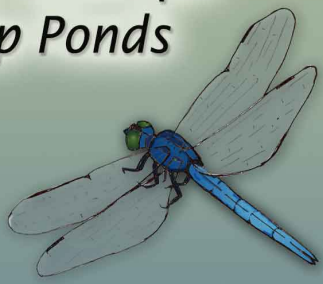
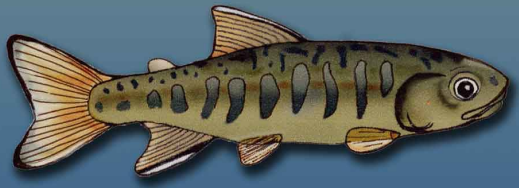
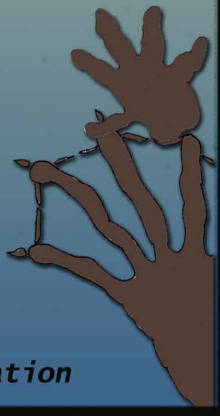
Twisp Ponds Discovery Guide

An Ecological Trail Guide for Visitors at Twisp Ponds







Methow Salmon Recovery Foundation

Twisp Ponds Overview

Twelve years ago, the area you are now standing was slated for residential development with plans for the construction of four homes. In 2002, the Methow Salmon Recovery Foundation purchased the property to protect and restore valuable salmon and wildlife habitat. Since that time, the Twisp Ponds complex has grown to 37 acres on both sides of the Twisp River.

Along the length of the property, a series of channels and ponds have been reconnected to the Twisp River. This benefits recovery of endangered spring Chinook salmon and threatened steelhead and bull trout and provides important habitat for other native fish species and a other aquatic and terrestrial plants and animals.

Photos-Top (before) and bottom (after) photos of the same location show the results of restoration efforts below the Twisp Ponds overlook.

The trails in this area allow visitors to explore diverse riparian habitat close to downtown Twisp. The Twisp Ponds provide an excellent opportunity to learn about riparian and aquatic ecology and the benefits of local salmon restoration efforts.

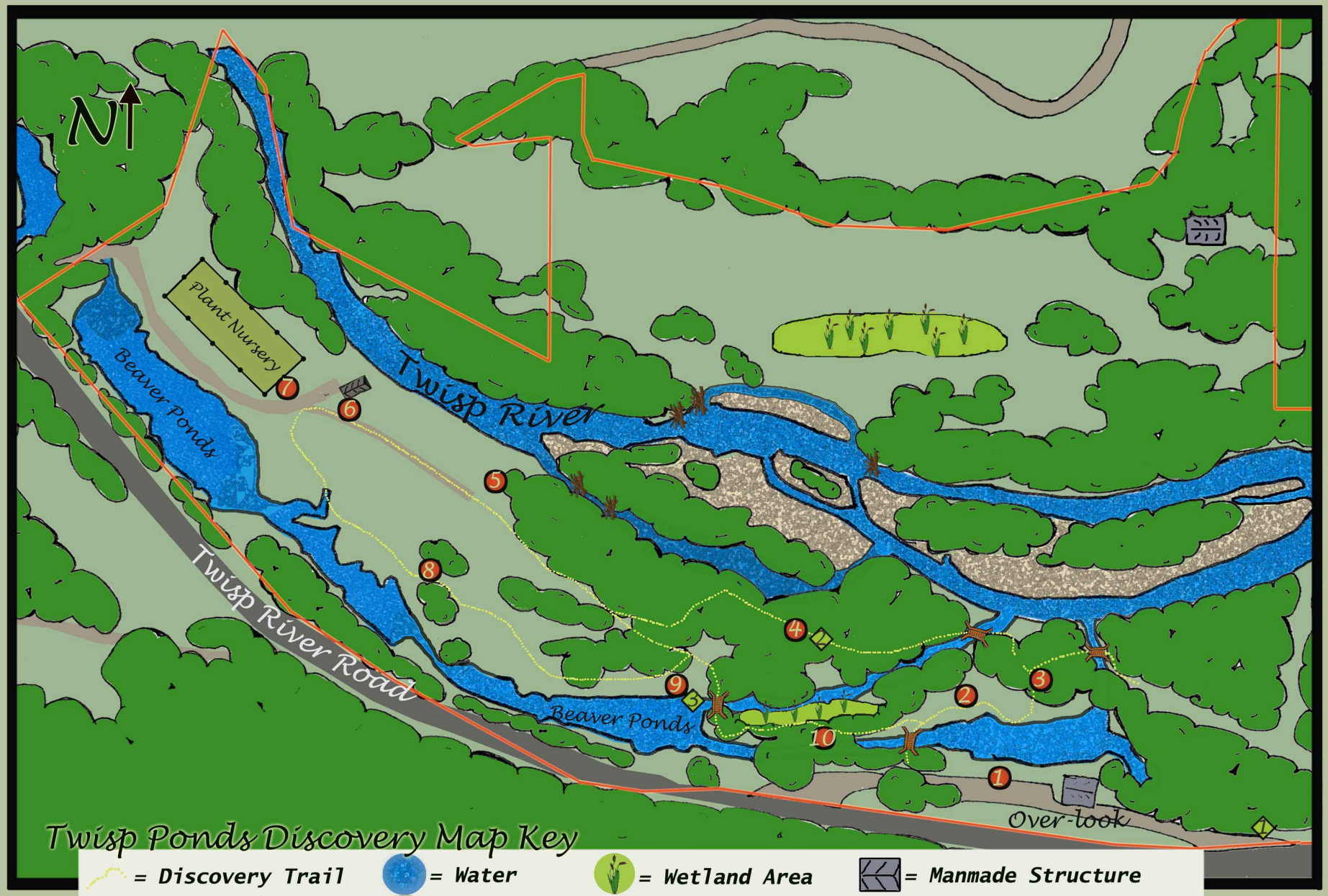
Outdoor Education at the Twisp Ponds

Twisp Ponds has housed the Watershed Watchers program since 2004. With the aid of local scienitists and restoration practitioners, this program teaches local school children about riparian and stream ecology, water quality, and fish and beaver habitat. Additionally, these children have been responsible for planting many of the trees and shrubs you will encounter during your visit to the Twisp Ponds.

Above- Students learn about steeam ecology at the Twisp Ponds.

How to Use This Guide

Please take the opportunity to stroll through the Twisp Ponds and dive deeper into the mysteries and wonder of the aquatic and riparian areas of the Methow Valley. The numbered sections in this guide correspond to numbered markers along the trails (see map on pages.3-4).



Twisp Ponds Discovery Map Key

- = Discovery Trail
- = Discovery Station
- = Art Station
- = Property Boundary
- = Water
- = Gravel Bar
- = Vegetation
- = Wetland Area
- = Primary Road
- = Secondary Road
- = Manmade Structure
- = Trail Bridge
- = Engineered Log Jam

Station 1 – Fish Rearing

The ponds you see in front of you are home to native fish spring Chinook salmon and steelhead, as well as coho salmon, mountain whitefish, bridgelip sucker and longnose dace. The ponds provide important summer and winter habitat for these fish. Several species, including steelhead and bridgelip sucker, spawn in the ponds complex between May-July.

A spawning male bridgelip sucker.

For the majority of fish, the Twisp Ponds provide important rearing habitat. Rearing is the early growth stage for fish after hatching. During this time the young fish are especially susceptible to being preyed upon because they are small and cannot swim quickly to avoid predators. Habitat that provides them plenty of cover to hide from predators and abundant food for growth is critical to their survival. The ponds provide just this sort of habitat, supporting the recovery of imperiled fish species dependant on the Methow watershed.

The ponds are also an important site for the release of hatchery born coho salmon which are being re-introduced to the Methow by the Yakama Nation. Coho were once the most abundant salmon in the Methow, but over fishing and a historic dam at the mouth of the Methow River eradicated them in the early 20th century. Young coho are brought from the Winthrop National Fish Hatchery and released into the ponds in the spring each year. They then spend about six weeks "rearing" in the ponds prior to beginning the epic 650 mile journey to the Ocean.

A young of the year redband trout or steelhead.

Station 2 - Riparian Restoration

Reestablishing riparian (streamside) forests along streams is an important element of salmon and watershed restoration efforts in the Methow. Over the past 100 years, large swathes of riparian habitat have been cleared for agricultural and residential development. Habitat loss has had far reaching effects on our river systems. Riparian vegetation is responsible for a number of important ecosystem functions. It provides shade that cools the stream and iprovides a source of large wood to enhance instream habitat for fish and wildlife Healthy riparian areas stabilize streambanks and provide important sources of nutrients. Riparian forests are important for more than just fish. They provide critical habitat for migrating birds and other wildlife. These restored areas are an oasis in the otherwise dry landscape of the Methow Valley.

Since 2002, Methow Salmon Recovery Foundation has been a leader in reestablishing riparian buffers within the Methow watershed, revegetating over 50 acres at numerous sites in the valley. At Twisp Ponds, school children have planted over 2500 riparian trees and shrubs through the Watershed Watchers program. These plantings are beginning to provide many of the important riparian habitat benefits.

Young restoration technicians planting a newly created stream channel in 2009.

Station 3 – Watershed Watchers

Twisp Ponds has been home to the Watershed Watchers program for the past nine years. Each year, the program brings school groups out to the Ponds to learn about watershed ecology and connect them with local restoration efforts. Students, teachers and parent volunteers spend the day at the Ponds, visiting a series of stations taught by local watershed scientists. Originated by the U.S. Forest Service by Methow Salmon Recovery Foundation, Watershed Watchers is supported by a strong partnership of contributors including Methow Salmon Recovery Foundation Wild Fish Conservancy, Methow Arts, Methow Conservancy, Yakama Nation, Bureau of Reclamation, USFS, USGS, Washington Department of Ecology, and Bonneville Environmental Foundation.

Participating classes range from kindergarten though high school and include schools from throughout the county. Visit on a Watershed Watchers day and you might find students identifying aquatic insects, planting red osier dogwood seedlings, creating watercolor images of a cottonwood leaf or sampling for coho smolts. Over these past seven years, the program has reached out to over 1000 students, parents and teachers, establishing an important link between the community and salmon restoration efforts.

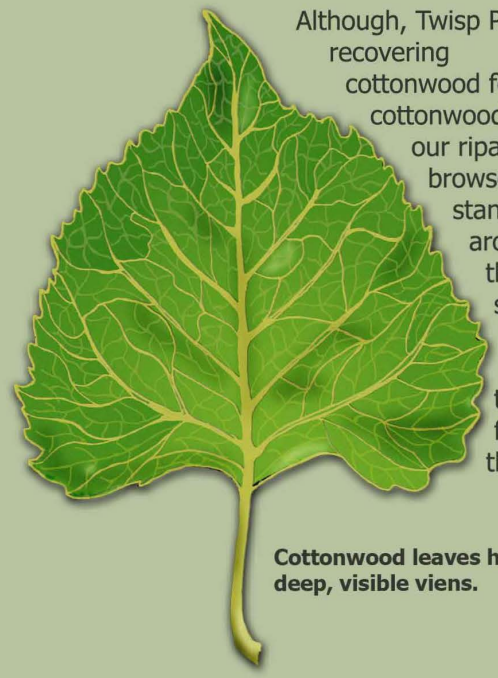
Watershed Watchers helps educate through direct hands on learning.

Station 4 - Cottonwoods

Black cottonwoods form the dominant overstory for much of the riparian habitat along the Methow River. Cottonwoods grow fast and tall, sometimes reaching 80 feet in only 30-40 years. Cottonwoods are not long lived and will typically start breaking limbs and trunks off after only 60 or 70 years. Black cottonwoods play a critical role in the function of our riparian forests. They provide shade to cool stream temperatures and maintain high water quality, leaf debris helps to provide nutrients for both terrestrial and aquatic species and their propensity to fall over adds much needed large wood to our river systems helping create pools and hiding cover. Cottonwoods provide excellent habitat for songbirds as well as cavity nesting birds and mammals. Mushrooms growing on down cottonwood logs help promote decay and return nutrients to the soil.

Cottonwoods are flood adapted. As river levels drop in the spring, the trees send out millions of tiny seeds, wrapped in a little white fluff. These seeds fly out over the valley in hopes of landing on a patch of cool, moist soil. The seeds germinate in just a day or two and then are up and growing. Loss of side channel and floodplain habitat has reduced the amount habitat where they prefer to grow.

Although, Twisp Ponds is an example of a recovering cottonwood forest, many of the Methow's cottonwood stands are in peril due to loss our riparian habitat and intense deer browse. There are still many stands of big mature cottonwoods around but if you look carefully they lack the vigorous young saplings growing up to take their place. Helping to restore floodplain functions is one step to ensuring that our cottonwood forests remain a key habitat in the Methow watershed.



Cottonwood leaves have scalloped edges and deep, visible viens.

Station 5 - Stream Habitat

Fish need a variety of places in a stream to feed, avoid predators, and reproduce. Just like the various rooms in our human households (kitchens, bedrooms, and bathrooms) have a particular function, the various locations in a stream play particular roles in the lives of fish. A fish's need for specific habitat features changes as they grow from a one inch long hatchling into a three foot long spawning adult, so it takes a variety of habitat features to house a healthy fish population.

Scientists refer to the amount of variety of stream habitat as "complexity" and generally the more complex a stream is the better suited it is for fish survival. One components of a complex stream is overhanging riparian vegetation that provides shade and habitat for insects that become food for fish. Log piles provide cover for fish as well as the insects they feed on. Logs interact with streamflow to sort gravel, and boulders provide shelter from strong stream currents. Look into the river and see if you can locate indicators of stream complexity and think about how these may provide habitat for our fish and other aquatic inhabitants.

Downed wood and live riparian vegetation help create natural fish habitat that is "complex".

Station 6 - Monitoring

While you are you may see someone snorkeling in the stream observing fish, working on a platform in the river measuring and tagging fish, or using a hand lens to examine a riparian plant. If you do, it's a good bet that this is one of the Methow's local scientists engaged in "monitoring". Monitoring takes place to observe the condition of the fish and their habitat so we can better understand their condition and how it changes over time. Monitoring also helps to document how fish are responding to the various restoration projects that are designed for their benefit. Simply stated, monitoring "takes the pulse" of the Methow's aquatic and riparian habitats.

Monitoring comes in many forms, but the collection of scientific data are generally at the core of every effort. Monitoring counts, measures, and identifies many factors that affect fish and their habitat including water temperature, fish species and abundance and riparian plant community structure just to name a few. Monitoring programs follow strict protocols to ensure the information collected is valid and can be repeated in the future.

In the cases of threatened and endangered species, such as spring Chinook salmon, steelhead and bull trout, results from monitoring are used to assess population size and trends to determine iftheir numbers are increasing to levels that would warrant their removal from the Endangered Species List.

A local fish biologist tags young salmonids to track their movement, growth, and survival.

Station 7 – Native Plant Nursery

Methow Salmon Recovery Foundation created a native plant nursery in 2009 to provide locally adapted plant materials for riparian restoration projects within the watershed. The nursery, will produce stems that will be cut off and used as "live stakes" in a variety of different restoration projects. The stems are placed in the ground when dormant and subsequently root and send up new shoots. They can be used individually or bundled together. The availability of this plant material helps ensure that revegetation efforts are utilizing plants that are best adapted for the local conditions.

There are currently 400 shrubs and trees planted in the nursery, composed of a mix of black cottonwood, Mckenzie willow, pacific willow and red osier dogwood. The first harvest is slated for fall 2013. New shoots will be harvested on an annual basis in following years. If need for cutting material decreases in the future, the nursery can be left alone to develop into future riparian habitat.

Willows growing in the Twisp Pond Nursery will be used for later plantings.

Station 8 – Side Channels and Floodplains

Similar to humans, rivers need be active to maintain good health. An active river is one that moves around, both horizontally and vertically, forming new channels in the process. In this way, the river functions as an architect of the landscape in which it flows.

As a river moves to what was once the main thread of the river may become somewhat secondary and can be thought of as a side channel to the main river. Side channels are important features because they provide refuge for fish during high flows. This is especially important for rearing juvenile salmonids. They also help to spread the water across the valley bottom which will aid the establishment and maintenance of riparian forests.

An aerial view of the Twisp Ponds area looking down the Twisp River.

Floodplains are slightly elevated areas in between the mainstem and side channels as well as along the river banks where flood waters escape during high flow events. Floodplains are critical to healthy rivers because they dissipate the energy floods and provide short-term low velocity habitat for rearing fish. They also provide riparian plants with unique growing conditions and habitat for an amazing variety of wildlife.

The pond you see before you was once a main channel of the river. Restoration of the Twisp Ponds has helped to re-establish this area as critical habitat for fish and a variety of aquatic species.

Station 9 - Beavers

There are many different mammals living at Twisp Ponds but the beaver plays a unique role in the ecosystem, possessing the ability to shape the habitat around them. By damming sections of rivers and streams, these engineers alter the landscape by creating and expanding the floodplain which creates the diversity of habitats important for imperiled fish survival.

Beavers fell trees to access leaves, inner bark and buds which are their primary food sources. Cottonwood, aspen, willow and alder are among some of their favored food species. Many of these species will resprout after being cut down. Beavers utilize the trunks and branches to create their dams. As water pools up behind the dams, it creates a flooded area allowing for the establishment of more riparian plants and more habitat for a larger variety of wildlife.

Many landowners have long been at odds with beavers due to their habit of cutting down favored trees and flood sections of their property. The Methow Beaver Project, a partnership of local agencies, relocates "nuisance" beavers from the valley floor to areas higher up in the watershed. The beavers activities help retain spring runoff, allowing water to soak into the ground and return to the rivers later in the season, increasing late season stream levels and cooling stream temperatures.

Beavers are primarily nocturnal animals. The best time to see them at Twisp Ponds is just before dusk swimming through the ponds. Look for beaver signs,can you find runs where they slip down into the water, where are the beaver chewed trees? Can you tell what species they are? Are the wood chips fresh? Look for a beaver scent mound along the shore where they communicate with each other by smell.

Beaves do not harvest only small trees as seen by their work on this mature cottonwood tree.

Station 10 -Water Quality

We all know plants and animals need a quantity of water to survive. But the quality of that water is also important. Water quality is a term used by scientists to describe the chemical, physical and biological composition of water. Water of high quality is also critical for humans as we need clean drinking water to maintain our health. The riparian forest you see around you plays a significant role in maintaining good water quality by shading the river, filtering rain and groundwater and up taking excessive nutrients that would otherwise end up in the river.

Cold and clear water is also a critical component of a healthy, functioning watershed and without it the Methow's amazing array of native plants and animals cannot thrive. Some aquatic species, such as bull trout, need very cold water to survive and are extremely sensitive to warm water temperatures and will avoid areas of water >60 °F. This makes bull trout excellent indicators of water quality as their presence in an area tells us that water temperature are cold and have not be subjected to significant forms of impairment.

Bull trout depend on cold, clear water and as such are a great indicator of water quality.

Art at the Twisp Ponds

In the effort to raise public awareness of watershed function, habitat restoration, and fish recovery efforts in the Methow watershed, the Methow Salmon Recovery Foundation formed a partnership with Methow Arts to provide arts education opportunities along the trail system at Twisp Ponds. Nature-based artwork in this location enhances fish restoration efforts by linking the community to educational efforts and public access. The art at Twisp Ponds captures the attention of visitors to the site, stimulates their imagination, and encourages them to ask questions and form connections with their physical environment. It is also an opportunity to engage in dialogue about habitat restoration needs and objectives.

In the fall of 2012, three public art pieces commissioned by MSRF were installed at the Twisp Ponds. Dan Brown's steel "Bringing Home the Salmon/Bacon" perches on a pole at the entrance to the site, Cordi Bradburn's cast aluminum "Blue Heron and Smolt" wades near the shore of Pond #4, and Bruce Morrison's carved wood "Beaver Totem" greets you as you walk through the cottonwood gallery along the river. Steve Love's cast aluminum "Twisp" will be installed during the summer of 2013.

Cordelia Bradburn and Steve Love, with Cordelia's piece"Blue Heron and Smolt" which was cast by Steve at his foundary.

Art (cont.)-

As you discover the Twisp Ponds, you may also encounter several rusted steel fish created by two local artists Barry Stromberger and Dan Brown. These images were cutout of old cars that had been used to prevent erosion along the banks of the Methow River. This "Detroit Rip Rap" had long outlived its usefulness along the river and was repurposed into the art you see before you. Combined, the public art pieces at Twisp Ponds provide destinations of interest that enhance visitor experience and celebrate the connections between art and place.

Above- Installing Dan Brown's "Bringing Home the Bacon-Salmon.

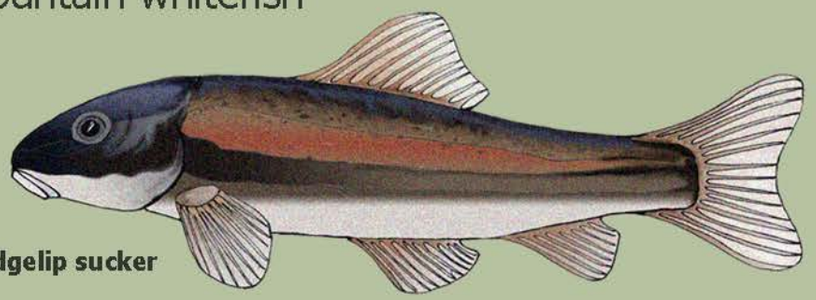
Left- Bruce Morrison working on his piece " Beaver Totem" which sits hidden along the trails.

Common Species Found at Twisp Ponds

Fish

Rainbow trout/steelhead
Coho salmon
Chinook salmon
Bridgelip sucker
Longnose dace
Mountain whitefish

Coho salmon fry



Bridgelip sucker

Mammals

White tailed deer
Mule deer
Beaver
Mink

Beaver

Quaking Aspen

Birds

Belted kingfisher
Osprey
American robin
Mallard
Great blue heron
Northern oriole

Belted kingfisher

Plants

Red osier dogwood
Black cottonwood,
Quacking aspen
Willow
Rose
Hawthorn
Mock orange

Willow

Red Osier Dogwood

The Twisp Ponds project provides opportunities for education, restoration and scientific data collection, all related to efforts to help restore local salmon populations.

The Methow Salmon Recovery Foundation exists to help the Methow community steward its river ecosystems through scientifically based and locally controlled salmon recovery projects. We believe that by doing so, we will create a net benefit for local recreation, employment, and overall quality of life while protecting salmon habitat for years to come.

Methow Salmon Recovery Foundation
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