



Nisqually River Water Trail Concept Plan and Recommendations

**Nisqually River Council
July 2017**

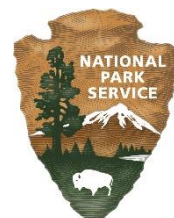


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Executive Summary

The Nisqually River Watershed is nestled between Tacoma and Olympia, Washington. Despite its close proximity to urban neighbors, the Nisqually Watershed remains surprisingly rural. The Nisqually River is the only watershed in the nation to have its headwaters protected by a national park and its mouth protected by a national wildlife refuge. On its 78-mile journey, the river begins at the snout of the Nisqually Glacier on Mount Rainier, passes through dense forests, small towns, open prairies, Joint Base Lewis-McChord, the Nisqually Reservation, and finally spills into Puget Sound. The river supports multiple salmon species, including the threatened Chinook and Steelhead salmon. Local and regional communities receive hydropower and clean drinking water from the Nisqually Basin.

The rural nature of the Nisqually Watershed lends itself well to offering a vast and diverse array of recreation opportunities year-round, including hiking, biking, skiing, hunting, fishing, bird watching, and more. However, the opportunities to access the Nisqually River—the heart of the Nisqually Watershed—are few. There are less than 5 developed access sites to the river, and all of them are located along the lower portions of the river.

The Nisqually River Council (NRC) is an education and advocacy organization that works to implement the Nisqually Watershed Stewardship Plan (NWSP). Among other things, the NWSP calls for ample and diverse recreation opportunities. For years, members of the NRC and of the surrounding communities have called for increased river access. In 2014, the NRC was granted two years of technical services from the National Park Service's Rivers, Trails, and Conservation Assistance Program. The goal was to develop a concept plan and list of recommendations for responsibly increasing public access to the Nisqually River.

The vision and goals of this plan are as follows:

The Nisqually River Watershed is valued for its rural charm, pristine viewsheds, salmon runs, and plentiful recreation opportunities. The Advisory Committee envisions that the Nisqually River Water Trail (NRWT) provides high quality non-motorized public recreation opportunities that are aligned with efforts to protect areas of cultural importance and the natural environment, including salmon habitat and protected lands. The Advisory Committee developed four goals to achieve that vision:

1. Provide ample public access opportunities to the Nisqually River from Nisqually State Park to the Nisqually estuary.
2. Create minimal impact on salmon habitat, private lands and sensitive ecosystems.
3. Provide interpretation opportunities for users to learn about the cultural importance and natural history of the area.
4. Recognize the personal responsibility of users, including exercising skill-based judgment and Leave No Trace principals.

Through this inclusive process, the NRC hopes that the Nisqually River Water Trail will foster a sense of appreciation for the Nisqually Watershed, while maintaining a high level of respect for cultural and natural resources.

Key recommendations include:

- Coordinate an annual Implementation Forum to guide future development, with participation from first responders, land managers, tribal representatives, and recreationists.
- Develop and improve access points to create opportunities for people to recreate near the river. Ensure new access points in the upper reach are consistent with protection of ESA listed species, possibly through managed access.
- Complete any actions that impact culturally sensitive areas in partnership with the Nisqually Indian Tribe.
- Create a map and guide that shows mileages, rapids, permanent hazards, general safety information and Leave No Trace principles.
- Develop and install water trail signs at access points.
- Develop outreach tools telling the cultural and ecological stories of the area.
- Provide safety information through a website, map and guide, and signage.
- Explore opportunities for partnerships for annual river clean-ups.

Introduction and Background

The Nisqually River Watershed

From its glacial headwaters on Mount Rainier to its delta in Puget Sound, the Nisqually River plays an important role in the ecology, economy and communities of western Washington. It is the only river in the United States with its headwaters protected in a national park and its mouth in a national wildlife refuge, offering pristine views and thriving ecosystems from its start to its end. Nearly 80% of the river's mainstem is held under permanent protection, through organizations like the Nisqually Land Trust, for the primary benefit of salmon enhancement. The river boasts multiple salmon runs, and has supported the Nisqually Indian Tribe for thousands of years. It is within this landscape that so much coexists – small towns and spawning salmon, dense forests and tidal mudflats, volcanoes and glaciers, hydroelectric dams and pristine stretches of river.



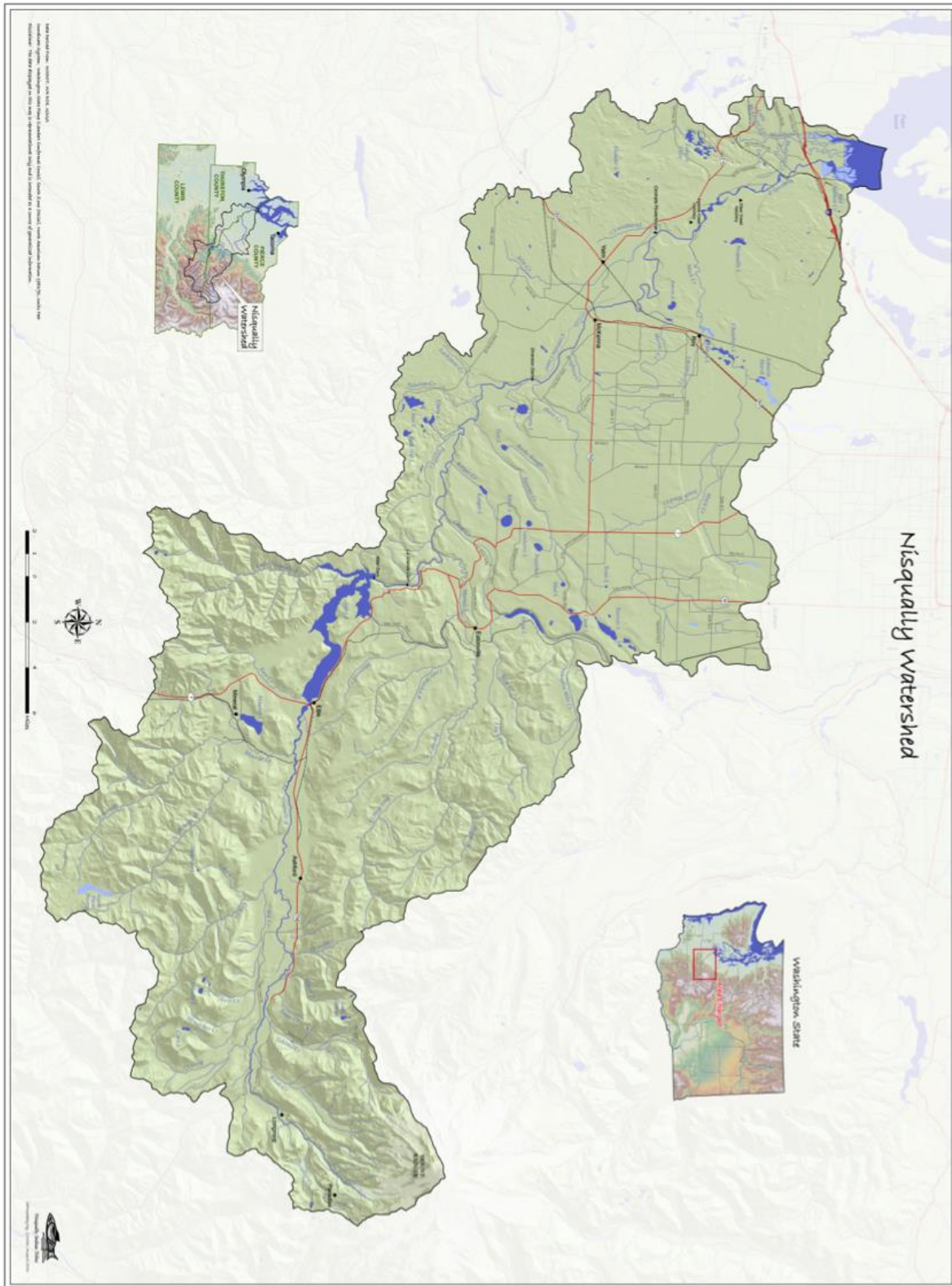
The Nisqually Watershed has glacial origins in Mount Rainier National Park and spills into Puget Sound at the Billy Frank Jr. Nisqually National Wildlife Refuge. Photo: David Hymel

The Nisqually River is 78 miles in length, and covers elevations from over 14,000 feet to sea level. The river has glacial origins, resulting in cold water temperatures for most of the year. Although it is a relatively tributary poor system, the two largest tributaries—the Mashel River and Ohop Creek—are important salmon bearing streams, largely fed by springs and rainwater. The river runs the highest during the rainy winter months and drops considerably during the dry summers.

Despite being surrounded by sprawling cities, the Nisqually Watershed is still one of the healthiest and least developed of the

major Puget Sound rivers. It was recognized as a “River of Statewide Significance” under the 1972 Washington State Shorelands Management Act, and continues to support wildlife, people and salmon today. The Nisqually is the home of several threatened and endangered species, and provides more than half of the fresh water entering southern Puget Sound. The economic benefits are far flung too: Nisqually waters produce electricity for thousands of homes in Tacoma and Centralia, and drinking water for the cities of Olympia and Lacey.

Millions of people travel from around the globe to visit the glaciers of Mount Rainier National Park, or view wildlife at the Billy Frank Jr. Nisqually National Wildlife Refuge. Yet the Nisqually River itself remains relatively untraveled. This pristine environment and limited numbers of access points have helped protect the fragile populations of threatened Steelhead and Chinook salmon, but limit the number of people who can connect to the river.



The Nisqually Watershed (Western Washington) comprises three counties, and is close to Olympia, Tacoma, and Seattle. Source: Nisqually Tribe GIS Program

Nisqually River Council and Nisqually Watershed Stewardship Plan

The Nisqually River Council (NRC), established in 1987, works to promote stewardship and sustainability in the Nisqually Watershed by promoting ecological, economic and social integrity. Its 24 active members come from federal and state agencies, local governments and interested citizens. Two non-profits—the Nisqually Land Trust and Nisqually River Foundation—support the NRC as it works to implement the Nisqually Watershed Stewardship Plan (NWSP). The Nisqually Land Trust has been a key partner in protecting large portions of the Nisqually River’s mainstem in perpetuity through land acquisition and conservation easements. The Nisqually River Foundation provides the funding and staffing power behind the NRC, and was the leadership for the development of this plan.

The NWSP is the guiding document of the NRC and recognizes that sustainability is a balance of healthy environments, communities and economies. The NWSP outlines eleven indicators that help to define what that balance is. These indicators range from promoting biological diversity to sustainable businesses, from watershed education to ecosystem functions, and from integrated communities to recreation opportunities. A copy of the NWSP is available at www.nisquallyriver.org.

For years, NRC members have highlighted the fact that water-based recreation opportunities, like kayaking or rafting, are limited. The watershed boasts ample hiking, biking and skiing trails but there are only four developed public access points to the Nisqually River. Many members believe that increasing public access opportunities along the river is an important step in achieving the vision outlined in the NWSP.

In 2014, the Nisqually River Council applied for technical assistance from the National Park Service’s Rivers, Trails and Conservation Assistance Program (RTCA) to develop a water trail on the Nisqually River. The planning process launched in January 2015 and continued through September 2016, with the NRC and RTCA working collaboratively to analyze current river access, develop recommendations for the future, and produce this plan.

The NRC believes that the Nisqually River Water Trail Concept Plan and Recommendations provides a comprehensive approach to increasing river access that is compatible with cultural priorities and conservation efforts—especially those targeted towards threatened and endangered species. Although this Plan does not supersede the authority or plans of the Nisqually Tribe, or land and water management agencies, the NRC believes this Plan can be useful for project implementation in numerous ways.

- The plan includes the perspectives of diverse stakeholders such as private landowners, public land managers, salmon recovery biologists, tribal employees, tribal members, hydroelectric managers, river rafters and other interested citizens.
- The plan identifies areas of cultural significance and sensitive ecosystems and recognizes the enormous effort dedicated to conservation. It also analyzes the concerns related to increased public access and develops recommendations to minimize negative impacts.

- The plan includes research that identifies highly valued locations, barriers to use, preferences for management and desired amenities. This information is useful in prioritizing projects and plan implementation.
- The plan outlines projects that can be completed in the short and long-term, and identifies a list of potential funding sources.

Water Trails and Their Benefits

The concept of a water trail is recognizing that water can act as a venue for movement. This plan identifies the Nisqually River itself as the “trail,” rather than a land-based trail that can be used for hiking, biking, horseback riding or other recreational use. Since the original Nisqually Watershed Management Plan—now the NWSP—was drafted in 1985, the NRC and its partners have worked to increase recreational use of the Nisqually River. The NRC believes that when people use resources in a responsible fashion, they are more likely to love, appreciate, and protect that resource. By creating more opportunities to float the Nisqually River, the NRC hopes to inspire watershed residents and visitors to become better stewards of this unique place.

Through the development of a water trail, the NRC hopes to create a unified river experience. Rather than creating individual access points, a water trail ties these points together as part of a larger network of recreational activities. This connectivity is a key component of telling the story of the Nisqually Watershed, from a cultural and natural perspective. Developing interpretation tools to share the story from the upper reaches of the river, to Puget Sound, will allow users to understand the interconnectedness and sensitivities of the Nisqually Watershed.

Numerous studies show that well planned recreation opportunities have social benefits, create connections to cultural identities, and minimize impacts associated with recreation, especially through education programs^{1,2}. According to Deyo et al (2013), trail systems can strengthen ties between community, culture, history, and ecology, resulting in an increased sense of value and desire to protect the area. In a similar way, Marion and Reid note that visitor education programs have been shown to influence behaviors and attitudes in positive ways, reducing the impact of recreation. Although these examples are tied to land-based recreation, the NRC believes that thoughtful planning can result in these same positive outcomes along the NRWT.

Increasing public access in an area that has benefited from a relative lack of development can pose complex challenges. However, the benefits of an organized and developed water trail stand to outweigh the negative impacts of unorganized recreation.

- Many undeveloped access points in the Nisqually Watershed have historically been used as illegal dumpsites. Encouraging more frequent and managed access

¹ Deyo, N., Bodhan, M., Burke, R., Kelley, A., Van Der Werff, B., Blackmer, E.D., Grese, R.E., Deyo, N.J. 2013. Trails on Tribal Lands in the United States. Landscape and Urban Planning.

² Marion, J.L., Reid, S.E. ND. Minimizing Recreation Impacts: The Efficacy of Visitor Education Programs.

promotes the responsible stewardship of such areas. The project also presents an opportunity to host volunteer stewardship events.

- Increases awareness and safety along the river, by providing up-to-date information on hazards, user responsibility, and emergency medical services availability.
- Allows for opportunities to tell stories surrounding the cultural heritage and natural resources of the Nisqually Watershed.
- Provides opportunities to connect with nature and participate in outdoor exercise, improving both physical and mental health.
- Directs users to appropriate public sites and helps direct users away from sensitive environmental resources and private and Tribal lands.
- Water Trails can help support local businesses, promote tourism, and diverse economic activity.

Purpose and Scope

The purpose of this plan is to examine the opportunities to increase non-motorized access to the Nisqually River in a way that promotes stewardship of the Nisqually River Watershed while recognizing conservation efforts, protecting salmon populations, and respecting areas of cultural significance. Although public awareness of this unique river is needed to foster community stewardship, increased recreation cannot come at the expense of the dwindling salmon populations. In the same vein, protecting tribal cultural resources and artifacts must also be a high priority.

While this plan does not surpass the authority of management agencies, it does represent a community vision that may help inform future efforts to increase river recreation. All recommendations outlined in this plan are intended to be voluntarily implemented by landowners or agencies, as funding or opportunity permit.

The plan recognizes the incredible recreation opportunities along the full length of the Nisqually River and its tributaries, although the scope of the plan's recommendations are from Nisqually State Park to Luhr Beach on Puget Sound. The plan also examines opportunities to boat from Luhr Beach up McAllister Creek. This scope represents the reaches with the most consistent water flows, river corridors and easiest accessibility, and covers approximately half of the Nisqually River's length.

At the time of this writing, the Nisqually River is the most heavily used from McKenna Park to the Washington Fish and Wildlife Service's 6th Ave Fishing Pier. The Luhr Beach boat ramp is also used heavily by recreationists to access Puget Sound. The upper reaches of the river offer pristine views and remote stretches of river, but also provide critical spawning grounds for sensitive fish populations. As such, significant portions of this plan examine management opportunities in the upper reaches of the river so that recreation and conservation can coexist.

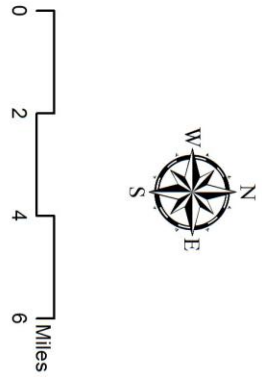
The plan refers to the following reaches (see Figure 3):

- Nisqually State Park to McKenna Park
- McKenna Park to Nisqually Park at Yelm Powerhouse

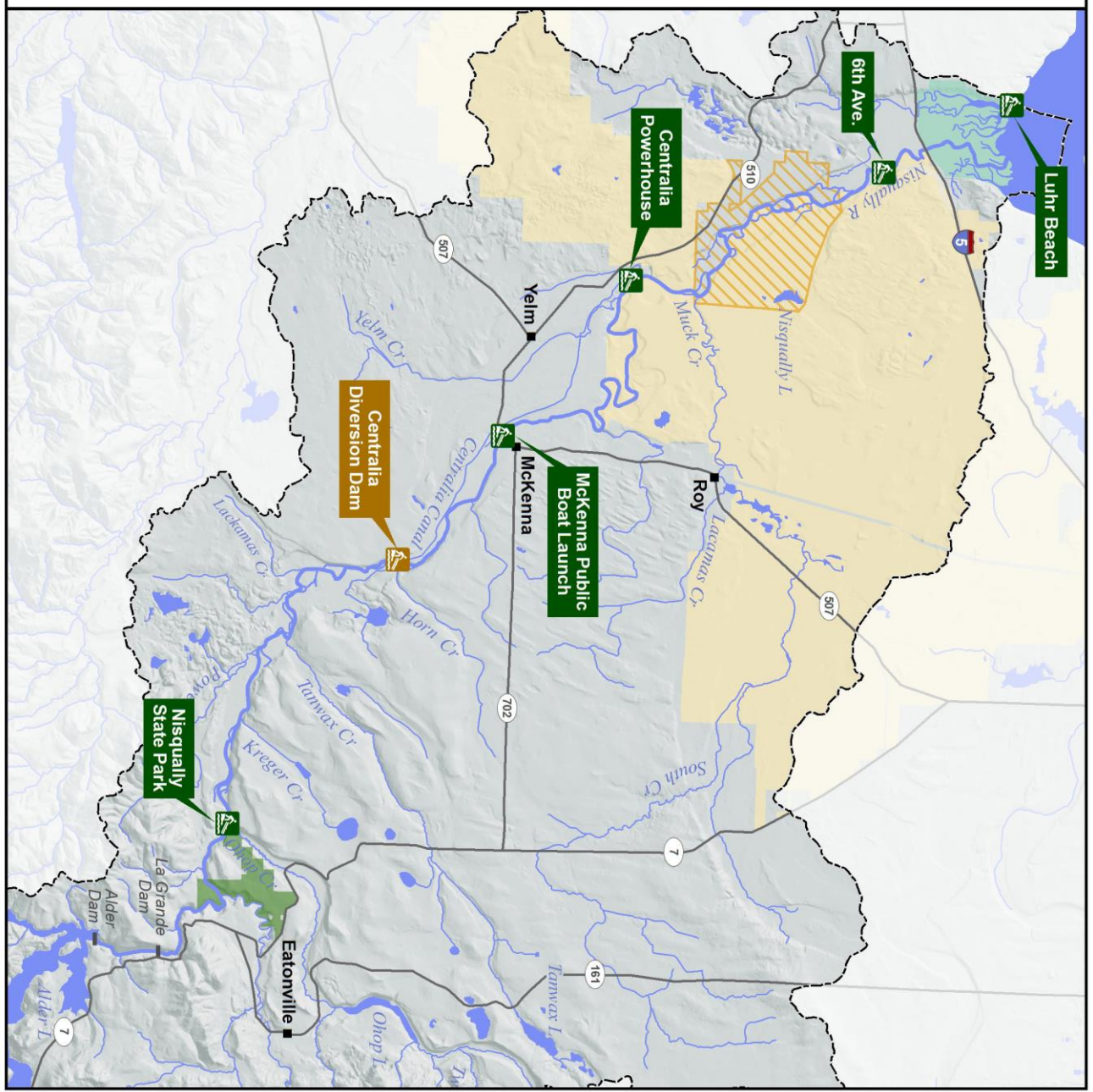
- Nisqually Park at Yelm Powerhouse to 6th Ave
- 6th Ave to Luhr Beach
- Luhr Beach access to the Nisqually Delta and McAllister Creek

Proposed Nisqually River Water Trail

-  Water Trail Access
-  Portage
-  Nisqually Indian Reservation and Adjacent Trust Lands
-  Joint Base Lewis-McChord
-  Billy Frank Jr. Nisqually National Wildlife Refuge
-  Nisqually State Park



Data derived from: Billy Frank Jr. Nisqually National Wildlife Refuge, Joint Base Lewis-McChord, Nisqually Indian Tribe, WA DOE, WA State Parks & Recreation Commission, WSDOT, USGS
 Cartography by: Nisqually Tribe GIS Program, July 2016



The proposed Nisqually River Water Trail would stretch from Nisqually State Park to Puget Sound. Source: Nisqually Tribe GIS Program

Vision Statement and Goals

The Nisqually River Watershed is valued for its rural charm, pristine viewsheds, salmon runs, and plentiful recreation opportunities. The Advisory Committee envisions that the Nisqually River Water Trail (NRWT) provides high quality non-motorized public recreation opportunities that are aligned with efforts to protect areas of cultural importance and the natural environment, including salmon habitat and protected lands. The Advisory Committee developed four goals to achieve that vision:

- Provide ample public access opportunities to the Nisqually River from Nisqually State Park to the Nisqually estuary.
- Create minimal impact on salmon habitat, private lands and sensitive ecosystems.
- Provide interpretation opportunities for users to learn about the cultural importance and natural history of the area.
- Recognize the personal responsibility of users, including exercising skill-based judgment and Leave No Trace principals.

Land Ownership and Management Jurisdictions

The Nisqually Watershed contains a significant amount of land that is protected by federal, state, and local agencies as well as non-profit organizations. This includes land managed by the National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, U.S.

Department of Defense, Washington Department of Natural Resources, Washington State Parks, Tacoma Public Utilities, University of Washington, Nisqually Indian Tribe and the Nisqually Land Trust. The remaining land is split between several small cities, towns, unincorporated population centers, and other private entities. See map in Appendix 1. The Nisqually Indian Tribe and Washington Department of Fish and Wildlife (WDFW) are co-managers for fisheries in the Nisqually River and estuary, and have the authority to open or close fisheries as necessary to protect threatened and endangered species. The co-managers act under the guidance of the National Oceanic and Atmospheric Administration (NOAA), which is charged with the recovery of threatened Chinook and Steelhead salmon under the Endangered Species Act.

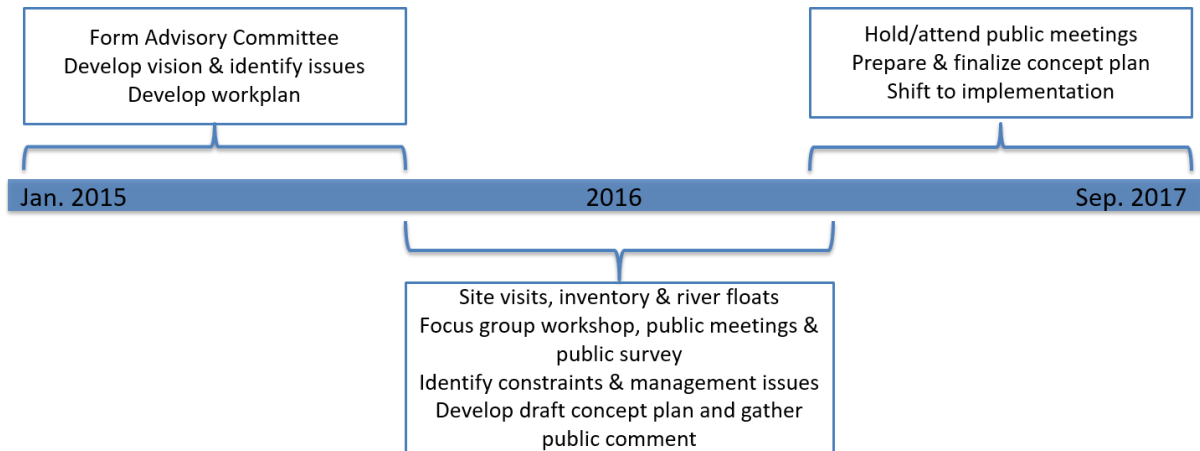
There are four existing developed river access sites, which are managed by various entities. This plan does not override the management authority of any of those entities, but does identify any issues or recommendations for each. Table 1 lists each location and ownership.

Table 1. Developed and publicly available river access locations within the scope of this plan.

Access Site	Ownership	Amenities
McKenna Park	City of Centralia	Boat launch, parking area, playground, picnic area, toilets
Nisqually Park at Yelm Powerhouse	City of Centralia	Boat launch, toilets, parking area, picnic table
6 th Ave Fishing Pier	WA Dept of Fish and Wildlife	Parking area, fishing pier, restrooms
Luhr Beach	WA Dept of Fish and Wildlife	Parking area, boat launch, beach access

Planning Process

The NRWT planning process occurred from Winter 2015 to Fall 2016. It was an inclusive process, with leadership provided by the Nisqually River Council and Nisqually River Foundation. NPS RTCA provided technical assistance throughout the planning process.



Advisory Committee

Forming an Advisory Committee was the first critical step in the planning process. The Committee had representation from land and resource management agencies, local recreationists, user groups, interested citizens, and non-profit organizations. This plan represents the collaboration by all Committee members to develop a shared vision, goals, desired outcomes, and recommendations for the NRWT. Representation was from Washington State Parks, Nisqually Indian Tribe, Centralia Light and Power, Nisqually River Council, American Whitewater, Nisqually Land Trust, Nisqually National Wildlife Refuge, Thurston County, Pierce County, Washington Department of Fish and Wildlife, and other interested citizens. The Advisory Committee met on a quarterly basis during the initial two years of planning, and interested members had the opportunity to be more engaged as time allowed.

Research and Inventory Gathering

Existing sites were visited during the first year of the planning process to determine current amenities and identify any needs or barriers to use. The planning committee also visited numerous potential access locations to determine feasibility of development. The planning team hosted four floats along the Nisqually River with members of the Advisory Committee to collect data such as float lengths, float times, and feasibility of proposed locations. These floats were also conducted during the times of year that this plan recommends concentrated use, to better understand the challenges and opportunities river users may face.

Tools used to gather data included datasheets and spreadsheets that outlined site ownership, site condition, barriers to use, and needed improvements. An example of these datasheets is available in Appendix 1.

The planning team also met privately with stakeholders, including salmon recovery managers, public land managers, Nisqually tribal members, and private landowners. These meetings helped shape the recommendations by identifying the concerns and opportunities posed by the water trail.

Public Input

The planning team considered public opinion during all stages of the planning process. This input, in formal and informal settings, allowed community members to share their vision for the future. This feedback also shed light on concerns surrounding increased public access and vital crucial in developing recommendations that meet the needs of the greater watershed community. Throughout the planning process, the NRC hosted focus group workshops, public meetings, and an online survey to better understand the local opinions of the water trail.

A focus group workshop (June 25, 2015) and a public survey (available September-December 2015) solicited feedback on areas of high value, barriers to use, and desired amenities. Two public meetings (November 5, 2015 and December 10, 2015) provided information on the planning process and allowed time for general input. One of these meetings was held at the Nisqually Tribe’s library to ensure adequate tribal input. Additionally, the planning committee presented the progress of the project at monthly Nisqually River Council meetings. Once a draft plan was produced (March 2016), public meetings were held throughout the watershed to gather community feedback (June 9, 2016 and July 18, 2016). A newsletter series about the water trail and plan was published in the Nisqually Indian Tribe newsletter in 2016 and 2017. Information on the water trail was also shared at a Gather Rains event at the Nisqually Indian Tribe (April 20, 2017).



From top left:

Recreational rafters and the Washington River Runners Association organize a river clean-up event on the Nisqually River. Photo: Rebecca Post

Signs installed in strategic locations can result in increased awareness of hazards and access to the river. Photo: Susan Rosebrough

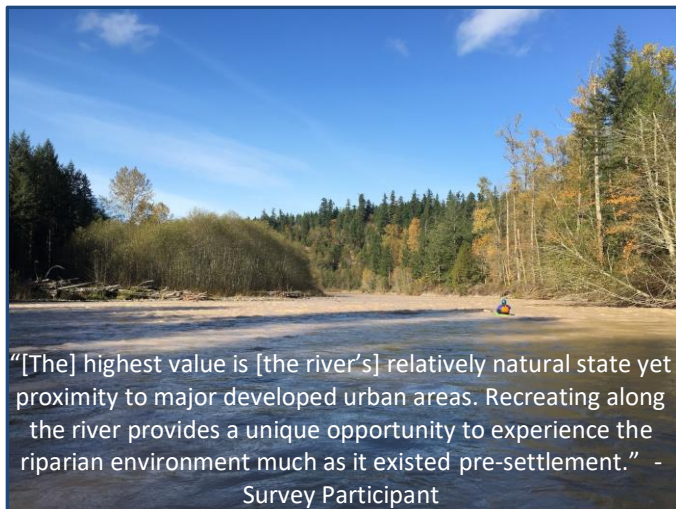
The Nisqually River Water Trail provides a unique opportunity to tell stories of the cultural significance and natural resources of the watershed. Eagles are frequently spotted along the length of the water trail. Photo: Morgan Greene

Natural, Cultural and Economic Values

The Nisqually Watershed holds enormous value in western Washington. The watershed is ecologically, culturally and economically significant, largely in part because of its relatively pristine state. Over 80% of the river's mainstem is held under permanent conservation protection, as are large portions of the basin's land area. The high levels of protection result in healthy habitats and clean water. The watershed is within a day's drive of Seattle, Tacoma and Olympia, making it a popular destination for recreationists of all types. Finally, the watershed contains a rich variety of resources, including forestry, mineral, and agricultural.

Natural Values

The Nisqually Watershed is widely recognized as one of the least developed western Washington watersheds. The NRC strives to support a watershed "where our waters, from



"[The] highest value is [the river's] relatively natural state yet proximity to major developed urban areas. Recreating along the river provides a unique opportunity to experience the riparian environment much as it existed pre-settlement." - Survey Participant

The upper stretches of the Nisqually River offer a unique wilderness experience. Photo: Morgan Greene

glacier to sound, run clean and clear, [and] fish and wildlife thrive in our streams, forests, and prairies³." When asked to identify the highest value of the Nisqually Watershed, survey respondents ranked ecological values as number one.

The watershed is often at the forefront of innovative conservation efforts. The Nisqually River Council was one of the first organizations to successfully complete a watershed planning effort, and remains committed to a collaborative atmosphere 30 years later. The Nisqually Indian Tribe and Billy Frank Jr. Nisqually National Wildlife Refuge, along with other partners, completed the largest delta restoration project in Puget Sound in 2009, restoring over 700 acres of tidally influenced wetlands. Currently, the Nisqually Land Trust, Nisqually River Foundation, Nisqually River Council, and numerous other partners are working to establish a community forest in the upper watershed, with the goals of protecting water resources, providing recreation opportunities, and offering economic boosts to local communities.

The relative lack of access points to the Nisqually River or its major tributaries contributes to the overall health of the watershed. The river is unique in its ability to offer a wilderness experience, despite being located close to major population centers. Although increasing public access to the Nisqually River is a goal of the NRC, doing so irresponsibly opens the possibility of degrading habitat and harming threatened or endangered species. That said, the benefits of developing a water trail and promoting responsible public access can

³ Nisqually Watershed Stewardship Plan (2009).

mitigate negative impacts associated with public access and recreation. For instance, unofficial access points have been used as illegal dumps sites in the past. By developing low-impact access sites, the water trail will promote more “eyes on the ground,” inspiring the stewardship and protection of these sensitive areas. Additionally, educational resources will be designed to help users act responsibly while in fragile environments.

Fish Communities

The Nisqually River’s cold, clean waters support multiple salmon runs, including Chinook, coho, chum, pink, and Steelhead. The fish populations in the Nisqually River are co-managed by the Nisqually Indian Tribe and Washington Department of Fish and Wildlife (WDFW). The numerous salmon runs have sustained the Nisqually Indian Tribe for thousands of years, and continue to be economically important for tribal and recreational fishermen. These species spawn in the Nisqually mainstem, as well as many of the river’s tributaries. The Mashel River and Ohop Creek are the two largest tributaries and offer some of the highest quality spawning habitat in the basin.

Human activities, including development and stormwater runoff, as well as environmental conditions, have negatively affected salmon runs across the Puget Sound region. Today, Chinook and Steelhead salmon are listed as threatened species under the Endangered Species Act. Although population sizes are yet to recover, recent studies suggest that high quality habitat found in the Nisqually Watershed is an important component of sustaining and rebuilding salmon populations. The Nisqually Tribe serves as the Lead Entity in Salmon Recovery on the watershed, and is guided by both a Chinook and a Steelhead Recovery Plan. Over the years, the Nisqually Tribe, WDFW, and other partners have invested millions of dollars into restoration projects, scientific studies, and youth and adult education that supports salmon recovery efforts. Recent projects include the installation of engineered logjams along the Mashel River, and the restoration of over 2 miles of Ohop Creek and surrounding floodplains.

Wildlife

The Nisqually Watershed has seven eco-regions, ranging from the glacial environments of Mount Rainier to the salty waters of Puget Sound¹. The range of habitats support an array of wildlife, including ungulates such as deer and elk, predators like bear and mountain lion, and overlooked species, like the diminutive banana slug. Protected lands within the watershed support populations of threatened and



One of many stunning views of Mount Rainier, overlooking Ohop Valley. Photo: Nisqually Land Trust

endangered species, such as spotted owls, marbled murrelets, and Taylor’s checkerspot butterfly. The protected lands also offer hunting opportunities for both tribal members and recreationists.

The Billy Frank Jr. Nisqually National Wildlife Refuge (BFJNNWR) in particular is a hot spot for fish and wildlife species. The Refuge is located along the Pacific Flyway, a migratory pathway for thousands of birds. During all times of the year, birds stop at the Refuge to feed or nest. The constant influx of birds makes BFJNNWR a popular hiking, photography, and bird watching location for people of all ages. The Refuge was identified as a location of high value during all phases of this planning effort, largely because of the opportunity to view birds and wildlife.

Scenic Vistas

The most iconic feature of the watershed is arguably Washington’s highest peak, Mount Rainier. The mountain dominates the skyline on clear days and can be seen from multiple locations. Beyond that, the watershed’s undeveloped nature lends itself to scenic landscapes, including mossy forests, agricultural valleys, and quaint towns.

The Road to Rainier Scenic Byway⁴, a project of the Nisqually River Council and Nisqually Land Trust, is a route that highlights the scenery and communities of the Nisqually Watershed. It follows the most popular road to Mount Rainier, and ends at the national park’s main entrance outside of Ashford. The route offers stunning views of Mount Rainier, quick access to recreation opportunities, and family-friendly activities.

Geologic

The conflicting forces of fire and ice formed the contemporary landscape. Mount Rainier is an active volcano that last erupted about 150 years ago. The mountain’s history stretches back 0.5 to 1 million years ago, highlighted by lava flows, explosive eruptions, debris flows and other events⁵. The hazards posed by the mountain make Mount Rainier the most hazardous volcano in the Cascade Range.

During the last Ice Age, massive glaciers covered most of the Puget Sound Basin; as they retreated, the land was scoured, creating the geography we recognize today. Similarly, the Nisqually Glacier continues to actively shape the headwaters of the watershed. In 2015, for instance, a glacial outburst flood sent boulders, trees, and other debris rushing down Tahoma Creek⁶.

These geologic features hold social and economic value. Mount Rainier National Park, for instance, welcomes over one million visitors annually and contributes approximately \$58.3

⁴ Road to Rainier Scenic Byway. <http://www.roadtorainier.com/>

⁵ National Park Service. <http://www.nps.gov/mora/learn/nature/volcanoes.htm>

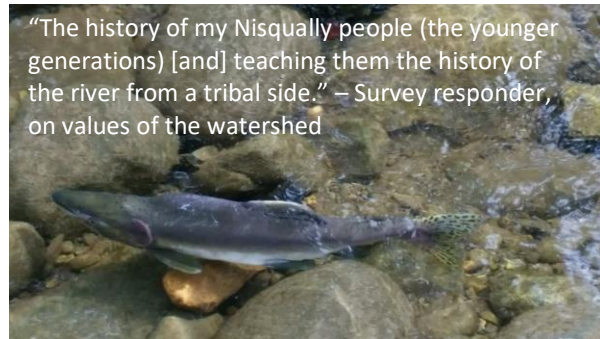
⁶ National Park Service. <http://www.nps.gov/mora/learn/news/westside-road-outburst-flood.htm>

million to the local economy⁷. Furthermore, mineral resources allow for the operation of several gravel mines.

Water Resources

The Nisqually River is 78 miles long and drains an area of almost 800 square miles, comprising portions of Thurston, Pierce and Lewis counties. On its journey, the Nisqually River passes through small communities, dense forests, agricultural lands, the Nisqually Indian Reservation, and Joint Base Lewis-McChord Military Reservation. The river is fed by a few small tributaries, the largest of which are the Mashel River and Ohop Creek.

The river was recognized as a “River of Statewide Significance” under the 1972 Washington State Shorelands Management Act, paving the way for a watershed planning effort. The Nisqually River Task Force completed the first watershed management plan, essentially creating the Nisqually River Council. The watershed is designated as Water Resource Inventory Area (WRIA) 11. Additionally, the Nisqually Reach is protected by the 14,826-acre Nisqually Reach Aquatic Reserve, one of seven such reserves in Washington State⁸.



“The history of my Nisqually people (the younger generations) [and] teaching them the history of the river from a tribal side.” – Survey responder, on values of the watershed

Pink salmon are one of the species of salmonids that spawn in the Nisqually River. Photo: Roger Andrascik

Although the river’s headwaters stem from glacial ice and snowmelt, the river’s flows largely depends on rainfall. The precipitation patterns of western Washington lead to wet fall, winter, and spring seasons, and warm and dry summers. As a result, the river runs highest during the winter and spring months, and drops significantly in the summer. In addition to supporting salmon and other fish, the river houses three hydroelectric dams. Two of the dams are operated by Tacoma Public Utilities, and are outside the scope of

this plan, but influence flows downstream. The third dam is operated by the City of Centralia, and requires a portage for boats floating on the upper planning section of the river trail.

The in-stream flows and groundwater resources are invaluable for local and surrounding communities. A large aquifer underlies the lower portions of the watershed, providing drinking water to the Nisqually Tribe and City of Yelm, as well as the nearby cities of Olympia and Lacey. The Town of Eatonville extracts a portion of its drinking water from the Mashel River.

⁷ National Park Service. April 22, 2016. Mount Rainier Tourism Creates \$58.3M in Local Economic Benefit – Part of \$32B impact overall that supports 295,000 jobs nationwide.

⁸ Nisqually Reach Aquatic Reserve. <http://www.aquaticreserves.org/the-reserves/nisqually-reach/about-the-reserve/>

Cultural Values

The Nisqually Indian Tribe has lived in the Nisqually Watershed since time immemorial. The Tribe’s historic name, Squally-absch, translates to “people of the river, people of the grass,” demonstrating a deep connection to the natural environment. Tribal members continue to rely on salmon, shellfish, wild game, and native plants for subsistence and have invested millions of dollars in order to protect the species that are so sacred to their culture. Additionally, areas throughout the watershed—including areas discussed in this plan—have spiritual significance to the Nisqually Tribe as they have for generations.

Protecting the heritage of the Nisqually Tribe and respecting the significance of sites is crucial in responsibly increasing public access. It is important to recognize the difference between promoting tourism and recreation, and exploiting sacred cultural resources. Although this plan contains recommendations for additional access sites along the Nisqually River, all suggestions are pending the results of an archeological study of the area. Washington State Parks operates under a specific set of guidelines when dealing with cultural resources. These guidelines apply to any construction projects located on state lands, and are designed to minimize the impacts on any cultural sites, archaeological artifacts or other areas of significance⁹. In addition, this plan recommends that any actions are completed in partnership with the Nisqually Tribe and are subject to cultural surveys. Additionally, education resources should be developed in order to spread awareness of the cultural significance of the Nisqually Watershed, and to mitigate any impacts on cultural sites.

Nisqually Tribe and Fisheries

The Nisqually Tribe has always been a fishing people, and their influence in statewide fisheries stems back to when European settlers first arrived in Washington. The Nisqually, along with several other tribes, were signatories on the Medicine Creek Treaty (1854), reserving fishing and shellfish rights. After years of treaty rights being ignored or disrespected, the Nisqually Tribe led the fight for fair and equal treatment, and for their treaty rights to be fully recognized. This fight—often dubbed the Fish Wars—took place in the 1970s, and were largely championed by civil rights activist and Nisqually tribal member Billy Frank Jr. After years of fighting, the Fish Wars culminated with the 1974 Boldt Decision. This landmark court decision changed the management of fish and shellfish in Washington State by making tribes and state agencies co-managers.

Today, the Nisqually Tribe is the lead entity in restoring and managing salmon runs in the watershed, including the threatened Chinook and Steelhead salmon. The Tribe has spearheaded countless efforts to restore habitat throughout the watershed and invests thousands of dollars annually into partner projects to promote a healthier river. The Tribe also maintains two fish hatcheries on the lower river that allow for the commercial and recreational fishing of certain salmon species. In recent years, poor marine conditions

⁹ Washington State Parks and Recreation Commission. Amended November 2010. Cultural Resources Management Policy. <http://parks.state.wa.us/DocumentCenter/View/1580>.

relative to salmon have reduced the number of returning hatchery fish to record low numbers across the Puget Sound region, threatening salmon fisheries across the board.

In addition to salmon fishing, the Nisqually Tribe maintains an active shellfish harvest management program. Tribal fishermen harvest geoduck, Dungeness crab, and other native species from Puget Sound for subsistence and economic purposes.

Spiritual Significance

The entire watershed holds deep significance for the Nisqually Tribe. It is the home of historic villages and gathering places, and offers opportunities for tribal members to connect to their heritage and ancestors. Some areas are particularly rich in tribal history; the protection and respect of these areas must first be met before pursuing any increased public recreation. Indeed, many of the most sacred areas are along the banks of the Nisqually River. As a fishing people, many tribal members find solace beside same river that their ancestors fished for time immemorial.

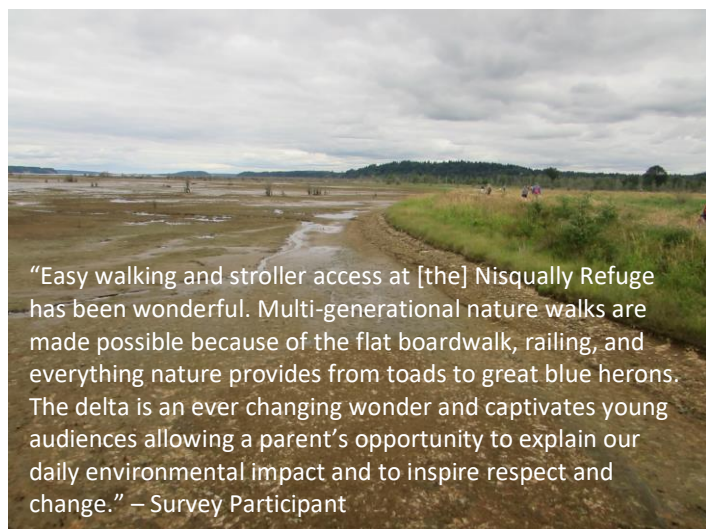
An area of particular importance in the context of this planning process is the site of today's Nisqually State Park. The area encompasses the confluences of the Mashel River and Ohop Creek with the Nisqually River. For thousands of years, the ancestors to today's Nisqually Tribe lived in that area. Unfortunately, the area was also the site of a massacre in 1856. Soldiers from the Territory of Washington shot and killed multiple women and children in retaliation against Chief Leschi fighting for recognition of the Tribe's treaty rights. (See page 23.)

Recreation Use

The Nisqually Watershed offers recreation opportunities from summit to sea. Residents and visitors alike visit the basin during all seasons of the year to take advantage of the opportunities it offers.

Recreationists have the chance to summit the highest peak in Washington State, paddle sea kayaks on Puget Sound, or hike,

bike, or ski through the forests in between. With its close proximity to Seattle, Tacoma and Olympia, the Nisqually Watershed draws outdoor enthusiasts of all types and abilities.



“Easy walking and stroller access at [the] Nisqually Refuge has been wonderful. Multi-generational nature walks are made possible because of the flat boardwalk, railing, and everything nature provides from toads to great blue herons. The delta is an ever changing wonder and captivates young audiences allowing a parent's opportunity to explain our daily environmental impact and to inspire respect and change.” – Survey Participant

The Billy Frank Jr. Nisqually National Wildlife Refuge protects the Nisqually Delta. Photo: Morgan Greene

Current Recreation Use

To better understand current recreational use, the planning team released a public survey. Overall, the recreational value of the watershed was ranked as the second highest value, preceded by environmental values. Participants were asked to mark the recreation

activities they participated in; 104/130 respondents included hiking/walking as a current recreation activity. Other top activities were wildlife/bird watching (82/130), boating (57/130), and photography (52/130). Furthermore, respondents participated in these recreation activities during each season of the year.

Within the scope of this plan’s area, over 90% of survey responders had visited the Nisqually National Wildlife Refuge, and over 80% had visited Pack Forest. It should also be noted that the watershed contains recreation opportunities outside of the planning scope. Mount Rainier National Park draws over 1.8 million visitors each year, with a large percentage of visitors entering through the Nisqually entrance.

Boating

Although boating along the Nisqually River is not as popular as on other Washington rivers, many people do take advantage of the existing access sites. When asked about water-based recreation in the survey, 60% of respondents had either boated or floated the river. Although not the largest draw to the watershed, these recreationists used the river during each season on the year. The majority of survey responders used a water craft such as a kayak or raft, although a number of people also noted that they used drift boats, innertubes, and other water crafts.

River Access Opportunities

The planning process highlighted the value many people placed in simply being able to access and be next to the Nisqually River. People of all walks of life noted that the river provides solitude, adventure, and beauty to those who like to hike, picnic, wade, or relax on its banks. Although there are opportunities to view the river during its entire length, these opportunities are limited in number. Currently, people are allowed to recreate directly adjacent to the Nisqually River or its associated reservoirs in 12 locations, as outlined in Table 2.

Table 2. Developed and undeveloped opportunities for river-side recreation. Note: all sites are open to the public, but may not provide amenities.

Location	Land Owner	Access Type
Nisqually Vista Loop	National Park Service (Mount Rainier National Park)	A paved, but not accessible, 1.1 mile loop that offers views of the Nisqually Glacier
Alder Lake	Tacoma Public Utilities	This park allows day-use, camping, and boating along Alder Lake Reservoir
Mashel Confluence	UW Pack Forest	A gated, 1+ mile (one-way) hike on unpaved roads. No parking or amenities provided.
Ohop Confluence	WA State Parks	A gated, 2+ mile (one-way) hike along unpaved roads. No parking or amenities provided.
Various Locations	Nisqually Land Trust	The Nisqually Land Trust owns various properties that are open to low-impact recreation activities, such as photography, bird watching, and hiking. A list of properties that are available to recreational use is at

		www.nisquallylandtrust.org
McKenna Park	Centralia Light and Power	A day-use park featuring a playground, boat launch and covered picnic area
Nisqually Park at Yelm Powerhouse	Centralia Light and Power	A day-use park featuring a boat launch, a short unpaved trail, and a few picnic tables
Riverbend Campground	Riverbend Campground	A private campground and RV park, with day-use allowed for a small fee
6 th Ave Fishing Access	WA Department of Fish and Wildlife	A day-use fishing site that is ADA accessible
Nisqually River Overlook	US Fish and Wildlife Service	A short, ADA accessible hike leading to an overlook at the mouth of the river at the Billy Frank Jr. Nisqually National Wildlife Refuge
Nisqually Plaza RV Park	Private	A private RV park, with access to McAllister Creek provided for a small fee
Medicine Creek Treaty National Memorial	US Fish and Wildlife Service	A newly established National Memorial, located on the Billy Frank Jr. Nisqually National Wildlife Refuge, at the location of the Medicine Creek Treaty signing. It is only accessible by boat; rules for access are still being developed.
Luhr Beach	WA Department of Fish and Wildlife	A day-use boat launch that provides access to Puget Sound near the Nisqually Delta. Open to motorized and non-motorized boaters.

Economic Value of Recreation

Outdoor recreation is an important component of Washington’s economy. According to a recent study, Washingtonians spent about 446 million participant days per year recreating outdoors, spending about \$21.6 billion annually¹⁰. Washington’s economy provides nearly 200,000 jobs in the state⁷. The Nisqually Watershed reflects the state’s active lifestyle, attracting large numbers of outdoor enthusiasts each year.

The largest draw to the basin is Mount Rainier National Park. In 2014, the national park welcomed 1,875,651 visitors¹¹. While the park operates multiple entrance gates, the Nisqually Entrance is the only gate open during the winter months, so a significant portion of those 1.8 million visitors travelled through the Nisqually Watershed on their way to the mountain. A recent study determined that visitation to the Park contributed approximately \$58.3 million to the local community, in part supporting nearly 600 jobs in the surrounding area—not including employees hired at Mount Rainier National Park itself. The study determined that, nationwide, tourist dollars spent while visiting national parks returns \$10 for every \$1 invested¹².

¹⁰ Briceno, T., Schundler, G. 2015. Economic Analysis of Outdoor Recreation in Washington State. Earth Economic, Tacoma, WA.

¹¹ National Park Service. FAQs. <http://www.nps.gov/mora/faqs.htm>

¹² National Park Service. (April 22, 2016) Mount Rainier Tourism Creates \$58.3M in Local Economic Benefit – Part of \$32B impact overall that supports 295,000 jobs nationwide.

Likewise, the Nisqually National Wildlife Refuge welcomes over 200,000 people per year¹³ and contributes more than \$9 million/year to the Nisqually economy from visitation alone¹⁴. With its close access to I-5, the Refuge is a popular destination for visitors from nearby cities during any time of the year.

Participants of the NRWT survey were asked about the amount of money spent during their last visit to the watershed. The majority of participants reported spending \$6-\$50, most frequently in Yelm (56%), Eatonville (46%), and Lacey (42%).

Educational Values

The Nisqually Watershed is home to numerous formal and informal educational and citizen science opportunities. Each community houses its own K-12 education system, and the Nisqually Tribe houses the Northwest Indian College. Beyond these traditional school settings, the unique conditions in the watershed provide the foundations for meaningful environmental and cultural education opportunities. The programs listed below provide a snapshot of educational programs in the watershed, although many more self-guided opportunities exist.

Nisqually River Education Project

The Nisqually River Education Project (NREP) is a program of the Nisqually River Council, and has worked to provide service-learning opportunities for over 25-years. NREP provides students grades 4-12 with projects like water quality monitoring, habitat restoration, nutrient enhancement, and biodiversity mapping.



Nisqually Stream Steward volunteers relocate aquatic creatures during a restoration project in the upper Nisqually Watershed. Photo: Tyler Willey

Nisqually Stream Stewards

A program of the Nisqually River Council and Nisqually Indian Tribe, Nisqually Stream Stewards (NSS) is an adult education program that introduces community members to the people, habitats, fish, and wildlife of the Nisqually Watershed. Participants receive 40+ hours of free training in exchange for 40+ hours of volunteer service.

Mount Rainier Institute

Mount Rainier Institute (MRI) is a collaboration between UW's Pack Forest and Mount Rainier National Park. MRI brings middle and high school students to the Pack Forest campus for a 4-day intensive learning

¹³ US Fish and Wildlife Service. Billy Frank Jr. Nisqually National Wildlife Refuge. www.fws.gov/refuge/Billy_Frank_Jr_Nisqually/what_we_do/in_the_community

¹⁴ Batker, David., De La Torre, I., Kocian, Maya. (2009) The Natural Economy of the Nisqually Watershed. Earth Economics.

class, during which students are introduced to cultural and natural resources in the watershed. Students develop and implement their own scientific study and present their findings to their peers.

Mount Rainier National Park

Mount Rainier National Park offers a vast range of education and interpretation opportunities for adults and children who visit the mountain. Schools or continuing education groups can arrange guided field trips, and all visitors have access to a range of informational signs and visitor's centers.

Nisqually Reach Nature Center

The Nisqually Reach Nature Center (NRNC) is located near the Nisqually Delta at Luhr Beach. It is a non-profit organization that offers field experiences to students and adults, and coordinates multiple citizen science projects aimed at increasing knowledge and awareness of the delta and nearshore environments. NRNC also maintains an education center that is open to the public during certain times.

Billy Frank Jr. Nisqually National Wildlife Refuge

The Billy Frank Jr. Nisqually National Wildlife Refuge offers educational opportunities to school groups from across the Puget Sound area. These field experiences often include a presentation on the history of the Refuge, as well as time spent on the trails learning about native plants and animals. The Refuge also offers ample learning opportunities for adult visitors including a summer lecture series.

Nisqually Land Trust

The Nisqually Land Trust offers numerous ways to learn about their work, including guided property hikes, informational booths at community events, and multiple volunteer opportunities. These opportunities provide an in-depth opportunity to learn about the Nisqually Watershed, sensitive habitats, and ways that community members can support restoration activities.

Nisqually Environmental Team

The Nisqually Indian Tribe's Nisqually Environmental Team (NET) is a newly developed program that aims to connect tribal youth to the natural resources profession.



Students in the Nisqually River Education Project plant trees to protect salmon. Photo: Aleks Storvick

Health Values

Water trails provide a number of benefits to our health and well-being. Recreation not only provides a diversion and refreshment from our daily lives but also enriches our physical and mental health. Exercise derived from recreational activities lessens health related

problems and subsequent health care costs. The health benefits are felt individually in both physical and mental health and to society in terms of reduced health-care costs.

Easy access to parks, trails, and open spaces is strongly correlated with lower rates of obesity, diabetes, and other diseases. The CDC recommends 30 minutes of exercise a day, which is enough to burn the excess energy that typically causes people to gain weight¹⁵. The areas surrounding the Nisqually River Water Trail have a higher obesity rate (Pierce County 31%, Thurston County 29%, Eatonville 33%, Unincorporated Pierce County including Joint Base Lewis-McChord 30%) than the state average (27%) making access to activity even more important^{16,17}.

People have long recognized the benefits of mental health, quality of life, and spiritual connections to spending time in nature, but researchers are only beginning to give these beliefs scientific backing. Studies show that spending time in green outdoor spaces and participating in outdoor activities can reduce stress, promote relaxation, and combat depression¹⁸. A review of most exercise trials held inside and outside showed that participating outside showed increased mental well-being, feelings of revitalization, and energy, as well as decreased anger, tension, confusion, and depression. Spending time outdoors has also been shown to boost focus, memory and concentration. Studies show that even as few as five minutes spent outdoors has distinct mental health benefits, including reduction of stress and depression, as well as improvement in self-esteem, creativity, and life satisfaction. These feelings were heightened for those who exercised in a wilderness area or near water¹⁹. The area surrounding the Nisqually River Water Trail has a higher prevalence of poor mental health (3.6 days for both counties) when compared to the rest of Washington State (3.3 days). Creating opportunities to connect with nature and be near water can be part of the solution.

¹⁵ Larkin, M., Can Cities Be Designed to Fight Obesity? The Lancet, 2003.

¹⁶ University of Wisconsin Population Health Institute, County Health Rankings & Road Maps. <http://www.countyhealthrankings.org>.

¹⁷ Tacoma-Pierce County Health Department, Demographic and Health Data for Pierce County: Unincorporated Area and Eatonville. <http://www.tpchd.org>.

¹⁸ Washington State Recreation and Conservation Office, Outdoor Recreation in Washington. The 2013 State Comprehensive Outdoor Recreation Plan. 2013. <http://www.rco.wa.gov>.

¹⁹ Barton and Pretty. What is the Best Dose of Nature and Green Exercise for Improving Mental Health?: A Multi-Study Analysis. 2010. <http://pubs.acs.org/doi>.

Interpretation Opportunities

The Nisqually River Water Trail offers a unique opportunity for stakeholders and partners to tell the many stories of the watershed, from cultural heritage to early homesteaders to the natural resources of the area. These opportunities can help river users and other recreationists to develop a sense of place and a deep appreciation for the Nisqually Watershed.

The concept of a “sense of place” stems from the idea people can develop strong attractions to certain places, and the meanings behind those attractions²⁰. Researchers have connected that having a sense of place to a particular area can promote environmentally friendly behaviors and a desire to protect that area¹⁶. Developing a sense of place requires individuals to experience an area—not just the physical elements of the environment, but also the historic, social, political, and economic characteristics of an area²¹. By developing interpretation opportunities as a part of the water trail, there are multiple opportunities to foster a deep sense of support and concern for the river and watershed.

In addition, education opportunities can reduce negative impacts associated with recreation, including littering, unskilled use, straying off trail, or walking through sensitive habitats. Targeted messages—including signs, brochures, or in-person encounters—can make people more knowledgeable about appropriate behavior or areas that are not open to public access.

The goals of the interpretation program are:

- River recreationists understand and appreciate the cultural significance of the Nisqually Watershed as it relates to the Nisqually Tribe
- Users have increased awareness and concern for the sensitive salmon populations in the Nisqually Watershed and support the restoration efforts completed to protect them.
- Users are prepared to recreate on the river safely and within their own skill set. Users make minimal negative impacts on the environment.

Cultural Stories

The Nisqually Watershed has been the home of the Nisqually Tribe since time immemorial. Ancestors of today’s tribal members lived in villages throughout the watershed and nearby region, leaving behind stories of the local landscape. The Tribe continues to be at the heart of the watershed—both in a physical and spiritual sense. Although there are countless stories that could be told, there are a few in particular that highlight the historic connection to the watershed, and the Tribe’s on-going influence in local management.

²⁰ Kuryavtsev, A., Stedman, R.C., Kransy, M.E. (2012). Sense of place in environmental education. *Environmental Education Research*. Vol 18, No. 2, 229-250.

²¹ Ardoin, Nicole. 2006. Toward an Interdisciplinary Understanding of Place: Lessons for Environmental Education. *Canadian Journal of Environmental Education*, 11, p. 112-126.

Medicine Creek Treaty

In 1854, the leaders of the Nisqually Tribe, Puyallup, Squaxin, and other regional tribes met with the governor of the Territory of Washington under a tree on the Nisqually delta. The purpose was to sign the Medicine Creek Treaty, which would cede hundreds of square miles of tribal land—a significant portion of Western Washington—to the United States²². In exchange, the tribes protected their rights to fishing, hunting, and gathering in traditional places.

Throughout the centuries, the treaty rights reserved by the tribes were continually disrespected. Soon after the signing, lands reserved for the tribes were illegally condemned and sold, and the Nisqually Tribe was moved from the banks of the Nisqually River. Violent conflicts broke out—ultimately leading to the massacre of 1856—but as a result, the Nisqually Reservation was moved to its current location, allowing tribal members to continue to connect to the river. Decades later, tribal members were repeatedly denied access to the fish and shellfish the treaty supposedly protected. The conflict led to the Fish Wars of the 1970s, and ultimately, to the Boldt Decision of 1974.

The Treaty Tree fell years ago, but remains an important place. In 2015, the site was established as a national monument. The surrounding area is part of today’s Billy Frank Jr. Nisqually National Wildlife Refuge. The details regarding management of and access to the national monument are still in the works, but should be included in the water trail.

Chief Leschi and the History of the Mashel Confluence

As mentioned previously in the plan, the area near the confluences of the Mashel River and Ohop Creek with the Nisqually River were the site of multiple villages for thousands of years. It was the home of Chief Leschi, one of the leaders of the Tribe in the 1800s. Chief Leschi was later one of the signatories of the Medicine Creek Treaty, and fought to ensure that the future Nisqually Reservation would be located along the Nisqually River. He was later wrongly convicted and murdered. His “crimes” were later exonerated by the State of Washington.

The area was also the site of a massacre in 1856. After Chief Leschi and other Nisqually leaders began to push for their treaty rights to be recognized, militia of the Territory of Washington travelled to the area near the confluence of the Mashel and Nisqually Rivers. They encountered several Nisqually tribal members, and opened fire. Many women, children, and old men were slaughtered.

Spiritual Connections to the Nisqually River

The Nisqually Tribe has always lived, worked, and played next to the Nisqually River. Throughout this planning process, tribal members highlighted the extreme significance and importance that the river plays in their lives. This includes spiritual connections, a way to

²² Lynda Mapes. After 153 years, Treaty Tree lost to winter storm. The Seattle Times. February 12, 2007.

connect to ancestors, and from a fishing perspective—which is highly spiritual in its own rite.

Natural Resources and Restoration Projects

The Nisqually Watershed has had restoration activities from its headwaters to its mouth, in an effort to protect the forests, waters, birds, and wildlife of the area.

Ohop Valley Restoration

Just upstream from the confluence of Ohop Creek with the Nisqually River is the site of an extensive restoration project dubbed the Ohop Valley Restoration Project. When settlers began to farm the Ohop Valley in the 1880s, Ohop Creek was moved from its historic, meandering bed to a manmade ditch. Over the last 10+ years, multiple partners including the Nisqually Indian Tribe, Nisqually Land Trust, South Puget Sound Salmon Enhancement Group, and the Nisqually River Council have worked with landowners to purchase land within the valley floodplain and restore the creek. To date, nearly 2 miles of Ohop Creek have been re-meandered and flood plains replanted with native vegetation. This produces better salmon habitat and improves water quality. It also provides habitat for culturally important species like elk and deer.

Nisqually Land Trust Riparian Protection Projects

All along the river corridor, the Nisqually Land Trust owns or manages conservation easements on riverfront properties for the primary purposes of promoting healthy habitats and protecting salmon. Boaters on the Nisqually Water Trail will pass by numerous properties that the Land Trust has restored, including Powell Creek Complex, Thurston Ridge, and Wilcox Flats. Many of these sites have had roads dismantled and floodplains replanted in order to reduce erosion and protect the instream habitat.

Centralia Diversion Dam Fish Ladder

The Centralia Diversion Dam is equipped with a fish ladder—opposite from the boat portage—that allows returning adult salmon to swim upstream to their spawning beds. The fish ladder is outfitted with an infrared camera that allows biologists from the Nisqually Tribe to observe the numbers and species of fish returning upstream.

Billy Frank Jr. Nisqually National Wildlife Refuge and Nisqually Delta Restoration Project

The Nisqually Tribe, Billy Frank Jr. Nisqually National Wildlife Refuge, and multiple other partners have completed significant restoration projects on the Nisqually Delta to restore estuarine habitat. In the early 1900s, dikes were built around the perimeter of the delta, turning the estuary into a freshwater habitat and allowing a large farm to be built. Over the years, plans emerged to turn the area into a landfill or deepwater port. Finally, community members rallied for the protection of the area, and in 1972, the Refuge was established. Since then, multiple dikes have been removed, culminating in 2009 with the largest estuary restoration project in Puget Sound. Today, the estuary once again is flooded by tides two times per day, drastically increasing the amount of habitat for salmon and migratory birds.

Nisqually Reach Aquatic Reserve and Nisqually Reach Nature Center

Led by the Nisqually Reach Nature Center, over 14,000 acres of Puget Sound was designated at the Nisqually Reach Aquatic Reserve. The NRNC continues to provide citizen science opportunities for people to better and better understand the rich delta habitat.

Recreation User Responsibility and Leave No Trace

Water-based recreation has its inherent risks. Conditions on the Nisqually River, including hazards present, the long distances between access locations, and the lack of emergency response access make certain stretches of the river not suitable for entry level boaters. While the development of a water trail attempts to make the Nisqually River more accessible, it is crucial that users exercise personal judgment and keep safety in the forefront.

Essential Equipment

All users should bring equipment that will keep them safe and reduce the risk of injury or death. This includes PFDs for all boaters, warm clothes, dry bags, water, food, and spare paddles. Users unfamiliar with the Nisqually River should also bring a map and guide.

Potential Hazards

The Nisqually River has a few hazards that are consistently present, such as the Centralia Diversion Dam, Little Kahuna rapid, bridge abutments and piers, or WDFW's Screw Trap. However, many of the hazards are ever changing in size, location, and severity. Users must be knowledgeable on these hazards (such as log jams) and be ready to expect an unforeseen hazard at any moment. Additional hazards that should be covered include hypothermia and lack of road access/cell phone service.

Leave No Trace Principles

Leave No Trace is a well-known set of seven principles that are designed to help users leave behind no sign of their presence. The principles are: plan ahead and prepare; travel and camp on durable surfaces; dispose of waste properly; leave what you find; minimize campfire impacts; respect wildlife; and be considerate of other visitors²³. Although not all of these principles apply to the Nisqually Water Trail (ie., camping) others are highly pertinent to the success of the water trail and can help insure minimal impacts on natural and cultural resources.

Potential User Conflicts/Appropriate Places to Land

A significant portion of the Nisqually River is held in private or protected ownership, through entities such as the Nisqually Land Trust, Joint Base Lewis-McChord, the Nisqually Tribe or private homeowners. We urge all users to respect private property. Additionally, multiple people use the Nisqually River for purposes other than rafting, such as fishing, picnicking or photography. Waterfowl hunting is a common occurrence during certain times of the year at the Nisqually delta. Emergency or unintended landings in inappropriate places already occur, and may continue to occur despite the development of signs, maps, guides or other materials. Users of the water trail must understand where is it unacceptable to land their boats or the types of additional uses that may be encountered.

²³ Center for Outdoor Ethics. The Leave No Trace Seven Principles. www.lnt.org

This knowledge can help reduce trespassing and user conflicts. In addition, we encourage land managers, emergency responders, and other interested parties to join the Implementation Forum in an effort to reduce further conflicts.

Methods and Media

Interpretation opportunities should be available in a variety of formats to accommodate river users and other recreationists who enjoy spending time next to the river. These interpretation opportunities should be available in an online format, as well as in printed materials such as a map and guide of the water trail. Opportunities should be pursued to install signs at access locations to help tell stories of a particular area or warn users of potential hazards. In addition, in-person communication, such as ranger talks or informal conversations at access sites, should be considered where appropriate.

Recreation Inventory and Considerations

The first year of the planning process was dedicated to a thorough examination of existing access sites, issues/barriers to use, and cultural and natural considerations. This examination formed the basis of the planning team’s recommendations for the water trail.

Planning Reaches

The NRC has always worked to promote sustainability using a watershed-wide lens. Without understanding issues and opportunities from summit to sea, it is difficult to successfully achieve long-term social, economic, or ecologic integrity. This planning effort was no different: the recreation opportunities—and issues associated with them—stretch from above 14,000 feet in altitude to sea level.

While the planning team researched recreation and access opportunities from the river’s headwaters to the mouth, the best river recreation opportunities exist on the lower half of the river, from Nisqually State Park to the Nisqually delta. This stretch became the overall focus of the plan and associated recommendations. Within that planning scope, the river trail was further broken into smaller reaches:

- **Nisqually State Park to McKenna Park.** The upper most reach offers a scenic float through a pristine section of the Nisqually River with opportunities to see wildlife and, on clear days, majestic views of Mount Rainier. The reach is also very important for salmon and steelhead fisheries and cultural resources. The river flows through the Nisqually State Park, conservation lands, agricultural farms, and limited residential housing. The reach is approximately 15 miles long, and takes 3-7 hours to float depending on river flow. This reach requires a portage around the Centralia City Light’s Yelm dam.
- The **McKenna Park to Nisqually Park at Yelm Powerhouse** reach offers class III whitewater boating opportunities for kayakers and rafters. This is the only stretch of river with named rapids (though not the only stretch with whitewater), and provides close-to-home experiences for local boaters. The river flows through small housing developments, agricultural farms, Joint Base Lewis-McChord, the towns of McKenna and Yelm, and conservation lands. It is approximately 9 miles in length and takes 2-6 hours to float depending on river flow.
- The **Nisqually Park at Yelm Powerhouse to 6th Ave** reach offers a scenic float and an opportunity to view wildlife. This section floats largely through undeveloped lands including Joint Base Lewis-McChord, Nisqually Tribe Reservation, small residential areas, and a private campground. It is approximately 9 miles in length and takes 4-6 hours to float depending on river flows.
- **6th Ave to Luhr Beach** offers a unique opportunity to experience both the Nisqually River and Puget Sound. Approximately 2 miles after putting on, floaters spill into Puget Sound at the Nisqually Delta. This reach is not suitable for rafters, but can be completed by kayakers. Users should be aware of multiple hazards, including tides, mudflats, waterfowl hunting, and restricted access on the Billy Frank Jr. Nisqually National Wildlife Refuge. The reach is approximately 6 miles, and can take several hours to travel across the open water of Puget Sound.

- **Luhr Beach access to McAllister Creek and Nisqually River.** Located near the Nisqually Delta on Puget Sound, Luhr Beach is managed by the Washington Department of Fish and Wildlife. From this access point, boaters can paddle up McAllister Creek and view the newly established Medicine Creek Treaty National Memorial, which is only accessible by water. In addition, ocean crafts can venture into Puget Sound and explore the Nisqually Delta and lower section of the Nisqually River. Near the I-5 bridge, a private RV park also provides opportunities to access McAllister Creek for a fee. Luhr beach is part of the Cascade Marine Water Trail coordinated by Washington Water Trails. The trail extends from Olympia to the San Juan Islands and includes 66 campsites and 160 day-use sites.

Connectivity with trails and other land-based recreation uses

Although this plan primarily addresses river access for water-related recreational activities such as boating, there is a nexus with local land-based recreation. Throughout the planning process, community members articulated a demand for non-boating recreational access to the river. The Nisqually River connects two nationally significant public land areas--Mount Rainier National Park at the river's origin and the Billy Frank Jr. Nisqually National Wildlife Refuge at its mouth--which were set aside for, among other things, the American public to preserve, experience and recreate in the relatively pristine natural environments of this region. Along the river corridor lie large tracts of lands that provide for excellent existing and potential land-based recreational opportunities.

Land-based recreation opportunities are greatly enhanced by increased public access to the Nisqually River. The river provides rich wildlife and natural landscapes which lend themselves well to those seeking access to hiking, bird watching, photography, fishing, biking, and general enjoyment of nature experiences.

Results from a public survey (Appendix 2) conducted September-December 2015 indicated the following recreational activities associated with the river in priority order by popularity:

1. Walking/Hiking
2. Wildlife/Bird Watching
3. Photography
4. Boating
5. Fishing

Additionally, respondents reported the following additional activities in descending order of importance: walking the dog, berry picking, outdoor education, biking, hunting, and inner tubing. These results make clear that recreational activities beyond boating on the river are desirable among community members and watershed visitors. Any additional management stemming from this land-based recreation is outside the scope of this plan. However, we encourage land managers to participate in the Implementation Forum as a venue to address any challenges as they arise.

Existing and Planned Connected Land-Based Recreation Resources

A number of connected land-based recreation opportunities already exist. In addition, many trails are included as a part of larger trails plans. The extent to which these plans are implemented range from currently implemented, to formal and informal planning documents, to conceptual ideas.

Center for Sustainable Forestry at Pack Forest

The forest, owned by the University of Washington and located near Eatonville, provides an extensive trail system for hiking, biking, and equestrian use, including a 1-mile trail that takes users to the Mashel River Confluence with the Nisqually. Wildlife and bird watching, photography and fishing, in addition to hiking, biking and equestrian uses are all available from this trail. The Pack Forest main campus provides a developed parking lot and restrooms.

Nisqually State Park

The park, located in Eatonville, had its Master Plan adopted in March 2010. The first developed amenities were formally opened and dedicated on January 20, 2016. Washington State Parks and the Nisqually Indian Tribe signed a Memorandum of Understanding to collaboratively develop and manage the park. At the time of this writing, multi-use trails and a service road access the Nisqually River at various points. Public driving access to the river, however, does not exist. Current access is by foot only, with a 2+ mile one-way hike on unpaved roads. The newly developed parking lot is located approximately 2.5 miles away from the gated road leading to the Ohop confluence.

Billy Frank Jr. Nisqually National Wildlife Refuge

The Billy Frank Jr. Nisqually National Wildlife Refuge is a popular hiking, bird watching, and photography location at the mouth of the Nisqually River. It offers multiple walking trails that are accessible to people of all abilities, including a look-out over the Nisqually River. Migratory bird species flock to the Refuge during all times of year, making it especially popular to seasoned and aspiring birdwatchers.

Eatonville Regional Trail Plan

This plan, adopted in May 2009, envisions a widely known network of pedestrian, bicycle, and equestrian trails in and around the town of Eatonville, and connects the town to surrounding areas and attractions. One of these connections is the existing Bud Blancher Trail, which links Eatonville to UW's Pack Forest. Through the State Park, one can hike from town to the river crossing only one road. The Bud Blancher Trail is the first part of the plan that has been implemented, and is extremely popular with local residents. The Regional Trail Plan also addresses proposed trail sections connecting Rimrock County Park to the town, Eatonville Highway to the Triangle at Hwy 7, and Ohop Valley to the State Park.

Yelm-Tenino Trail

The 13.5-mile paved Yelm-Tenino trail currently begins in the City of Yelm at State Route 507. An old Northern Pacific Railroad right of way extends from SR 507 northeast approximately 2.5 miles to the Nisqually River. This is an undeveloped and inaccessible

right of way, but may provide future public access to the river. The Yelm-Tenino Trail is administered by Thurston County Parks.

JBLM Morale, Welfare, and Recreation (MWR) Programs

The Morale, Welfare, and Recreation Program for Joint Base Lewis-McChord provides support and services for members of the military and families by offering opportunities that enrich their lives culturally and creatively. JBLM MWR has an active program which helps enable their members to recreate throughout the Pacific Northwest outdoor environment. As military lands along the river are significant in terms of access and shoreline, MWR may in the future play a role in being a large source of active users on or near the river. Community members who obtain a recreational access base through Joint Base Lewis-McChord have the opportunity to recreate on military lands.

Existing Public River Access Points

Currently, four main developed public access points exist on the river and delta at McKenna Park, Nisqually Park at Yelm Powerhouse, at the end of 6th Avenue SE in Olympia and Luhr Beach. While not linked to any trail systems, these areas provide a connection to land-based recreation such as fishing, wildlife or bird watching, picnicking, and playing near or in the water.

Riverbend Campground

Riverbend is the only drive-in campground located on the river. It is a private, commercially operated facility that provides car camping, fishing, boat launch opportunities. Day-users may access the river for a small fee.

Nisqually Plaza RV Park

The Nisqually Plaza RV Park offers access to McAllister Creek, just upstream of its confluence with Puget Sound. Conveniently located by I-5, the RV park allows public access to the river for a fee.

Existing River-Based Recreation Uses and Places Center for Sustainable Forestry at Pack Forest

River access at this site is limited and undeveloped. Boaters are required to hike their gear over a mile on unpaved roads until reaching the Mashel River. From there, boaters have a short stretch on the Mashel until it meets the Nisqually River. The Mashel River features highly variable flows and large amounts of large rocks and boulders, often limiting the times of year that the section is open to boats, especially larger watercrafts such as rafts.

It should be noted that the planning team took into consideration promoting easier access to the Nisqually River at this location. However, the



The Mashel confluence is critically important to the Nisqually Tribe for cultural and natural resources. Photo: Susan Rosebrough

confluence of the Mashel and Nisqually River is a critically important location for cultural and natural resources. The area is deeply important to the Nisqually Tribe as a village spot and, unfortunately, the site a massacre in the 1800s. In addition, the Mashel River is increasingly important to dwindling Steelhead salmon, and is prone to negative impacts given increased recreation. As such, the planning team decided that the best way to increase recreation access, while protecting cultural and natural resources, is to leave the Mashel River access as is.



Kayakers access the Nisqually River in the Nisqually State Park. To access the site, the boaters were required to carry their gear for 2 miles. Photo: Michael Deckhert

Nisqually State Park

This is an undeveloped site that leads to the Nisqually River approximately one-quarter mile upstream from the Ohop confluence. River access at this site is even more limited than at the Mashel confluence. Boaters are required to hike their gear for over 2 miles on unpaved roads. Once reaching the river, boaters can launch directly on the Nisqually River.

McKenna Park

McKenna Park is owned and operated by the City of Centralia, as mitigation for the Yelm Hydroproject. A 4-foot high hydroelectric dam blocks the river at mile XX, diverting some water through a 9-mile long channel²⁴. The park offers a paved boat launch and parking lot with spaces large enough for trailers. There is no cost to use the park. McKenna Park leads to the only classified whitewater section on the river, making it both a draw and a hazard to users.



McKenna Park provides access to the whitewater section of the Nisqually River. Photo: Susan Rosebrough

This is one of the most popular river access sites, because of close proximity to Yelm, Lacey and Olympia, and its well-developed boat ramp. User data collected by Centralia Light and Power April 2014-February 2015 showed high levels of use most months, with the exception of April and October 2014. It should be noted that the methods used to collect data were not entirely accurate, so the numbers are an estimate²⁵.

Nisqually Park at Yelm Powerhouse

Nisqually Park at Yelm Powerhouse is also owned and operated by City of Centralia. The park provides a paved boat ramp, portable toilets, and a parking area. The gates are open daily from 7:00 am to 8:00 pm. From here, the river flows



Nisqually Park at Yelm Powerhouse. Photo: Thomas O'Keefe

²⁴ City of Centralia. Yelm Hydroproject. www.cityofcentralia.com.

²⁵ Personal communication, Micah Goo.

through Joint Base Lewis-McChord (JBLM) and the Nisqually Indian Reservation.

This is also a popular put-in and take-out location on the river. According to facilities managers for Centralia Light and Power, the majority of users at this site are boaters. User data collected from April 2014 to February 2015 showed moderate levels of use year-round. The site was most heavily used in May (197), July (230), and August (179). The methods used to collect these data were more accurate than those used at McKenna Park²¹.



The tank crossing bridge is an undeveloped access point on JBLM that requires an access pass. Photo: Morgan Greene

Tank Crossing

The tank crossing bridge is located on JBLM property and is not open to the general public without an access pass. There is a small dirt ramp leading to the river, but no parking lot or other amenities. Users must obtain a range access pass and follow all regulations posed by JBLM. No user data on this site was available at the time of writing this plan.

6th Ave

The 6th Ave access point is owned and operated by Washington Department of Fish and Wildlife. River access at this site is easy as a take-out location, although there is no ramp leading directly to the river. Boaters can park nearby and drag their gear less than 50 feet from the river to their vehicles. A significant amount of wood can accumulate against the shore, limiting the number of places that rafts could safely take-out if it is not removed from

time to time.

This site poses significant hazards if used as a put-in location. The river below 6th Ave is tidally influenced, and in less than 2 miles, it spills into Puget Sound. From there, boaters are faced with a long stretch of open water before reaching Luhr Beach. This stretch of river is not advised, and is only feasible if floated in an ocean craft.

Luhr Beach

Luhr Beach, located near the Nisqually Delta on Puget Sound, is owned and operated by the WA Department of Fish and Wildlife. It is a paved boat launch and requires a Discover Pass to use. Luhr Beach is a popular location for beach goers and boaters. The site offers restrooms, allows motorized boats, and a parking area.

The boat launch is well used, but recreationists must be prepared for tidal influences. The boat launch can lead directly to mudflats during extreme low tides, posing hazards for anyone who tries to walk across them. Once on the water, boaters can choose to paddle up McAllister Creek or towards the mouth of the Nisqually River before returning to Luhr Beach. It should be noted that waterfowl hunting occurs in the area during the winter months. Additionally, portions of the Billy Frank Jr. Nisqually National Wildlife Refuge are not open to boaters.

Natural and Cultural Considerations

The NRC believes that lasting stewardship is only achieved when community members are involved in conservation efforts. Being able to use and appreciate those natural resources is an important step in promoting stewardship and developing a ‘sense of place.’ The NRWT will provide a venue for community members and watershed visitors to feel a close connection to the Nisqually River. Unfortunately, increased unmanaged public access may result in degraded environments or cultural areas. These negative impacts can stem from inappropriate or inadequate site locations or facilities, a lack of enforcement and management, or other issues. The NRWT planning team recognizes that the establishment of a water trail will only be feasible if addressing these concerns is first met and continually monitored.

Cultural Considerations

The Nisqually Indian Tribe has lived in the Nisqually Watershed for thousands of years, and continues to call the basin home. Although today’s reservation boundaries take up a small portion of the basin’s area, the Tribe’s historical use stretches far beyond that area.

Mashel and Ohop Confluence

One of the most culturally significant places is the area of the watershed that encompasses the confluences of Mashel River and Ohop Creek with the Nisqually River. In the past, multiple villages were located in the area. Additionally, the Tribe works closely with Washington State Parks to provide on-the-ground management at the Nisqually State Park. While the Tribe plans to provide interpretive opportunities in the Park, tribal staff have also had to clean multiple recurring illegal dumps sites, particularly near the confluences.

Nisqually Reservation

The Nisqually Reservation is located in the lower watershed, between the towns of Yelm and Lacey. The Tribe is one of the largest employers in Thurston County and offers multiple services to its members. Most of the developed areas of the reservation are along Yelm Highway or Reservation Road, but the boundaries of the Tribe’s land stretch to the Nisqually River. In the past, non-tribal members have trespassed onto tribal property by way of the river, sometimes resulting in illegal dumpsites. To respect the Tribe and their property, it will be necessary to include information about inappropriate places to land along the river, as well as directing users to better places to recreate.

Fisheries

More information about the threatened salmon species is in the below section. The Nisqually Tribe has commercial fisheries targetting several salmon species in the Nisqually River, which is an important cultural link for tribal families as well as important piece of the Tribe’s economy. The Tribe invests millions of dollars into salmon recovery efforts along the river to ensure fishing can continue for generations into the future.

Natural Considerations

Fishery managers have expressed concern that increased recreation and public use may come at the expense of natural resources and sensitive habitats. With careful planning,

targeted education and outreach, and the involvement of multiple stakeholders, the NRC believes that the NRWT can be developed in a way that is compatible with conservation efforts, especially those designed to protect threatened species.

Steelhead and Rainbow Trout

The *Oncorhynchus mykiss* stock complex consists of steelhead and rainbow trout, and is a threatened species in the Nisqually River, listed under the Endangered Species Act. As recently as the early 1990s, the number of returning adult steelhead crashed from about 4,000 fish to less than 1,000.

Recent studies suggest a direct link between rainbow trout and steelhead salmon. Trout spend their entire lifecycle in the freshwater environment; in contrast, steelhead juveniles migrate to Puget Sound and the Pacific Ocean, before returning to freshwaters to spawn as adults. Research conducted by the Nisqually Indian Tribe and Washington Department of Fish and Wildlife suggest that some rainbow trout may produce steelhead salmon—potentially providing an important source of juveniles. With steelhead numbers dangerously low, fisheries managers are concerned with protecting as many individuals as possible. The upper stretch of the Nisqually River—from Mashel Creek to the Centralia Diversion Dam—contains some of the prime spawning habitat for adult steelhead and rainbow trout. Spawning surveys show that half of steelhead spawning sites are located in this upper stretch. Furthermore, the Mashel River is increasingly an important spawning tributary. To protect habitat in and around the Mashel River, the planning team determined an existing informal launch site about a quarter-mile upstream of the mouth of Ohop Creek should be the upper limit of the water trail. (See Appendix 1 for a map of this access site)

Fisheries managers expressed concerns that increased public access might lead to degraded habitats and destruction of steelhead nests, or redds. Some of the largest concerns stemmed from the possibility of increased access, especially hiking access, along the Mashel River. Foot traffic in or along the Mashel River may lead to the trampling of redds and the degradation of riparian cover, which helps prevent erosion and keep stream temperatures low.

Chinook Salmon

Chinook salmon are also a threatened species on the Nisqually River. Currently, between 50-75% of returning adult Chinook are hatchery raised. Fisheries managers aim to develop a naturally produced population of Chinook. The majority of Chinook redds are observed in the Nisqually mainstem, below McKenna Park. However, a number of Chinook do migrate into the upper reaches of the Nisqually and into the Mashel River. As noted in the previous section, the presence of Chinook redds in these areas raises concern over increased foot and boat traffic as a result of the water trail.

Safety Considerations

The Nisqually River's location within the Puget Sound basin affords it as being a premier natural recreation resource for the millions of residents of the region. As public access increases on the river, however, the risk for accidents, injuries, and fatalities also increases. Public safety must always be a primary consideration when proposing or implementing



Large boulders, or rock gardens, throughout the river can be dangerous for boaters, innertubers, or other users. Photo: Thomas O'Keefe

changes to access for recreation on the river. Water-based recreation can be dangerous and deadly, even to those who are experienced, properly trained, and well equipped. Easy access on the river to those who may not be familiar with the inherent hazards without also providing education information about those hazards may increase accidents and fatalities. Ultimately, the responsibility for safe recreational activities on or related to the river lies with the user. Three main elements to consider when discussing safe recreational use on the river include hazard awareness, prevention of accidents, and emergency response in the event an accident occurs.

Hazards

The Nisqually River is heavily affected by the region's meteorological and geographic characteristics. The natural impacts of weather, flooding, erosion, and other substantial events changes the river's characteristics even on a daily basis. The following are natural and man-caused hazards that all river users should be aware of.

Natural Hazards:

Water Temperature. The Nisqually River runs cold for most of the year. Water temperatures vary seasonally and along the river's length, but average temperatures may exceed 60.8 F° or drop below 42.8 F° depending on time of year or weather patterns²⁶. The cold water—as well as cold air temperatures—can lead to hypothermia if users are not dressed appropriately.

Swift Water. In addition to its glacial origins, the river is fed by multiple tributaries and sub-basins. The river runs fast, especially following heavy rain events, providing up to Class III rapids in some sections.

Poor Water Visibility. Sediment and glacial till brought down from the mountain keeps the water turbid. Submerged hazards in the river such as debris, logs, rocks, are difficult to see under these conditions. These



Log jams can be fatal to boaters caught within the branches. Photo: Morgan Greene

²⁶ Nisqually National Wildlife Refuge. 2005. Final Comprehensive Conservation Plan.

hazards may cause injury, death, or severe damage to boats. Searching for accident victims under water is extremely difficult when visibility is so low.

Trees, stumps, boulders. A great deal of woody debris and rocks get transported down the river regularly. Because of the shallow river bottom, turns in the river, and continually eroding river banks, natural debris in the water create numerous sweepers and strainers which can cause drowning for river users who have not taken precautions to avoid them. These can be some of the most dangerous hazards that exist for even experienced rafters and kayakers. The locations and sizes of these sweepers change continuously, so all river users must be prepared for different obstacles each time they put-on.

Man-Made Hazards:

A 4 ft. high diversion dam, part of the City of Centralia's Yelm Hydroproject, runs completely across the river approximately 9 miles upstream from the city of Yelm. Here, a portion of the Nisqually River is diverted by way of a small canal to a hydroelectric plant located in Yelm, then directed back into the river. Boaters must portage around the dam and put in below it. Signs upriver warn of the dam, and during the summer months, a floating barrier is placed above the dam. Missing the barrier and/or signs and going over the dam either by raft or kayak, or swimming, would likely prove fatal.



**The Centralia Diversion Dam requires a portage; it could be fatal if boated over.
Photo: Susan Rosebrough**

Washington Department of Fish and Wildlife Screw

Trap. A fish counting float with a continually rotating wheel mechanism is moored in the river approximately a ¼ mile upriver from the Yelm Powerhouse outflow facility. A sign strung on a cable over the river warns boaters of the hazard. This is easily avoidable provided the boat operator knows it is coming and can maneuver his/her craft. Flows here are relatively slow and ample time is allowed for this maneuver.

Man-made debris in the river. Flooding, high water, and in some cases, past illegal dumping has left man-made debris in the river. This includes canoes or kayaks swept from properties along the river, plastic debris, rope, metal from vehicles, old concrete and rebar bridge abutments, and other large items that were either dumped or abandoned in the river. Although there is not a great abundance of these items littering the river, all recreational users must be vigilant that it does exist. Some of the items have become wedged and are visible in amongst the many logjams and woody debris in the river. Some are partially buried in the river bottom and show only during certain river flows. One particularly dangerous piece of metal, likely the remnants of an old vehicle that had been dumped years ago, is located directly at the end of the Class III Rapid known as "Little Kahuna". At certain flows, the sharp metal can lurk just beneath the surface of the water in the direct path of boaters in the rapid.

Remoteness. While the river is located in close proximity to major population centers, large tracts of land owned and managed by a variety of entities have created a sparsely populated and relatively non-accessible buffer on both sides of the river. These entities

include the Nisqually Indian Tribe, Manke Timber, City of Tacoma Public Utilities, Joint Base Lewis-McChord, Wilcox Farms and the Nisqually Land Trust. If an accident were to occur on the river, one may have to travel a surprisingly large distance over these tracts of land before getting to a road or other development, much less making contact with a person. While cell service is available in most areas along the middle and lower river corridor, it may not be 100% covered, and getting help to someone on the river can be problematic given the lack of road access.

Public Health and Sanitation. This plan acknowledges that human waste disposal could become a public health problem should increased recreational access bring many more users to the river without facilities and education measures to address this use. At those places where access is provided, appropriate facilities to deal with the human sanitation issues, including vault or flush toilets, and trash collection, and their maintenance, must be prioritized as access is increased. Promote Leave No Trace and stewardship of the area.

Bridge Piers and Abutments

There are five bridges that cross the Nisqually water trail, used by both vehicles and trains. Each of these active crossings includes bridge piers and/or abutments in the river that can pose a significant hazard to boaters. Depending on river flows and past flooding, many abutments have the potential to collect logs, uprooted trees, branches, and other debris at their base, often directly in the main current of the river.

Accident Prevention

Prevention of accidents presupposes that the primary responsibility for safety lies with the individual who is recreating on the river. That being said, there are several actions aimed at providing river users with information that can reduce the chance of an accident. Specific recommendations designed to increase safety along the water trail are outlined on page 39.

Identifying safe access points. Any new access points developed should be examined for such characteristics as easy access to the road system, stretches of river with even flows (ie: no rapids) and good sight distance, not located directly above known logjams or other river hazards, and ability to accommodate multiple groups of people. High consideration must also be given to avoid areas of high cultural or natural sensitivity so as to mitigate negative impacts on resources.

Public safety information. General water-based recreation safety information can be gleaned from such agencies and organizations as the Washington State Parks Boating Safety Program (<http://parks.state.wa.us/963/Campaigns>) and American Whitewater (<https://www.americanwhitewater.org/content/Safety/view/>). Making public safety information available to both water trail users and to emergency responders can help reduce the risk of accidents and long wait times before responders arrive on scene.

Water Trail maps and guides. Maps and guides are an important tool to increase user awareness and promote stewardship of the trail. Information included in maps and guides can include specific locations to stretch or rest, Leave No Trace principles, or the location of known hazards.

Guided commercial trips. Many other regional rivers provide a platform for commercial outfitters to provide guided trips for users. The addition of commercial trips can increase accessibility to those who lack equipment or skills, and also ensures that trained and skilled boaters are present on the river.

Emergency Response to Accidents

If past history is any indication, it is inevitable that accidents—and unfortunately fatalities—will occur on the Nisqually River. Past accidents have stemmed from a lack of user awareness or ability, and natural and manmade hazards in the river among other causes. Part of this planning process was dedicated to understanding the opportunities and shortcomings in providing adequate emergency response to accidents along the water trail.



Signs warn users of WDFW's screw trap. Photo: Thomas O'Keefe

The ability to report and locate accidents on behalf of the public can be problematic. Although there is cell service along the river corridor, there are areas of weak or no service. Furthermore, since cell phones and water activities don't mix without some type of waterproof phone protection, there is a chance that a person wanting to report an accident may not have their phone at hand. Beyond making an emergency call for help, there are a very limited number of roads that reach the Nisqually River. Both Emergency Responders, and those involved in the emergency, may have a difficult time

locating one another quickly enough to avoid fatalities. Those floating the river must factor in the potential inability to report an emergency quickly as part of their safety planning.

Self-rescue within a group of river users is a critical skill that each user has the responsibility for. The time taken to report an accident, for responders to locate and arrive at the site, and to perform a rescue may not be time that the victim has to survive. Unfortunately, self-rescue is not a skill normally held by the general public. Therefore, agencies responsible for public safety must be aware of any changes to access that may increase the need for emergency response. We recommend that the Implementation Forum include emergency responders in order to better share information on river access. Additionally, the Nisqually River Council will work in coordination with emergency responders and land managers to share river access information and better prepare for rapid response.

Recommendations

Based on the planning team's inventory, stakeholder outreach, public input, and consideration of natural and cultural resources, the following recommendations were developed for the NRWT. These recommendations apply to existing sites, the development of new sites, safety considerations, interpretation opportunities, and connections to land-based trails.

The Advisory Committee developed four goals to guide all recommendations. These goals apply to recommendations across the entire river trail, as well as to each reach of the river.

- Provide ample public access opportunities to the Nisqually River from Nisqually State Park to the Nisqually estuary.
- Create minimal impact on salmon habitat, cultural resources, private lands or sensitive ecosystems.
- Provide interpretation opportunities for users to learn about the cultural importance and natural history of the area.
- Recognize the personal responsibility of users, including exercising skill-based judgment and Leave No Trace principals.

Overall Recommendations

The following recommendations apply to the water trail as a whole, from the Nisqually State Park to the delta. Short term actions are those that can be completed in 1-5 years, while mid to long term actions are those that can be completed in 5-20 years.

Access and Construction Needs:

- Develop additional access points; create opportunities for people to recreate near the river. This includes such characteristics as easy access to the road system, stretches of river with even flows (ie: no rapids) and good sight distance, not located directly above known logjams or other river hazards, and ability to accommodate multiple groups of people.

Interpretive Needs:

- Create a map and guide that shows mileages, rapids, permanent hazards, general safety information and Leave No Trace principles. This map should be made available in hard copy and online.
- Develop and install water trail signs at access points.

Safety Needs:

- Safety information made available to the public. Priority should be given to providing the public with the best available safety information including establishing and maintaining signs directing users to the access points, identifying specific river hazards, and providing general warnings about recreating in a water environment. These general warnings include but are not limited to: the use of PFDs, the hazards of mixing alcohol consumption with water activities, being vigilant when children are playing in or near the water, not extending beyond one's skill and experience level, and the use of proper equipment for the level of water recreation a person is participating in. Safety information can and should be

incorporated with other types of information about the river on signs, online, and in printed materials such as brochures or maps.

- Share information on the development of this plan and safety issues with local public safety agencies, river user groups (such as Washington Recreational River Runners, American Whitewater, and Mountaineers) and businesses catering to local river users (kayak shops, rafting outfitters, REI, Kayak Academy). Safety information, including printed and online resources, should be shared with potential user groups including JBLM, local colleges and university outdoor groups, fishing clubs, and youth groups.
- Encourage commercial guided trips on the river. The presence of commercially guided trips can provide better access for those who may not own their own equipment, as well as ensuring that experienced and trained boaters are on the river.

Other Needs:

- The Nisqually River Council will coordinate the Implementation Forum. This Forum will be composed of relevant stakeholders, including the Nisqually Indian Tribe, land management agencies, whitewater boaters, emergency responders and other entities.
- The Nisqually River Council will explore opportunities to partner with local nonprofits and volunteer groups to host river clean-up events. This promotes proper stewardship of the river and will make the river healthier for all users.
- Track user data by reach. This would include developing ways to track the number of visitors at each access point and on the river. WDFW is interested in partnering on this.
- Interview river access site managers regarding opportunities and challenges for managing existing and future access.

Reach by reach recommendations

Nisqually State Park to McKenna Park

Access and Construction Needs:

- Expand access to the existing informal launch site upstream of the Ohop Creek Confluence in the Nisqually State Park. Leave the Mashel River and Ohop Creek confluences undeveloped (Mid-term action).
- Connect with Weyerhaeuser Timber Company to explore opportunities to open access on road leading to Nisqually State Park, Thurston County (Short-term action). Develop a new Nisqually river access site on the Thurston County side of the river in the Nisqually State Park property on bank opposite from Mashel confluence (Long-term action).
- Any actions at the Nisqually State Park are subject to approval by Washington State Parks and the Nisqually Indian Tribe. Actions would be completed in partnership with the Nisqually Tribe and are subject to cultural surveys and environmental review.
- Identify additional access sites at or above Centralia Diversion Dam to develop a shorter reach and reduce concerns of low flows below the dam (Mid to Long term action).

- Designate one or more boat-in only sites where visitors can stop to picnic and stretch their legs. See Appendix for a map of potential sites on Tacoma Power property recommended by Tacoma Power. (Mid-term action)

Interpretive Needs:

- Develop outreach tools telling the cultural and ecological stories of area around the State Park (Mid-term action).
- Install sign at HWY 7 crossing to inform boaters of developed State Park site, natural resources concerns, and Leave No Trace principles. (Mid-term action)

McKenna Park to Nisqually Park at Yelm Powerhouse

Access and Construction Needs:

- Explore opportunities to develop a take-out location before the class III rapids begin (Mid- to long-term action)
- Improve ramp through widening at Nisqually Park and Yelm Powerhouse
- Support efforts to extend the Yelm-Tenino Trail to the Nisqually River and beyond. Pursue opportunities to construct additional access site and/or day-use area at the intersection of the Yelm-Tenino Trail and Nisqually River (Mid-term action)
- Work with JBLM to identify places for boaters to stop on property for lunches, stretching, etc (Mid to long term action)

Interpretive Needs:

- Develop interpretive opportunities, especially relating to safety hazards, to be installed at access points and along river (Short Term Action)
- Reduce user conflict at McKenna Park by installing signs informing non-boaters that boaters get first priority on ramp (Short Term Action)
- Improve signage directing users to Centralia Powerhouse (Short Term Action)

Nisqually Park at Yelm Powerhouse to 6th Ave

Access and Construction Needs:

- Work with JBLM to improve the Tank Crossing access site (Short Term Action)
- Improve 6th Ave access site, including removal of graffiti and reducing wood loads to make take-out safer (Short Term Action, on-going)

Interpretive Needs:

- Install signs discouraging boaters to put-in at 6th Ave, due to safety concerns floating to Luhr Beach. (Short Term Action)
- Develop information providing details on access to JBLM property, safety concerns, cultural significance and reducing user conflicts. (Short Term Action)
- Install signs along the river directing users to appropriate locations and away from inappropriate locations (Nisqually Reservation, etc) (Short Term Action)

Luhr Beach Access

Access and Construction Needs:

- None identified

Interpretive Needs:

- Develop information on safety concerns, including tidal influences and boating across open water
- Develop information on ecology of the area, including delta restoration and salmon enhancement
- Provide information on appropriate places to boat
- Develop information on potential user conflicts (ie., hunting seasons, motorized boats, etc)

Upper Reach Management Options

Increased access to the upper reach—particularly between the Mashel River and Ohop Creek—was the most controversial topic of the planning process. The stretch offers a wilderness experience that is unique among many Washington rivers. Although the stretch does not provide a whitewater float, it is a highly desired stretch within the boating community because of its pristine environment. At the same time, this stretch of river provides some of the most important habitat for endangered fish species, making it a high priority environment for fisheries managers representing the Nisqually Tribe and WA Department of Fish and Wildlife. Equally important, the areas identified as potential access sites are among the most culturally important areas in the watershed.

At the beginning of the planning process, the NRC and planning partners acknowledged that conservation efforts to recover threatened species takes priority over public access. Based upon feedback from fisheries managers, the planning team recognizes that open access along the Nisqually State Park-McKenna Park reach is not conducive to protecting federally protected species because of projected user numbers and potential impacts to fragile spawning beds and riparian areas. However, the planning team developed several management options that will provide better public access than presently available, while addressing the concerns of fisheries co-managers.

These management options will allow fisheries managers to limit the number of boaters overall and concentrate use to seasons when sensitive salmon species are not in the area. It will also provide better access to a unique, highly desirable stretch of river. The intent of these management plans is to make the upper stretch a sought after destination, targeted at boaters who wish to experience a unique wilderness experience. It should also be made clear that these management scenarios DO NOT apply to any other section of the river.

The management scenarios are rough sketches. At the time of this writing, details such as responsible agencies and potential fees are yet to be determined. The hope is that these recommendations provide the blueprint for a meaningful management system that both enhances river recreation and protects fragile natural resources.

Through conversations with stakeholders including fisheries managers, boating community, tribal community, and land use managers, the following criteria is recommended for managed access at Nisqually State Park:

- In partnership with fisheries managers, identify launch access windows at the Nisqually State Park that are consistent with salmon recovery. At the current time,

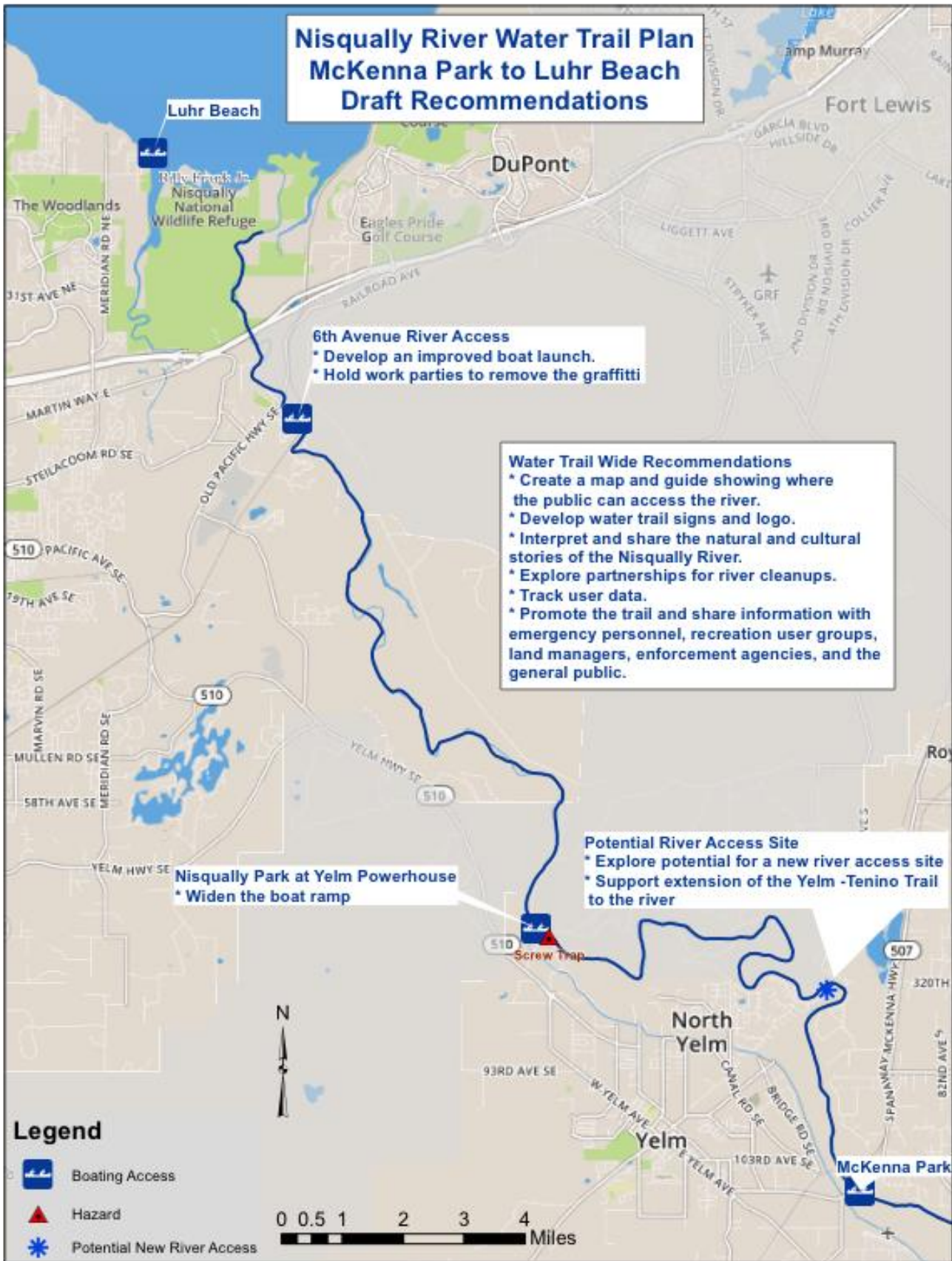
WDFW has identified two such seasonal windows: November through mid-February, and July and August, to avoid spawning Steelhead. This time period will be referred to as “open season.”

- Develop guidelines to monitor and track user numbers.
- Create partnerships with WA Department of Fish and Wildlife enforcement staff to ensure compliance with fisheries.
- Implement adaptive management of open seasons to allow for the potential of increases access if user impact and salmon recovery allow.
- Provide flexibility in access to account for highly variable flow rates and poor weather conditions.
- Locate parking no more than $\frac{1}{2}$ to $\frac{3}{4}$ of a mile away from the launch site if possible.
- Provide information as to why managed access, rather than open access, is necessary

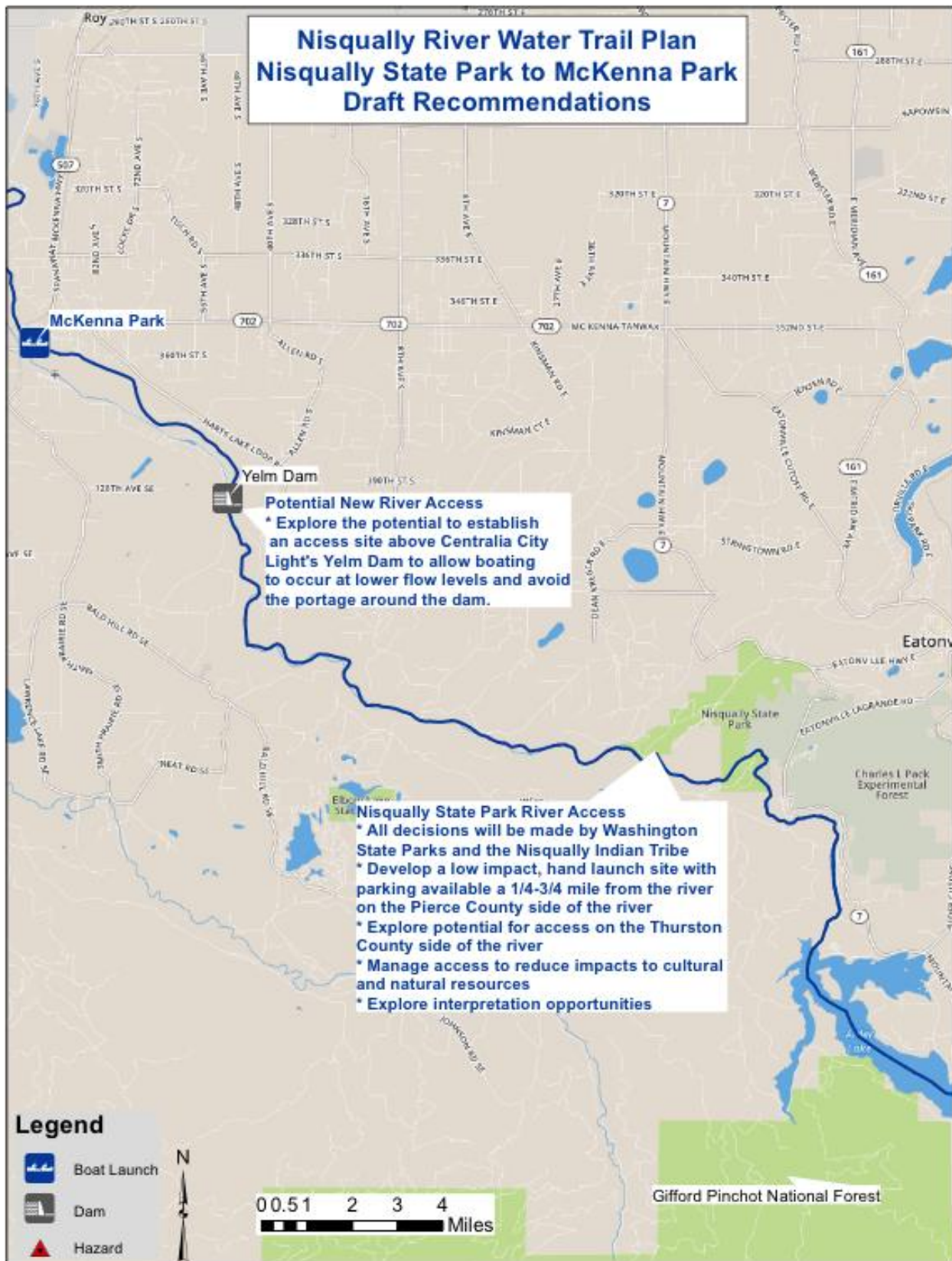
Management Options:

1. **Access site is open to anyone to use during the open season. Gates at Nisqually State Park are left open, but parking areas would be located away from the river to minimize impacts.** This option would create the easiest access for boaters and non-boaters. It would also concentrate usage to a limited time period, allowing land and resource managers to concentrate efforts. However, this option would require more intensive development at the existing launch site upstream of the Ohop confluence and would stretch staffing resources thin. This option may become more feasible if at some point in the future Nisqually State Park has on-site staff to manage access.
2. **During the open season, a gate key can be checked out for a small deposit. This could be done in partnership with a local business. Users could either park by the river or outside of the gate. Non-boaters would hike to the river; ADA parking would be located at the river.** This option potentially creates local partnerships and encourages users to visit the Town of Eatonville. It reduces the demands of staff times, and concentrates usage to a certain time frame and number of people. However, access to the site would still require a walk to the river for non-boaters. This option also relies on a business or partner that is reliable and committed.
3. **Fee-shuttle system, in which a community member and/or contractor shuttles boater vehicles between put-in and take-out locations for a fee. Shuttle driver would have gate key access at the State Park.** This option allows direct access for boaters without the need to develop a parking area. It also eliminates the need for a long shuttle. However, this option does not increase access for non-boaters, and requires a reliable and available shuttle driver. The feasibility of this option is unknown.
4. **During the open season, boaters are able to apply for a permit that grants access to the river. The permit could be valid for several days or weeks during the season, allowing flexibility for weather and flow conditions. Boaters could unload equipment by the river, and then park a short distance away and hike back down.** This option concentrates use to a specific time of year, but also allows

for flexibility on the behalf of boaters to access the site when flows and weather conditions are optimal. Hikers and other recreationists would have the ability to park closer to the river than now, and hike a short distance to the river. This option requires management resources on the behalf of Washington State Parks, but the agency is stretched thin on resources.



Draft recommendations for the lower portion of the Nisqually River Water Trail. For a complete list, see pages 42-46. Source: Susan Rosebrough, NPS RTCA



Draft recommendations for the upper portion of the Nisqually River Water Trail. For a complete list, see pages 42-46. Source: Susan Rosebrough, NPS RTCA

Coordination, Roles and Implementation

This plan is intended to lay the foundations for a collaborative path to implementation. Although the Nisqually River Council led the effort to develop this plan, many of the recommendations outlined will ultimately be implemented by the respective landowners, management agencies or businesses.

Next Steps

Some of the recommendations outlined in this plan—including the development of a new access area—may take years to realize. Others can be implemented within the next 1 to 5 years. These short-term actions should take high priority as many of them will help foster community awareness and support for the project. It should be noted that some of the implementation actions listed in this report are subject to environmental review. All of these actions will require funding to complete. A list of funding opportunities is located in Appendix 3. Additionally, NRC and partners will continue to seek funds and opportunities for implementation. The following table outlines the Workplan for the first year of implementation.

What	Who	Timeline	Why
Solicit logo ideas through contest to create unified symbol	Nisqually River Foundation	September 2017	Promote a branded and recognizable image of the water trail. Users begin to identify the trail as a symbol of connectivity from the upper to lower watershed.
Develop and install water trail signs at existing access sites from McKenna to Luhr Beach	Nisqually River Foundation (sign development) sign installation: city of Centralia, WDFW	December 2017	Increase awareness of existing public access locations.
Develop series of maps/guides of the water trail from McKenna to Luhr Beach	Steph Stroud, NPS RTCA	July 2017	Provide information on existing access points, known and potential hazards, and interpretive information for users and other recreationists.
Create initial website featuring maps, reach information, contacts, etc. Maintain for accuracy as needed	Morgan Greene (development); NRC, maintenance	July 2017; maintenance is ongoing	Provide information on existing access points, known and potential hazards, and interpretive information for users and other recreationists.

Coordinate with WDFW and Centralia Light and Power to host clean-up activities at river access sites.	TBD, in coordination with land managers	Ongoing	Create a safer, cleaner, and more enjoyable access site for boaters, fishermen, photographers, and other users.
Identify parcels along river that could be potential access sites and/or rest areas in future	Nisqually River Council, Nisqually Land Trust, Tacoma Public Utilities	On-going, beginning in 2016	Develop a list of ideal parcels, so that if opportunities for access arise in the future, partners can jump to the occasion.
Host river clean-up to remove trash and other debris	TBD	On-going, beginning in 2018	Coordinate volunteer river clean-up events to promote a more healthy and beautiful river corridor.
Begin conversations with JBLM to determine locations suited/appropriate for stretching, lunch spots, etc	Implementation Forum,	October 2017	Identify which spots along JBLM property would be appropriate for users to take a rest stop on.
Begin conversations with Weyerhaeuser to determine feasibility of increased access through their property	Washington State Parks, Implementation Forum	TBD	Identify possible access areas that could be developed in the future
Identify and pursue funding sources to support coordination of Forum and implementation projects	Nisqually River Council; landowners; management agencies	On-going	Support the on-going implementation and management of water trail through sustainable funding sources

Partnerships

The Nisqually River flows through multiple jurisdictions and ownerships, thus requiring a broad and inclusive water trail stakeholder group. Key partners in the implementation of the plan will be:

- Nisqually River Water Trail Forum, coordinated by the Nisqually River Council. Ideally, members of the planning Advisory Committee, along with other stakeholders, will convene 1-2 per year to identify priority actions and track progress
- Washington State Parks (Landowner)
- Washington Department of Fish and Wildlife (Landowner, resource manager)
- Nisqually Indian Tribe (Landowner, resource manager, cultural significance)
- City of Centralia (Landowner)

- Nisqually Land Trust (Landowner)
- Interested citizens and user groups (Community based support)

Trail Coordinator and Forum

The Nisqually River Council will continue to provide leadership to oversee the short and long-term implementation of this plan and development of the water trail. To do that, the NRC will host an annual Implementation Forum comprised of all interested stakeholders. Specifically, we hope this Forum includes the Nisqually Indian Tribe, river recreationists, land and resource managers, emergency responders and interested citizens. The Forum will develop workplans, monitor progress, and determine priority actions.

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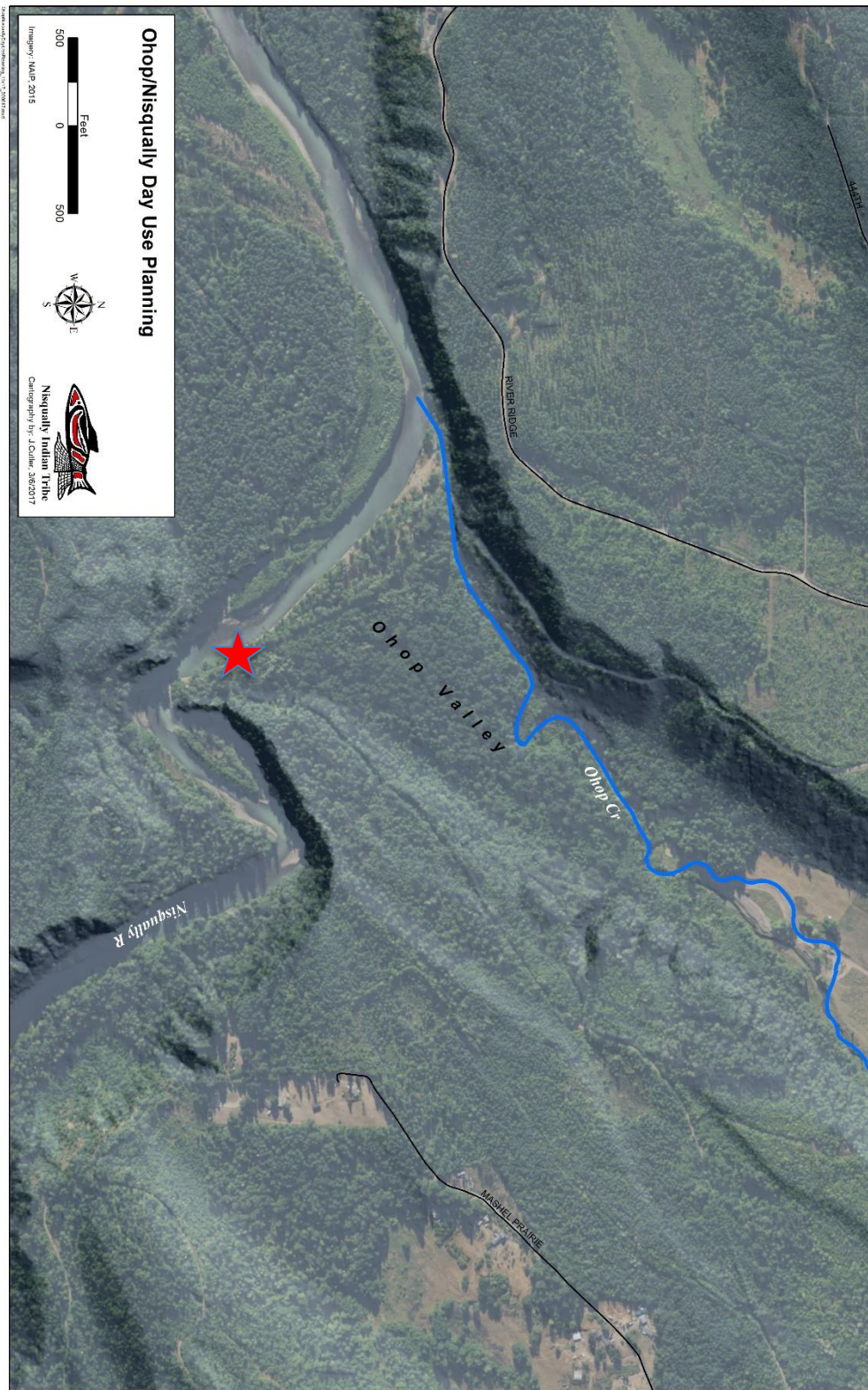
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Map showing desired location of day use area in the Nisqually State Park. Location subject to approval by Washington State Parks and the Nisqually Indian Tribe. Map by Nisqually Tribe GIS Program; star added by core planning team

Site Name:	Site #:
Picture(s)	
<p><u>Site Description/Environment:</u></p> <p><u>Attractions/Features:</u></p>	
<p><u>LOCATION:</u> RM: River Right or Left: GPS Coordinates: Land Manager/Owner:</p>	<p><u>Access:</u> Distance from roadway to the river: Boat in Only: Parking Available: Size: Parking Pass Required: Site Status:</p>
<p><u>Recreational Opportunities:</u></p> <p><u>Regulations:</u></p>	<p><u>Amenities:</u></p>
<p><u>Environmental Impacts/Challenges:</u></p>	<p><u>Recommendations:</u></p>
<p><u>Other Notes/Additional Information:</u></p>	

Blank copy of data sheets used to collect site information.

Appendix 2 – Survey Results

Available in PDF format at www.watertrail.nisquallyriver.org

Appendix 3 – Potential Funding Sources

Available in PDF format on www.watertrail.nisquallyriver.org