

Squaxin Island Tribe
Skookum Watershed Fish and Wildlife/ Riparian Habitat Acquisition
and Protection Plan

February 26, 2018
Erica Marbet



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Introduction

The Squaxin Island Tribe (SIT) is descended from the maritime people who have lived and prospered along the southernmost inlets of Puget Sound for millennia. In 1854, Squaxin leaders signed the Treaty of Medicine Creek with the United States government. In that Treaty, the Squaxin people reserved the right to hunt, gather, and fish at all usual and accustomed places, and members continue to exercise those rights today.

The ancestral lands ceded to the United States government (by the Squaxin Island, Nisqually and Puyallup Tribes) in the 1854 Treaty of Medicine Creek included 4,000 square miles, or 2,560,000 acres. Three small reserves: Squaxin Island, Nisqually Reserve, and Puyallup Reserve were set aside. Only one small island, four and a half miles long and a half mile wide was reserved as the main area for all of the Squaxin people to live. The island was named after the people of Case Inlet and became known as Squaxin Island.

The people gradually began to leave the island to take up permanent residence near their original homes. By 1862, the number of island residents had dwindled to 50. With so few tribal members remaining on the island, the Indian agency headquarters was moved to Puyallup. By 1959 only four year-round residents continued to live on the island. Today there are none. Tribal headquarters are now located in Kamilche, between Little Skookum and Totten Inlets, where hundreds of acres of land has been purchased, and a thriving community has been established. Many of the Tribe's commercial enterprises and personal residences are now situated at the base of the Skookum Watershed.

Goals and Objectives

With acceptance of the 2017 Annual Report on February 19th, 2018, the Squaxin Island Tribal Council reaffirmed a Natural Resources Department (NR) workplan that includes an ongoing mission, goal, and objectives related to Treaty rights and Tribal resources.

Mission: Mother Earth and her resources are the cultural foundation for the people of Squaxin Island—the Natural Resources Department will work to sustain and enhance those Tribal resources.

The Natural Resources Department is to maintain a leadership role in perpetuating natural resources including water quality, fish, shellfish, wildlife, timber and plants, while promoting, preserving, protecting, and restoring habitat.

Goal: Promote the protection, restoration, and enhancement of the productive capacity of the Tribe's resources and their habitat.

Objective 1: Provide policy and technical support for development and implementation of aquatic resource protection strategies.

Objective 2: Document aquatic habitat conditions and track resource trends throughout the Tribe's ceded areas; conduct watershed scale assessments as the basis for developing resource management and restoration strategies.

Objective 3. Research, develop, and implement habitat restoration and protection projects.

Objective 4. Work cooperatively with state, federal, county, city, and private agencies and individuals to ensure the protection of Treaty rights and Tribal resources.

To fulfill these obligations, NR has conducted multiple watershed-scale assessments of the Skookum Watershed (Bibliography). Nearshore habitat is assessed in a consultant report (Anchor Environmental 2004). NR has worked in partnership with the Washington State Department of Ecology and Mason County to investigate water pollution through federal Clean Water Act procedures (Ahmed and Hempleman 2006, Mason County PIC 2013-2015, Marbet 2017). Also, NR has worked with WRIA 13/14 Lead Entity for salmon recovery to review and coordinate nearshore, riparian, and aquatic habitat protection and restoration plans (Kuttel 2002 and Shared Strategy for Puget Sound 2005).

Recently, the Tribe built hydrogeologic cross-sections of Skookum Valley, inventoried water rights, and established a wellhead protection area (Pitre and Willhelm 2017)

Out of these efforts, NR has identified a list of key actions necessary in the Skookum Watershed to restore some approximation of the ecological functions required to support Treaty rights and Tribal resources. Some of the actions relate to restoration projects like supplementation of large woody debris in the stream channel, reforestation of riparian buffers, and reconnection of the stream channel to its floodplain. Others are related to hydrology, hydrogeology, water rights, forestry practices, and sediment transport.

During the research, several large parcels of land emerged as having extraordinary value for fish and wildlife species. These parcels are at risk of development and further impairment of ecological functions. NR's review concludes that they should be protected in perpetuity through fee simple acquisition or conservation easements.

Recommendations

- NR will partner with Capitol Land Trust to ascertain future plans and interests of several key landowners in the Skookum Watershed.
- For those landowners willing to consider conservation options, negotiate terms for protection and restoration of key ecological functions.
- Raise funds sufficient for fee simple acquisition or application of conservation easements and for restoration activities.
- Retire surface water rights.
- Promote water conservation.
- Broaden the Skookum Watershed conservation partnership to include valley residents, government representatives, the timber industry, and the railroad.

Adoption

The Squaxin Island Tribal Council passed a resolution on February 28th, 2018 adopting the Skookum Watershed Fish and Wildlife/ Riparian Habitat Acquisition and Protection Plan and directing NR to implement its recommendations (see attached).

Inventory

Landscape:

The greater Skookum Inlet Watershed including the marine water and drainages of Little Skookum Inlet encompasses 31 square miles—the portion of the watershed draining through Skookum Creek is about 20 square miles (**Figure 1**). The mainstem of Skookum Creek is 12 miles long. It begins in a series of lowland wetlands, then runs down steep ridges of basalt hills and through the clay deposits of an ancient lakebed. Through much of the mid-valley, the channel has incised into the valley floor. A well-developed estuary has formed at the mouth of the creek and offers extraordinary transitional habitat between fresh and salt water.

The south flowing tributaries to Skookum Creek are impeded by 34 small culverts and one drilled rock tunnel, many of which are under the Puget Sound Pacific Railroad. Passage of gravel downstream and fish upstream is impaired. The north flowing tributaries are bisected by several State Hwy. 108 bridges and culverts, some of which are full or partial barriers.

Skookum Creek gauging station at Highway 101 has recorded a mean annual discharge of 54 cubic feet per second (cfs) of the past thirteen years. The average of 7-day average of the lowest discharge of the year is 1.5 cfs, with a maximum instantaneous discharge of 1550 cfs, recorded in the 2009 water year. Low streamflow combined with sparse riparian shade in some reaches, along with livestock access to the creek, results in elevated temperature and fecal coliform bacteria.

Land use is predominately timber production at higher elevations with livestock and pasture/hayfields in the mid and lower valley. There is also a large cedar mill, downstream of which are small farms and residences purchased by the Tribe, along with the Tribe's casino hotel and other business enterprises near Little Creek. One of the larger tributaries named Hurley-Waldrip Creek flows from the south and intersects Skookum Creek mid-valley; it is heavily modified with numerous hobby farms and one apartment complex.

143 acres of the Skookum estuary and some associated riparian and uplands are already protected in the Washington State Department of Natural Resources Natural Heritage Program as the Skookum Inlet Natural Area Preserve. 132 acres of the downstream portion of the ancient lakebed (mid-valley) is protected in the USDA Wetland Reserve Program (WRP); it contains significant wetlands currently disconnected from the creek because of channel incision.

The Squaxin Island Tribe has set aside 150 foot buffers on each side of Skookum Creek on Tribal property to protect ecological functions. They have already replanted riparian buffers a phased approach to instream habitat improvements.

Water Quantity

A set of properties have certificated surface water rights (732 afy) claims (53 afy) and large groundwater rights (201 afy) (Pitre and Wilhelm 2017). Central to returning flow to Skookum Creek would be the verification of surface water and groundwater uses and eventual retirement of surface water uses first, then groundwater uses, if at all possible.

Anadromous Fish

Skookum Creek is host to several stocks of salmonids; Deep South Sound tributaries Coho, Upper Skookum Inlet Fall Chum, abundant sea-run Cutthroat trout, and occasional steelhead. The chum stocks were rated as healthy in 2002, but the coho stock is in severe decline. ESA-listed juvenile chinook salmon from other areas of Puget Sound have been found to frequent South Sound estuaries on their outbound migration.

Spawning is concentrated in three areas: upstream of the ancient lakebed and two downstream tributaries- Reitdorf and Little Creeks.

Shellfish

In addition to the clams and oysters of Little Skookum Inlet, Skookum Creek hosts the unique Western Pearlshell freshwater mussel throughout its middle and lower reaches.

Wildlife

The Skookum Watershed is home to a diversity of species. The Washington State Department of Fish and Wildlife lists mountain quail, osprey, purple martins, and bald eagles in the Priority Species database. The wetland on the USDA Wetland Reserve Program property includes a concentration of waterfowl and significant amphibian populations. About 80-100 elk overwinter along the margins of the ancient lakebed in mid-valley agricultural fields.

Needs Analysis

The Treaty fishing area for SIT covers nearly 1000 square miles of freshwater tributary to the marine waters south of the Tacoma Narrows Bridge. In order to set protection and restoration priorities among 22 of the larger watersheds in WRIA's 13, 14, and 15, NR calculated the level of impervious surface using 2002 satellite data. Watersheds with 5% or less impervious surface have a far greater likelihood of biological recovery than those with more. Once a threshold of 15% impervious surface is reached, some significant level of biological impairment is permanent.

The analysis concluded that the Coulter Watershed in Mason/Kitsap Counties and the Skookum Watershed in Mason County have the lowest levels of impervious surface among the 22 watersheds. Skookum watershed overall has less than 5% impervious surface, but the casino area has 33% impervious surface. Since the Skookum Watershed is also host to the Squaxin homeland, it is an immediate priority for protection and restoration.

Fish and Habitat

In the Skookum Watershed, an Ecosystem Diagnosis and Treatment (EDT) study was completed to evaluate habitat concerns and identify solutions to improve and sustain coho populations (Mobrand 2004). The analysis outlined several issues:

- Coho outmigrant and spawner populations are less than half of historical potential.
- The most significant biological impairments are: habitat diversity and quantity throughout the watershed and sediment load/transport; summer water temperatures and upper watershed fish passage barriers are also concerns.

- Priorities for protection (that if allowed to degrade further will dramatically lower coho productivity) include: 1) middle reaches of Skookum Creek in the ancient lakebed and 2) lower reaches of Skookum Creek and its estuary.
- Priorities for restoration include the middle and lower reaches, plus the spawning areas in Little Creek and upper Skookum Creek. This includes riparian planting and reconnection of isolated wetlands and stream segments.
- Repair of 34 blocking culverts in the valley, especially along the Puget Sound Pacific Railroad. This is a high priority, but our ability get to the railroad to do the repairs is very slim, as railroads are protected by federal laws.

Water Quality

A water quality improvement report was completed in 2006 in cooperation with Washington Department of Ecology (Ahmed and Hempleman 2006). Subsequent Mason County water quality reports were created in 2013, 2014, and 2015. Finally a recent water quality assessment of the reservation area was completed in 2017 (Marbet 2017). The reports share similar results in that:

- Skookum Creek does not meet water quality standards for summer stream water temperatures and fecal coliform bacteria.
- Shade is the dominant factor influencing those temperatures
- Current shade levels are lowest in the middle reaches and need to be restored to their full potential.
- Reduction of bacterial concentrations involves keeping livestock away from streams.

Water Quantity

Skookum streamflow reaches less than 1 cfs in late summer. Central to returning flow to Skookum Creek is the verification of surface water and groundwater uses and eventual retirement of surface water uses first, then groundwater uses, if at all possible.

Shoreline

A survey of Little Skookum Inlet subsequent to publication of the Anchor report (2004) on nearshore habitat in Mason County recommended inclusion of Skookum Estuary in the list of priority nearshore areas of conservation. The Tribe has also done a restoration prioritization of coastal catchments in Little Skookum Inlet, which can be seen in an online mapper at <https://maps.squaxin.us/portal/home/>. A screen shot of the map prioritization is seen in **Figure 2**.

Capital Improvement Program

Land Use Strategy

NR will work to secure the land use strategy portrayed in **Figure 3**: The uplands will remain conserved in long term forestry. The majority of the valley will ultimately be placed in a conservation status, with large targeted restoration projects, including wetland restoration and reconnection, riparian replanting, and large woody debris restoration. An overarching budget is identified in Table 1.

Table 1. Capital Improvements

Acquisition	Cost	Restoration	Cost
Upper Skookum Critical Rearing		Riparian Planting and LWD Supplementation.	\$ 200,000
Lower Skookum Estuary	\$ 100,250	Dike Removal	\$ 400,000
Middle Skookum Lakebed	\$ 3,474,000	Geomorphic restoration/Wetland Reconnection 1--6200' x \$200/ft	\$ 1,240,000
		Geomorphic restoration/Wetland Reconnection 2--1500' x \$200/ft	\$ 300,000
		Geomorphic restoration/Wetland Reconnection 3--1200' x \$400/ft + \$300,000 for RR bridge	\$ 780,000
		RR Culverts-- 36 x \$50,000	\$ 1,800,000
		Reforestation	\$ 220,000
		LWD Supplementation	\$ 640,000
Total	\$ 3,574,250		\$ 5,580,000

Riparian Conceptual Visualization

The series of maps in **Figure 4** (lower valley), **Figure 5** (middle valley), and **Figure 6** (upper valley) show conceptual riparian and wetland buffers only. The purpose of these figures are to create a minimum starting point for protection/restoration. Current actual riparian and wetland buffers vary widely by ownership and land use. However, the buffers in these figures show a basic effort at supporting productivity for salmon. Large restoration projects in the middle valley will change stream course and expand wetlands, there by changing **Figure 5** over time.

Public Involvement

Ecosystem Diagnosis and Treatment (EDT, Mobrand 2004) analysis was presented for review and comment in 2005 at several public meetings, including one at the Little Creek Casino and also at the South Puget Sound Salmon Enhancement Group annual meeting. Local government representatives, state representatives, fisheries managers, and the interested public all had opportunity to comment and ask questions.

The water quality improvement technical report (Ahmed and Hempleman 2006) was extensively reviewed by a Totten/Little Skookum Technical Advisory Group comprised of agency, Tribal, and stakeholder members. Implementation planning has been put on hold by the Washington Department of Ecology.

The 2006 SIT Skookum Watershed Fish and Wildlife/Riparian Habitat Acquisition and Protection Action Plan was developed as an outcome of these processes. At that time, and periodically since 2006, NR has also consulted with the USDA/NRCS about potential improvements to the stream channel geometry that would involve their Wetland Reserve Program conservation easement, and with the Puget Sound and Pacific Railroad about culvert improvements. *All issues remain the same in 2018.*

Mason County Pollution Inventory and Correction Reports: 2013, 2014, and 2015, and the 2017 Water Quality Assessment Report (Marbet 2017) have been shared with clean water stakeholders at the

Oakland Bay Clean Water District meetings and multiple Mason County Water Quality Technical meetings.

Skookum Creek streamflow data, collected from the SIT NR's gauging station at Hwy. 101 are shared with Washington Department of Fish and Wildlife for the purpose of assessing flow conditions during cutthroat trout migration.

This interim plan has been shared was shared with the WRIA 14 planning group on February 15, 2018. It was shared with and approved by the Squaxin Island Tribal Council, as representatives of their constituents, on February 27, 2018.

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Pitre and Wilhelm. 2017. Technical Memorandum: Skookum Basin Instream Flow Regulations and Water Rights

Pitre and Wilhelm. 2017. Power Point Presentation: Skookum Basin Hydrogeological Study

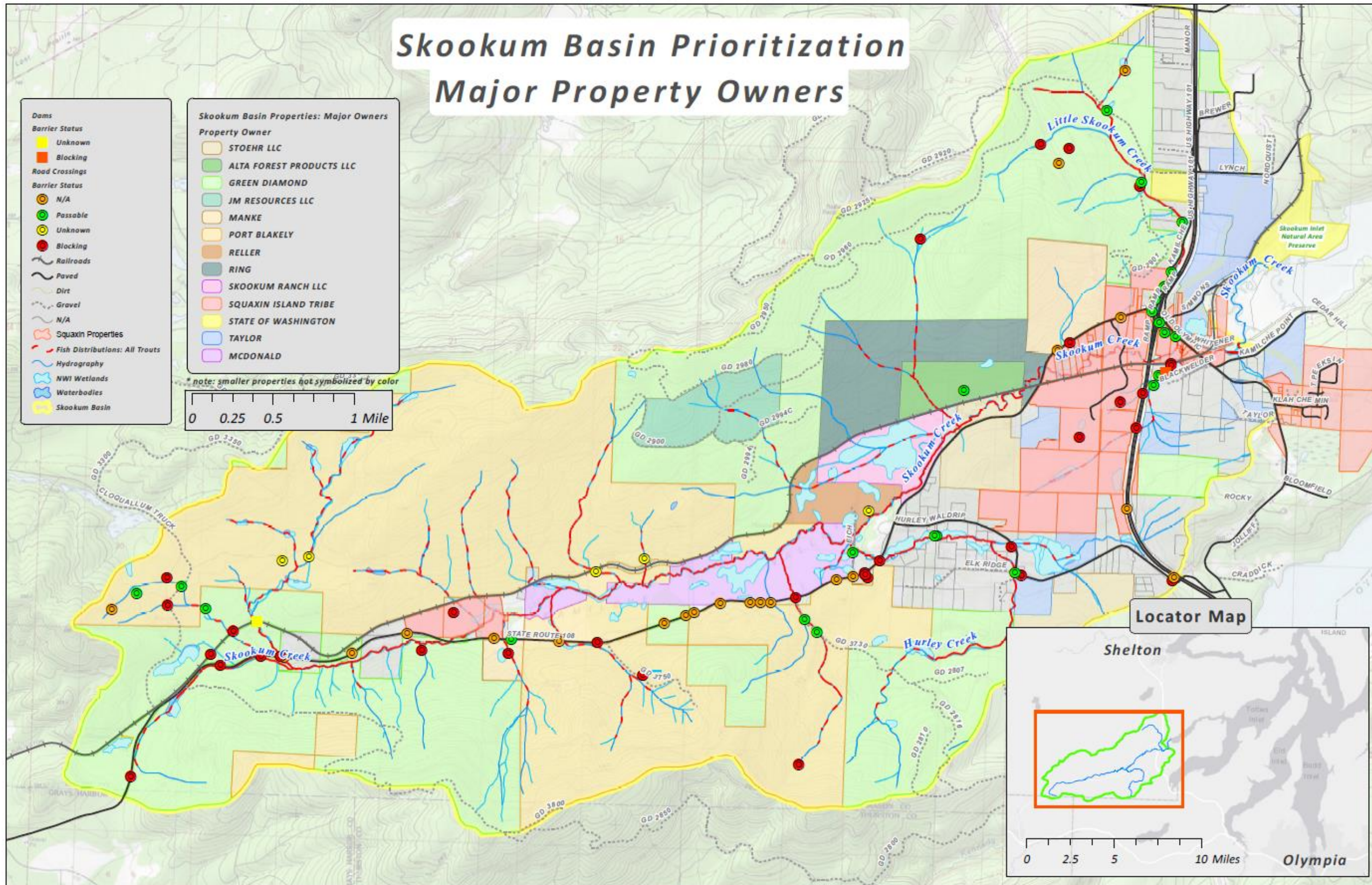


Figure 1. Skookum Valley Map with major ownerships.

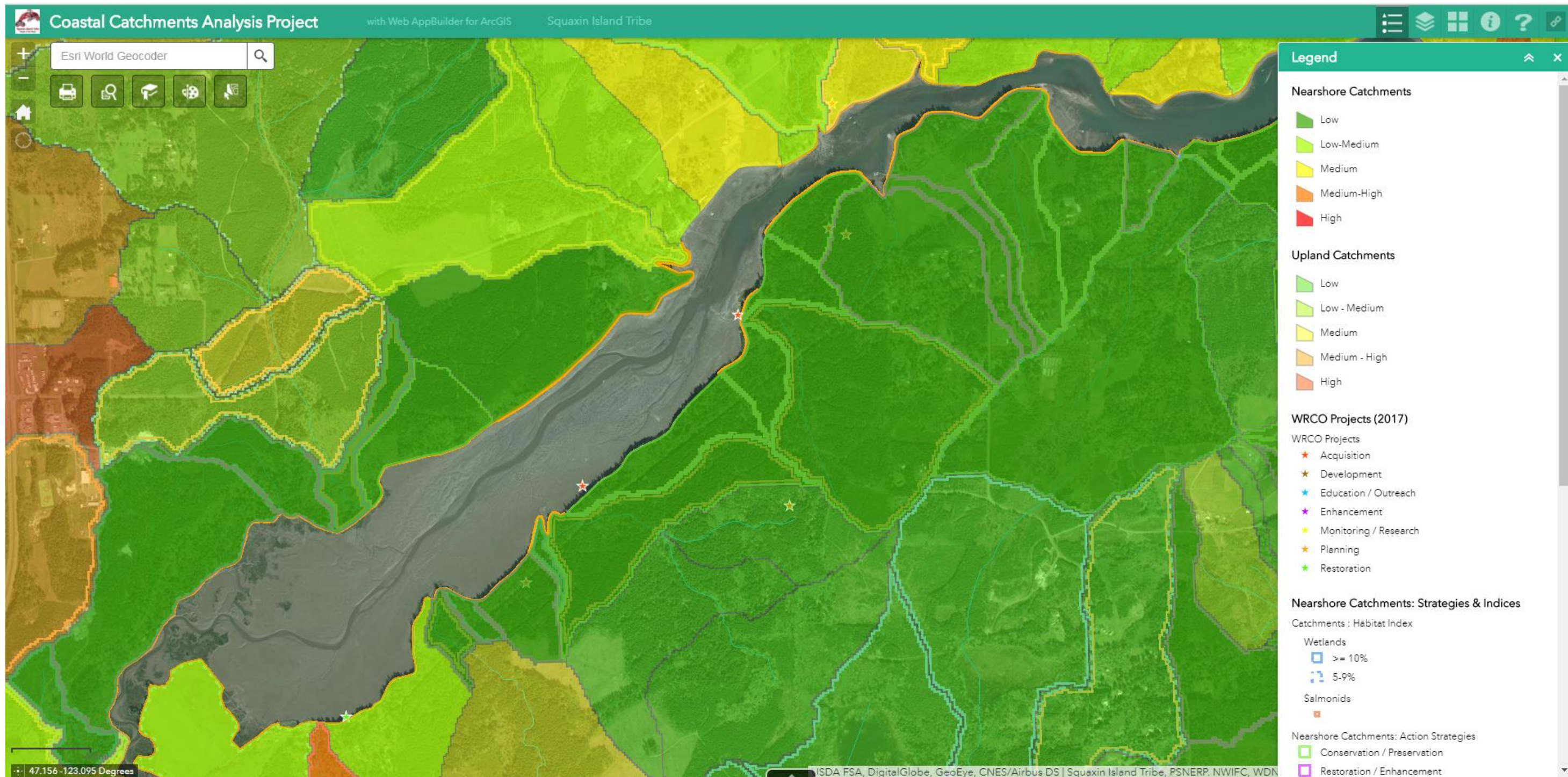


Figure 2. SCREEN SHOT FROM COASTAL CATCHMENTS PRIORITIZATION ONLINE MAPPER. <https://maps.squaxin.us/portal/home/>

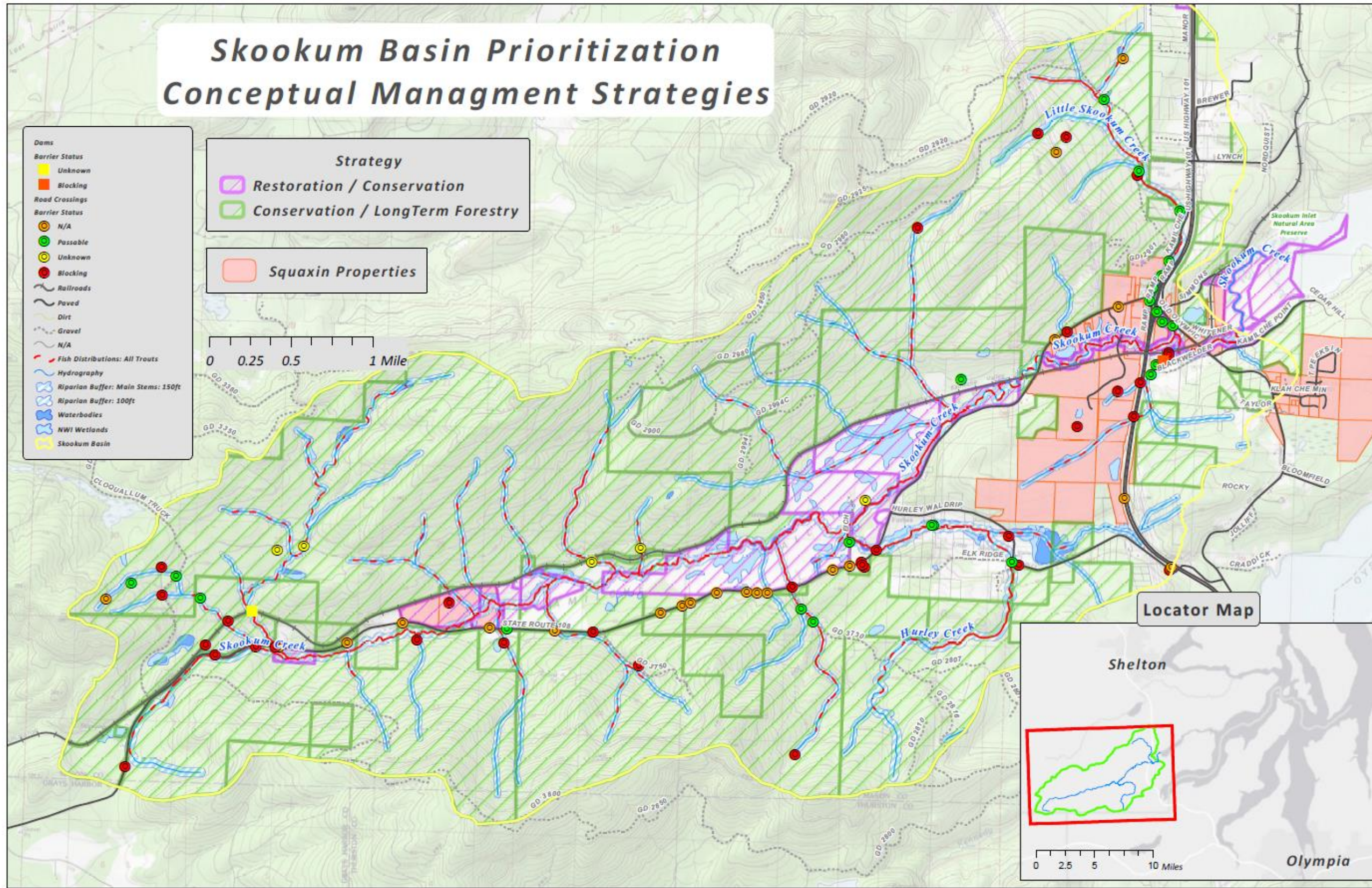


Figure 3. Conceptual restoration and conservation strategy for Skookum Valley.

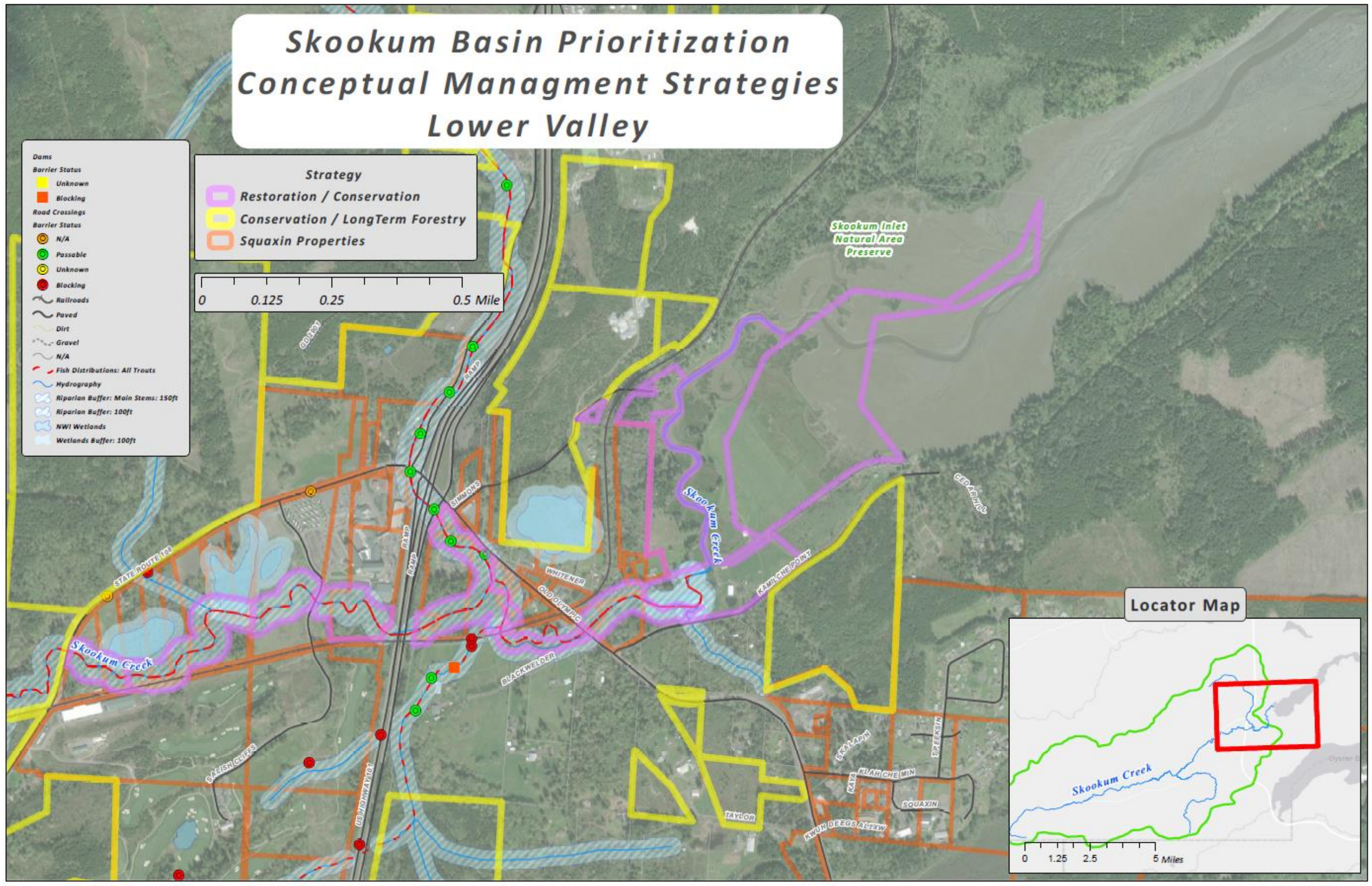


Figure 4. Lower Skookum Valley conceptual depiction of riparian buffers for restoration and conservation.

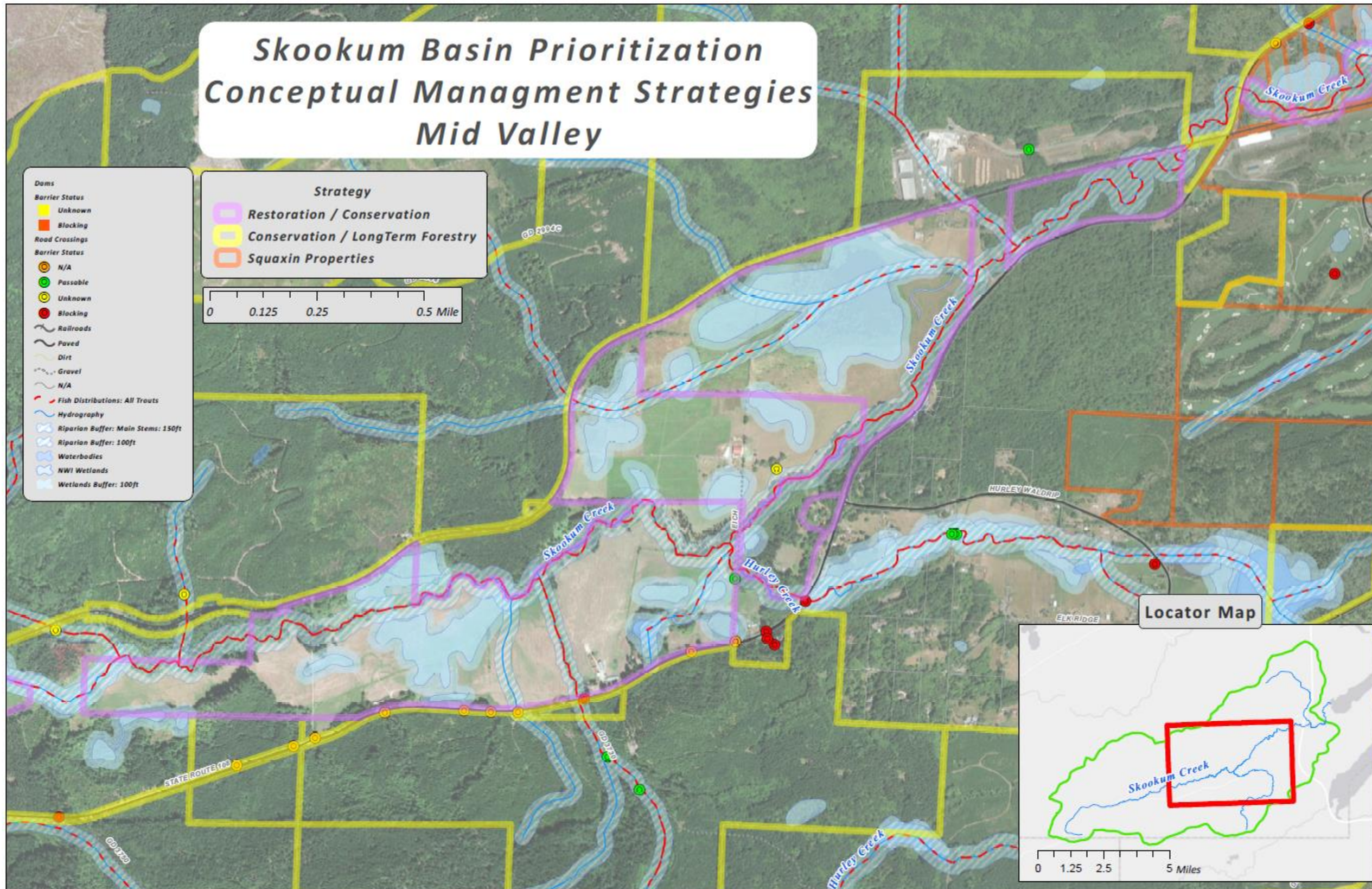


Figure 5. Middle Skookum Valley conceptual depiction of riparian buffers for restoration and conservation. This map may change markedly with wetland restoration and riparian reconnection in the valley.

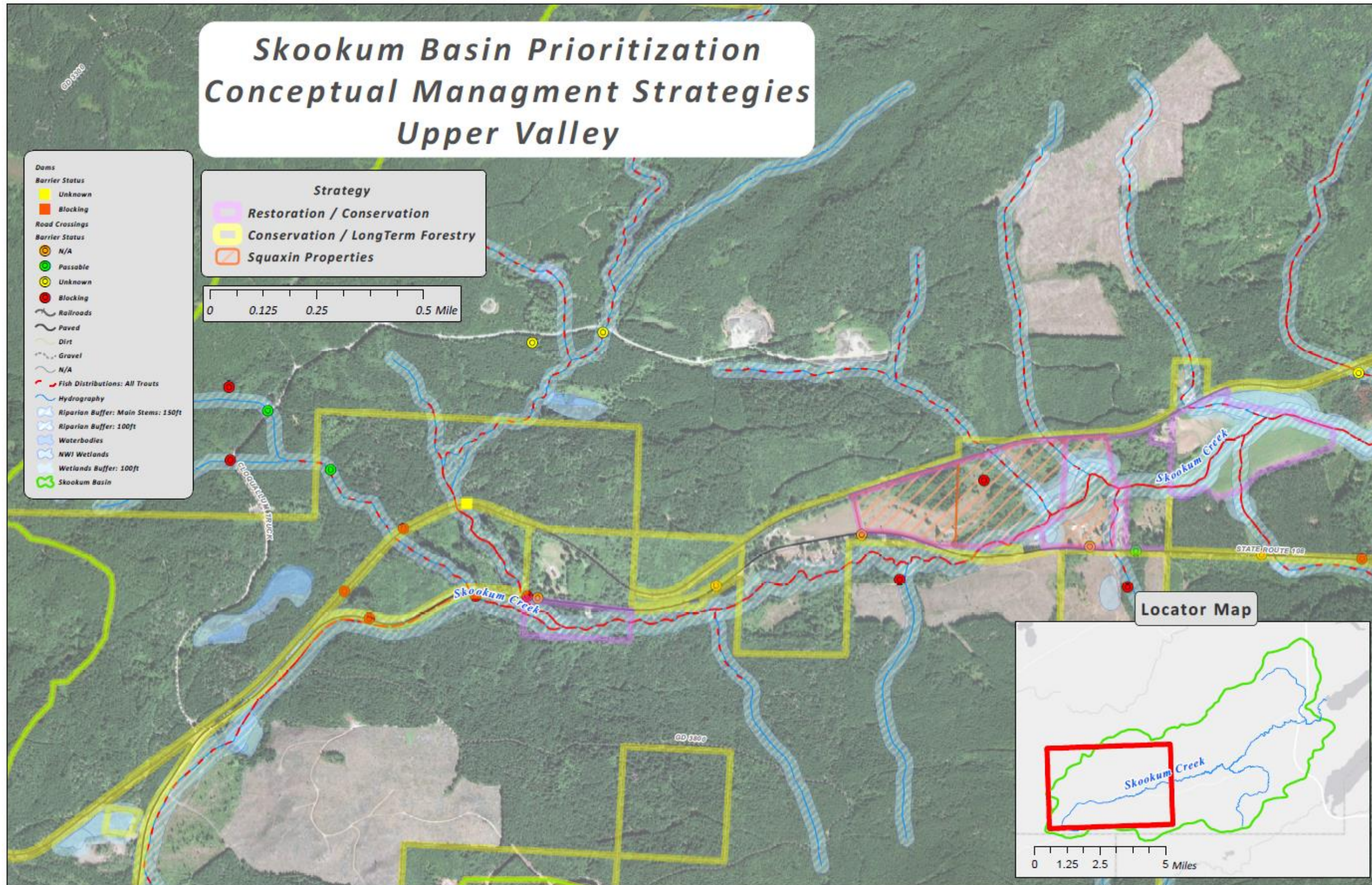


Figure 6. Upper Skookum Valley conceptual depiction of riparian buffers for restoration and conservation.