies.

ACTION 8) Conduct botanical surveys Continue to conduct botanical surveys and develop a herbarium collection that documents the wetland and riparian forest species existing within the Resighini Rancheria wetlands.

SPECIFIC ACTIVITIES: a) conduct botanical surveys at wetland sites using transect methods; b) collect wetland and riparian plant samples for a permanent herbarium collection; c) maintain the present herbarium collection and labeling of specimens; d) prepare a database of herbarium holdings; e) prepare an updated plant species list for the Resighini Rancheria; f) if any rare or endangered plant species are detected, seek grant funding to study the occurrences and conserve the plant diversity and rare species populations at the Resighini Rancheria.

ACTION 9) Conduct Algae Sampling: Initiate a capacity-extension of bio-assessments into freshwater algae and especially potentially toxic freshwater algal blooms in the Klamath River Basin, within which the entire Resighini Rancheria resides.

SPECIFIC ACTIVITIES: a) conduct EPA standard algae sampling surveys; b) obtain identifications on algal species present; c) determine if any toxic species occur in Resighini Rancheria wetlands; d) if toxic species occur provide for information to be relayed to local persons that may be exposed do to recreation uses at wetland sites; e) determine what algae species can inform the wetlands program in terms of bio-assessments and/or water quality.

ACTION 10) Initiate a Watershed Restoration Program: Initiate a watershed restoration program for the Junior Creek Wetland Complex, including culvert replacement projects and the control of excessive sediment deposition due to historic and on-going upslope logging, and long-term fisheries population enhancements.

SPECIFIC ACTIVITIES: a) seek grant funding for the assessment and planning of watershed restoration projects at the Resighini Rancheria; b) assess and plan and prioritize obtainable restoration goals utilizing EPA Proper Functioning Condition protocols; c) replace multiple malfunctioning culverts along the Junior Creek Wetlands Complex to assist in fish passage and maintain present amphibian breeding wetland habitats; d) monitor the results of completed habitat restoration efforts; e) conduct on-going digital photographic methods to monitor wetland sites over time; f) maintain a catalog of digital photographs of wetland sites over time.

ACTION 11) Initiate a Bullfrog Control Program: Initiate a program that studies, plans for, and attempts to control the populations of invasive American Bullfrog at the Resighini Rancheria wetland sites.

SPECIFIC ACTIVITIES: a) seek grant funding to conduct surveys for invasive animal species, especially the known present Asian Clam and American Bullfrog, at wetland sites at the Resighini Rancheria; b) conduct invasive animal species surveys; c) conduct sampling for amphibian disease in the local amphibian populations, especially chytrid fungus and Rana virus; d) plan an invasive species control (eradication) program on the already present American bullfrog population; e) carry out a bullfrog eradication project at Resighini Rancheria wetland sites; f) conduct a study on the predatory effects of the bullfrog population on any fish populations present at Resighini Rancheria wetlands using dissection of captured bullfrogs and a detailed study of the fish resources present at the Rancheria.

The American Bullfrog (*Lithobates catesbeianus*, formerly *Rana catesbeiana*) and the Asian Clam (*Corbicula fluminea*) are two freshwater invasive species already documented as occurring on the Resighini Rancheria, according to observations made during the 2018-2019 Wetlands Program studies funded by the US EPA (Wetlands Protection Initiative). Both species are considered highly invasive and globally widespread (Boersma, Reichard and Van Buren, 2006).

Other known invasive non-native animal species known to occur on the Resighini Rancheria include: 1) Largemouth bass (*Micropterus salmonides*); 2) Black bullhead (*Ameiurus me/as*); Green sunfish (*Lepomis cyanellus*); 4) Yellow Perch (*Pereaflavescens*); 5) European House Sparrow (*Passer domesticus*); 6) European Starling (*Sturnus vulgaris*); 7) rats (*Rattus* sp.); and 8) several species of terrestrial slugs and snails. These include: 1) Black Arion slug (*Arion ater*); 2) Glass snails (Genus: *Oxychilus* sp.); 3) Brown Garden snail (*Helix (Cornu) asperum*); 4) Gray(or Milky) Field slug (*Deroceras reticulatum*); 5) Leopard Garden slug (*Limax maximus*); and a few other terrestrial slug species.

As funding becomes available it is likely that further efforts to eradicate the several terrestrial and freshwater mollusks will be undertaken.

ACTION 12) Building Capacity through Travel and Training: Take part in regional and local scientific meetings and groups, and national wetland-related groups, such as the American Society of Wetland Managers, Trout Unlimited, the Salmon Restoration Federation, the Society for the Study of Amphibians and Reptiles (SSAR), the CA/NV Amphibian Task Force, etc.

SPECIFIC ACTIVITIES: a) seek opportunities to attend conferences and trainings related to wetland science topics; b) obtain funding to maintain memberships in the above listed organizations; c) maintain memberships in good standing; d) prepare and present Power Point presentations regarding the activities and projects with which the Resighini Rancheria Wetlands Program is involved; e) pursue further training in especially ArcGIS, Soil Science and wetland monitoring and bio-assessment methodologies.

DISCLAIMER: All aspects of this plan are contingent upon obtaining adequate funding for the on-going continuation of the Tribe's Wetland Program, a sub-division of the Resighini Rancheria's Natural Resources Department.

Literature Cited

Boersma, P.D., S.H. Reichard, and A.N. Van Buren (Editors). 2006. Invasive Species in the Pacific Northwest. University of Washington Press. 285 pages.

CRAM: California Rapid Assessment Method. 5-Day General Practitioner Training. Wetland Monitoring Workgroup and Central Coast Wetlands Group. Moss Landing, CA, April 16-20, 2018.

Dowd, Frank S., III, and Bradford R. Norman. 2018. Clean Water Act 319 Sampling Assurance Plan (SAP). Unpublished, Water Resources Office, Natural Resources Department, Resighini Rancheria, ca. November-December.

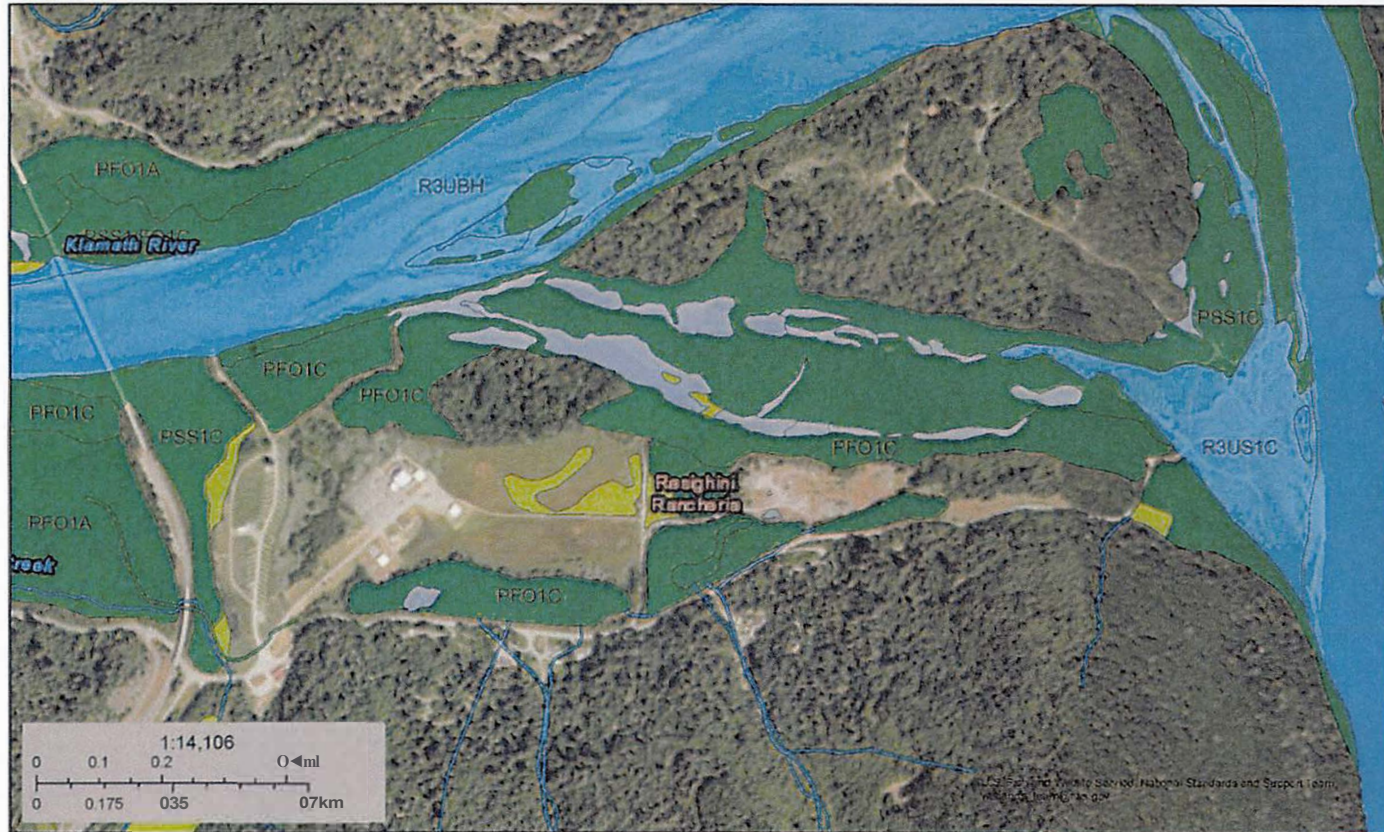
Norman, Bradford R. 2018. Quality Assurance Program Plan for the Resighini Rancheria's Wetland Program. Resighini Rancheria Wetlands Program. Unpublished.

US EPA. 2008. Core Elements of an Effective State and Tribal Wetlands Program. 48 pages.

APPENDIX 1 Wetlands Inventory (in parte) Resighini Rancheria, Natural Resources Department, Wetlands Program, December 2018.



Resighini Wetlands Inventory



June 8, 2016

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|--|--------------------------------|--|-----------------------------------|--|----------|
| | Estuarine and Marine Deepwater | | Freshwater Forested/Shrub Wetland | | Other |
| | Estuarine and Marine Wetland | | Freshwater Pond | | Riverine |
| | Freshwater Emergent Wetland | | Lake | | |

This map is for general reference only. The U.S. Fish and Wildlife Service is not responsible for the accuracy of current information obtained from this map. National Wetlands Inventory should be used in accordance with the terms of the National Wetlands Inventory. For more information, visit www.fws.gov.

Resighini Rancheria, 11/11/11
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