

LIVING WITH THE METHOW RIVER

January 2010 - June 2011

C A L E N D A R



COVER ARTWORK BY SALEYA MILLER





ARTWORK BY JOSEPH CAREY

Placement of a home or structure near a river is risky because rivers may rise dramatically during floods.

River banks can erode and rapidly cause river channels to relocate.

This can undermine and destroy houses and structures in areas at high risk for this type of erosion and channel migration.

J A N U A R Y

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
	<p>For information on building near rivers consult the county planning office 509-422-7160. For information on conservation easements to protect river banks contact the Methow Conservancy. 509-996-2870</p>				1 NEW YEAR'S DAY	2	
3	4	5	6	☾	7	8	9
10	11	12	13	14	●	15	16
17	18 MARTIN LUTHER KING, JR. DAY	19	20	21	22	☾	23
24 31	25	26	27	28	29	○	30

The riparian zone is the area of water loving vegetation between drier uplands and the edge of a river, stream or lake.

The roots of native trees and shrubs are adapted to this transitional area and create an interwoven structure that holds soil together and stabilizes stream banks.


Large trees and shrubs provide shade that cools the water below. Salmon depend on cool water for survival. Insects depend on leaf litter for food.

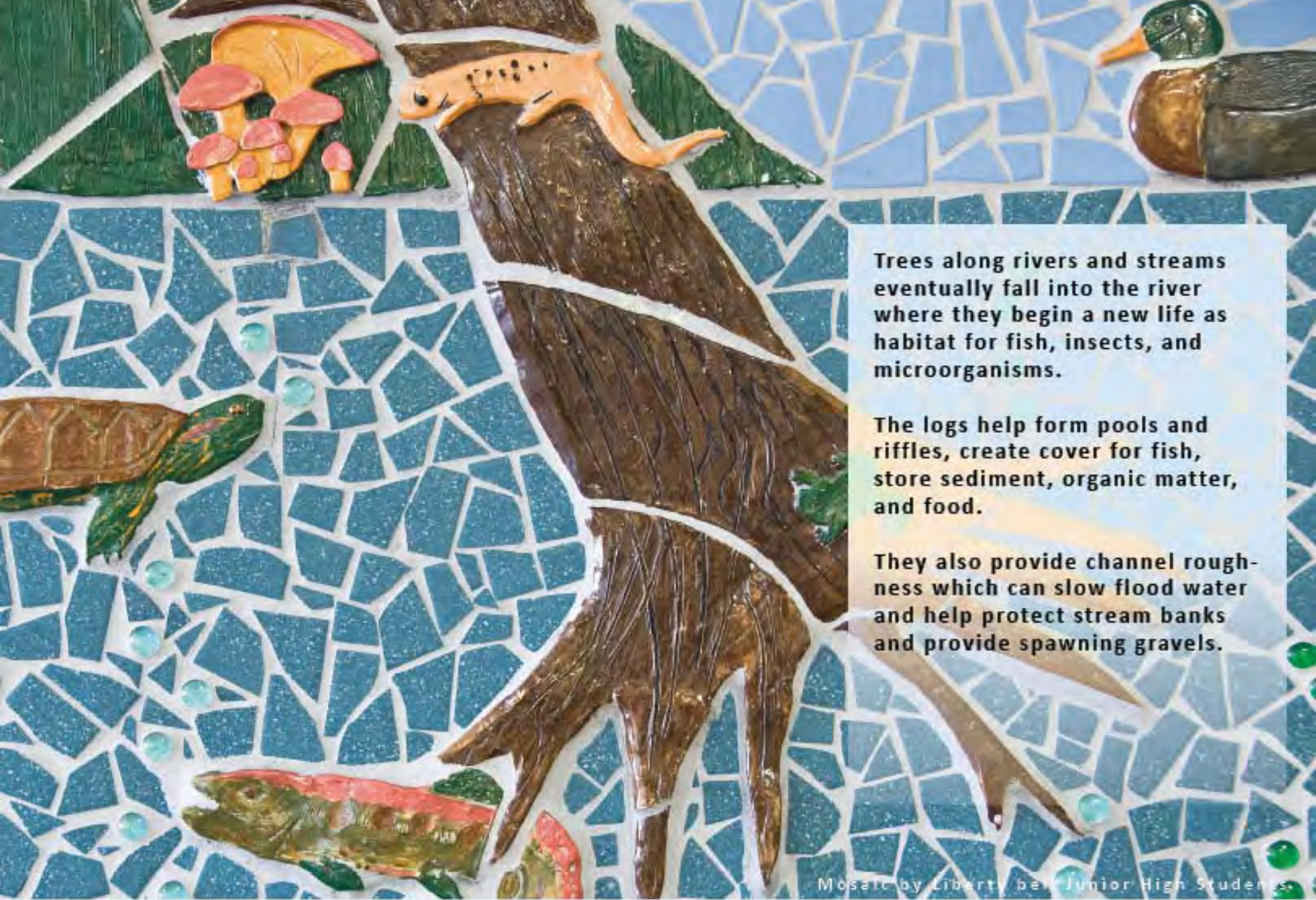
Riparian areas provide habitat for more species of wildlife than any other habitat type.



ARTWORK BY KYLE PUTNAM

F E B R U A R Y

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2 GROUNDHOG DAY	3	4	5 ☾	6
7	8	9	10	11	12	13
● 14 VALENTINE'S DAY	15 PRESIDENT'S DAY	16	17 ASH WEDNESDAY	18	19	20
21	☾ 22	23	24	25	26	27
○ 28	<p>THE CARLTON RIVER <i>The river is as dark as the night sky, the rocks as colorful as a rainbow, the yellow flowers as yellow as the sun, the blue flowers as blue as the afternoon sky, the river as loud as a car, the air as fresh as a flower, the snake as dark as black, the light tan sand as light as paper, the rocks as big as trucks, the deer as fast as light, the river as cold as ice, the river as fast as a cheetah.</i></p> <p style="text-align: right;">By Shaylon McBride</p>					



Trees along rivers and streams eventually fall into the river where they begin a new life as habitat for fish, insects, and microorganisms.

The logs help form pools and riffles, create cover for fish, store sediment, organic matter, and food.

They also provide channel roughness which can slow flood water and help protect stream banks and provide spawning gravels.

Mosaic by Liberty Bell Junior High Students

M A R C H

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
☾ 7	8	9	10	11	12	13
14 DAYLIGHT SAVINGS TIME BEGINS	● 15 Chinook and bull trout fry emerge!  Steelhead begin to spawn in lower Methow River!	16	17 ST. PATRICK'S DAY	18	19	20 FIRST DAY OF SPRING
21	22	☾ 23	24	25	26	27
28	29	○ 30	31			



Conservation easements are a way to protect a variety of habitats and agricultural lands. Conservation easements are a vital tool to protect riparian areas.

ARTWORK created by 6th grade students in collaboration with the Methow Conservancy's 2009 Imagine the Methow campaign. From top left: Emmett Fink, Jose Dominguez, Hannah Hogness, Noble Coleman, Ashley Watson, Willy Duguay, Clayton Avery, Lily White, Garrett Palm, Riley Calvert, Baylee Canado, Dreton Acord, Sharne Johnson, Dwight Treise, Delilah Cupp

A P R I L

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
BY ALANA HARDY 	For information about the tax and conservation advantages associated with this tool, contact the Methow Conservancy at 509 996-2870.			1	2	3
4	5	☾	6	7	8	9
EASTER					APRIL FOOL'S DAY	10
11	12	13	●	14	15	16
			ARBOR DAY		 Steelhead begin to spawn in upper Methow River ¹	17
18	19	20	☾	21	22	23
			ADMINISTRATIVE PROFESSIONAL'S DAY		EARTH DAY	24
25	26	27	☽	28	29	30



ARTWORK BY IGGY






ARTWORK BY KAYDEE SIMS

Rivers are constantly on the move not only downstream but also from side to side.

They form floodplains and areas called riparian zones that link aquatic and terrestrial systems.

This natural movement plays a key role in restoring fish habitat over time as it recruits new wood and gravels into the stream.

M A Y

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			<p>Methow basin flood maps are available at the Okanogan County Office of Planning and Development. 509.422.7160</p>			1
2	3	4	5	6 	7	8
			CINCO DE MAYO			
9	10	11	12	13	14 	15
MOTHER'S DAY						ARMED FORCES DAY
16	17	18	19	20 	21	22
23	24	25	26	27 	28	29
						
30		<p>MEMORIAL DAY</p> <p>31</p>  <p>Steelhead smolts migrate out to sea!</p>				

Rip-rap is a rock layer placed on stream banks to prevent erosion.

Often it speeds up water and can deepen and scour existing channels.





Rip-rapped shoreline tends to have lower quality habitat both in the water and along the bank, and cannot absorb water during floods.

A better solution is "soft-rap" which mimics natural stream banks by using wood, rock and vegetation to reduce water velocity and erosive force.



ARTWORK BY SARINA WILLIAMS

J U N E

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1  Adult Chinook return to the Methow River!	2	3	4 ☾	5  Bull trout migrate to spawning areas!
6	7	8	9	10	11	12 ●
13	14 FLAG DAY	15	16	17	18	19 ☾
20 FATHER'S DAY	21 SUMMER BEGINS	22	23	24	25	26 ○
27	28	29	30			








ARTWORK BY CHEYENNE OTT

Untreated runoff from roads, septic systems, farm fields or stockyards can be harmful to the river. Wastewater outflow can be managed by careful placement of culverts and drains, updating septic systems and providing catch basins for outflows.

Also follow these tips:

- Minimize the clearing of vegetation around the shoreline.
- Avoid using fertilizers and pesticides where they can easily run off into the river.
- Replant disturbed areas to help prevent erosion and sediment delivery to streams and rivers.

J U L Y

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	<p>JULY NIGHT</p> <p><i>The moon leaps swiftly from river to river watching for fish to leave the water, breaking the night silence.</i></p> <p>by Ashley Watson</p>			1	2	3
 <p>4</p> <p>INDEPENDENCE DAY</p>	5	6	7	8	9	10
 <p>11</p>	12	13	14	15	16	17
 <p>18</p>	19	20	21	22	23	24
25	 <p>26</p>	27	28	29	30	31

Steelhead fry emerge!



ARTWORK BY NAOMI FARMER

Water quality is more than clear water.



Water temperature is an important component of water quality and is monitored throughout the watershed.

Warm water temperatures harm fish. Planting trees can help create shade to cool the water.

Many partners also monitor how fish use the river and streams. The Methow River Basin is an active field laboratory for teams of biologists, engineers, geologists, hydrologists and others.

Allowing access to these scientists and technicians is one way property owners can participate in learning about our river.

A U G U S T

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	☾ 3	4	5	6	7
8	9	● 10	11	12	13	14
15	☾ 16	17	18	19	20	21
 Spring Chinook begin to spawn!	22	23	○ 24	25	26	27
29	30	31			Another way to help is to volunteer to collect data on the river. Call Michael Notaro at 509-429-2939.	



ARTWORK BY DUNCAN HANRON






River recreation is an important and growing activity in the Methow watershed.

More users increase human effects on sensitive riverbank vegetation and spawning areas.

When enjoying the river, you can help by minimizing the effects of your recreation.

Pack out your trash, leave no trace, learn when fish are spawning and what spawning areas look like.

S E P T E M B E R

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>Call the Methow Salmon Recovery Foundation at 509-996-2787 or visit methowsalmon.org to learn more.</p>			 1  Bull trout begin to spawn!	2	3	4
5	6 LABOR DAY	7	 8	9	10	11
12	13	14	 15  Adult steelhead return from ocean!	16	17	18
19	20	21	22	 23 FIRST DAY OF AUTUMN	24	25
26	27	28	29	30		
				 Spring Chinook spawning ends and Summer Chinook spawning begins!		



The Winthrop National Fish Hatchery produces three fish species that migrate down the river to the Pacific: spring Chinook salmon, summer steelhead and coho salmon. The spring anadromous fish programs began as mitigation for the impact of the construction of Grand Coulee dam. The hatchery normally releases fish in the spring to help speed up the migration downstream. These magnificent fish travel through nine dams and over 600 miles to get to the ocean.



ARTWORK BY WES PILKINGTON

O C T O B E R

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	The Winthrop National Fish Hatchery is open to the public 8-4pm daily or call (509) 996-2424.				☾ 1	2
3	4	5	6 ●	7	8	9
10	11 COLUMBUS DAY	12	13	14 ☾	15  Bull trout spawning ends!	16
17	18	19	20	21	22	☉ 23
24 HALLOWEEN 31	25	26	27	28	29	30



ARTWORK BY AUSTIN KRAUT

Removing artificial barriers to migrating fish is an important part of improving fish habitat.

Methow Restoration Council members work together with landowners to voluntarily improve fish access to spawning and rearing habitat in the streams and rivers of the Methow Valley.

While meeting the needs of local water users, over thirty barriers to fish migration have been removed or modified in the Methow Watershed to date.

N O V E M B E R

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	● 6
7 DAYLIGHT SAVINGS TIME ENDS	8	9	10	11 VETERAN'S DAY	12	◐ 13
14	15	16	17	18	19	20
○ 21	22	23	24	25 THANKSGIVING DAY	26	27
◑ 28	29  Summer Chinook spawning ends ¹	30				



ARTWORK BY GALEN HUNT

Meeting the Methow Restoration Council goals requires strong partnerships. Our aim is to help the Methow community become advocates for and stewards of its river ecosystems through locally-controlled projects that benefit salmon and people.

Serving as a bridge between regulators and property owners, these partners work to enhance recreation, employment, business development and educational opportunities through a variety of restoration efforts that foster positive identity and pride in our watershed community.

D E C E M B E R

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>If you think you have a good idea for a restoration project on your land call the Methow Restoration Council, Jessica Goldberg 996-0028 x263</p>			1	2	3	4
● 5	6	7	8	9	10	11
12	☾ 13	14	15	16	17	18
19	20	○ 21	22	23	24	25
		FIRST DAY OF WINTER				CHRISTMAS DAY
26	27	☾ 28	29	30	31	



Spring floods and freshets carry sediment like a conveyor belt.

The flows deposit large and small gravels, forming sand bars and beaches with each flooding event.

Sand suspended by swiftly flowing water drops in eddies where water slows down.

As sand and gravels build up, they create pools and riffles, bars and side channels, influence river flow and create spawning areas for fish.

Birds and other waterfowl also rely on open sand bars for feeding and nesting.

J A N U A R Y

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
						1 NEW YEAR'S DAY		
2	3	●	4	5	6	7	8	
9	10		11	☾	12	13	14	15
16	17		18	○	19	20	21	22
	MARTIN LUTHER KING, JR. DAY							
23	24		25	☾	26	27	28	29
30	31							



An important element of clean water is the biologic diversity of aquatic insects. Many of the long lived insects that build the base of the river's food chain require cool, clean water. These insects provide nutrients important for many organisms, and are a food source for salmon.

At sea, salmon accumulate marine nutrients in their bodies. When they return to freshwater, the fish bring those stored nutrients back to the stream habitat. The salmon die after spawning, and their decomposing carcasses contribute food for the entire ecosystem and begin the nutrient cycle again.

F E B R U A R Y

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
		1	2 GROUNDHOG DAY	● 3	4	5	
6	7	8	9	10	☾ 11	12	
13	14 VALENTINE'S DAY	15	16	17	○ 18	19	
20	21 PRESIDENT'S DAY	22	23	☾ 24	25	26	
27	28	<p>DRAGONFLY</p> <p><i>A dragonfly drifts Through the summer air Like a bright majestic plane Glides through the bright blue sky.</i></p>				 by José Dominguez	



ARTWORK BY WILLY DUGUAY

The Methow Valley is known for its great angling opportunities. Sport fishing is an important part of the local economy. While on the river, practice catch and release on wild fish:

- Use single barbless hooks.
- When removing the hook, keep the fish in the water. Be gentle.
- Wet your hands before handling the fish
- Cut the line if the fish swallows the hook
- Fin clipped steelhead belong in your creel. Always consult local regulations.

M A R C H

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	● 4	5
6	7	8	9 ASH WEDNESDAY	10	11	☾ 12
13 DAYLIGHT SAVINGS TIME BEGINS	14	15  Chinook and bull trout fry emerge! Steelhead begin to spawn in Lower Methow River!	16	17 ST. PATRICK'S DAY	18	☉ 19
20 FIRST DAY OF SPRING	21	22	23	24	25	☾ 26
27	28	29	30	31		



ARTWORK BY MOLLIE HUNT

Methow Valley irrigators depend on water to support agriculture.

To help meet demands on the river system, irrigators have employed conservation measures to exclude fish from intakes, eliminate fish passage barriers, and to keep more water in the river.


Water quantity influences water quality helping lower water temperatures for fish survival. Some barriers only block fish passage at low flow.

A P R I L

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			<p>SILENT NATURE</p> <p><i>The silent beetle jumps quietly through the leaves like a child sleeping silently inside a cozy house.</i></p> <p>by Jackson Lone</p>		1	2
● 3	4	5	6	7	8	9
10	☾ 11	12	13	14	15	16
17	○ 18	19	20	21	22	23
24	☾ 25	26	27	28	29	30
EASTER			ADMINISTRATIVE PROFESSIONAL'S DAY			

APRIL FOOL'S DAY

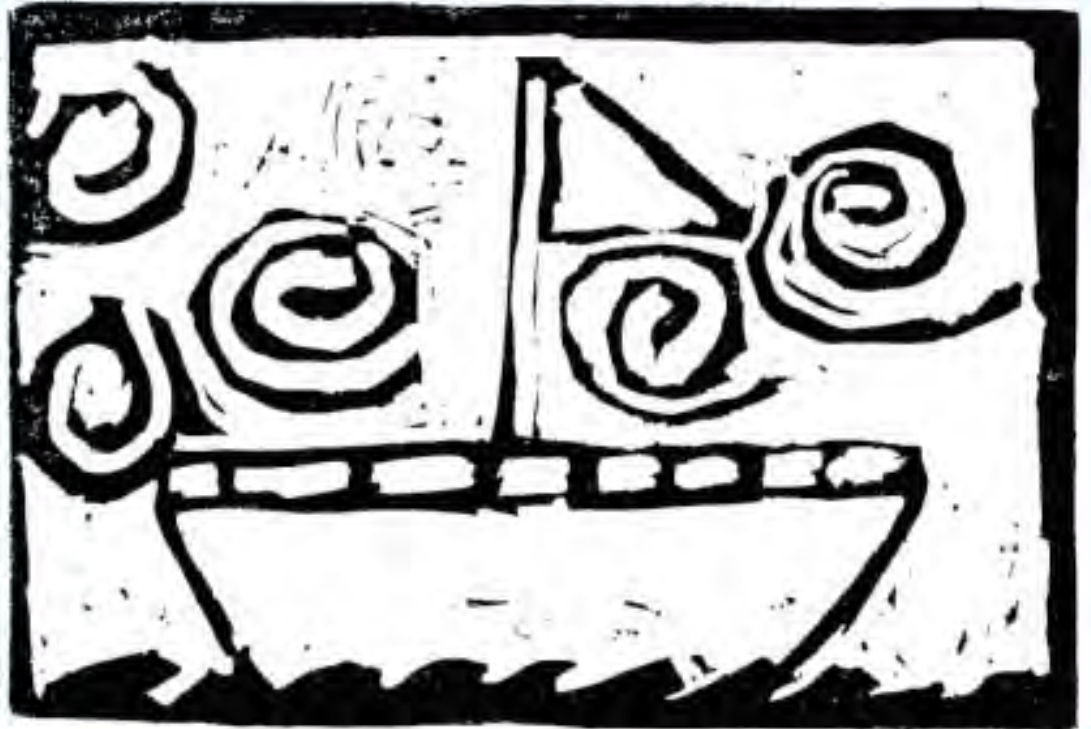
ARBOR DAY


 Steelhead begin to spawn in upper Methow River!



EARTH DAY

To reduce your impact along or near river corridors, remember these guidelines:

- Travel and camp on durable surfaces
- Dispose of waste properly
- Leave what you find intact
- Minimize impacts of campfires
- Respect wildlife
- Be considerate of other visitors



M A Y

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	● 3	4	5	6	7
				CINCO DE MAYO		
8	9	◐ 10	11	12	13	14
MOTHER'S DAY						
15	16	○ 17	18	19	20	21
						ARMED FORCES DAY
22	23	◑ 24	25	26	27	28
			 Steelhead smolts migrate out to sea ¹			
29	30	31				
	MEMORIAL DAY					





ARTWORK BY JESSICA DOMINGUEZ

Salmon, steelhead, and trout dig nests called redds in stream gravel, often when the stream flow transitions from a pool into a riffle or where a log or boulder has created a deposit of gravel.

When in streams wade carefully and:

- Use established stream crossings whenever possible to protect incubating salmon or trout eggs.
- Avoid crossing where water flows out of a pool.
- Avoid wading where gravel looks bright and clean. These are clues that fish have spawned there!

J U N E

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>THE RIVER HOUSE <i>The grass is as green as the maple trees.</i> <i>The river is as dark as the moonless sky.</i> <i>The leaves are as red as the sunset.</i> <i>The flowers are as yellow as a lemon.</i> <i>The sand is as tan as wood.</i> <i>The rocks are as hard as windows.</i> by Hailey Woody</p>			<p>● 1</p>  <p>Adult Chinook return to the Methow River!</p>	2	3	4
5	6	7	8	☾ 9	10	11
 <p>Bull trout migrate to spawning areas!</p>						
12	13	14	○ 15	16	17	18
		FLAG DAY				
19	20	21	22	☾ 23	24	25
FATHER'S DAY		SUMMER BEGINS				
26	27	28	29	30		

Protected Fish

Spring Chinook, summer steelhead, and bull trout spawn in the waters of the Methow basin and are protected under the Endangered Species Act.



SPRING CHINOOK

Chinook salmon live up to eight years: one year in fresh water and two to six years at sea. In August and September, salmon can be seen using their bodies to dig redds. Males will often aggressively defend their spawning areas from other males.

Spring Chinook and steelhead trout are anadromous. Anadromous fishes are those that are born in freshwater, spend all or part of their adult lives at sea, then return to freshwater streams and rivers to spawn and die. Their carcasses provide nutrients for insects, vegetation, animals and young salmon. These fish migrate down the Columbia to the Pacific and back up to the Methow River Basin—a 1200 mile round trip.



STEELHEAD TROUT

Steelhead can live up to nine years. They spend one to three years in freshwater before entering to the ocean. Some steelhead repeat their ocean journey more than once.



BULL TROUT

Bull trout can grow to be very large, up to 36 inches, and live up to twelve years. They migrate from larger rivers upstream to small streams to spawn in the fall. They prefer cold, unpolluted water and clean gravel. Large adult bull trout feed mainly on smaller fish.



REDDS

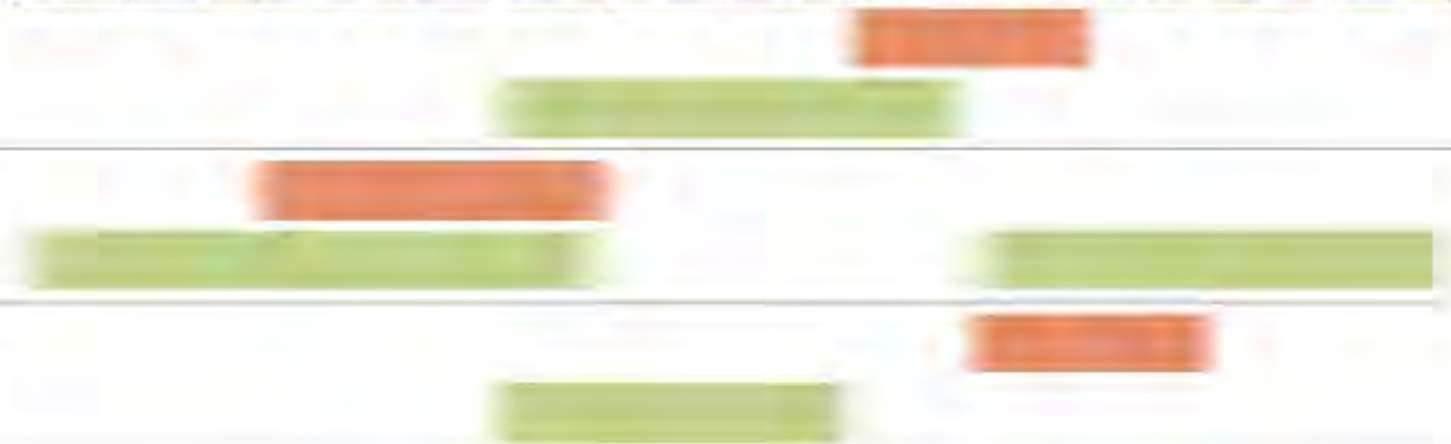


Spawning

Migration

Adult Spawning and Migration Times in the Methow Sub-basin¹

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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Glossary

¹All dates indicated are averages based on data from the WDFW and stream surveys by USFS.

Anadromous Fish that hatch, rear in fresh water, migrate to the ocean to grow and mature, then migrate back to fresh water to breed.

Channel The natural or artificial bed of a stream, river, or other waterway.

Conservation easement A voluntary legal agreement that allows a landowner to place restrictions on the future uses of a property's natural resources while retaining private ownership of the land.

Confluence The place where two streams meet.

Divert To direct a flow away from its natural course.

Ecosystem Complex system composed of a community of people, animals, and plants as well as the chemical and physical environments.

Endangered species A species or subspecies whose survival is in danger of extinction throughout all or a significant portion of its range.

Erosion A gradual wearing away of soil or rock by running water, waves, or wind.

Flood plain An area of land adjoining a body of water or natural stream that has been or may be covered by floodwater.

Flow Amount of water that passes a given point within a given period of time.

Habitat The area or type of environment in which a plant or animal normally lives or occurs.

Headwater The source and upper part of a stream.

Meander Curves in the stream channel where the stream dissipates energy.

Peak flow The maximum volume of water that is carried in the river over a certain period, expressed in cubic feet per second (cfs). Peak flows are described in terms of rainfall event frequencies. For example, the "100-year peak flow" has a 1% chance of occurring in any given year.

Reach A specified portion of a stream or a river.

Redd A nest of fish eggs covered with gravel.

Riffle A stretch of choppy water caused by an underlying rock shoal or sandbar.

Riparian On or next to the bank of a river, pond, or lake.

Rip-Rap A protective blanket of large loose stones, broken rock, or boulders placed on the bank of a stream for protection against erosion.

Sediment Small particles of organic and/or mineral matter carried by, suspended in, or deposited by wind or water.

Streambanks The usual boundaries (not the flood boundaries) of a stream channel. Right and left banks are named facing downstream.

Threatened species Any species which has potential of becoming endangered in the near future.

Tributary A river or stream flowing into a larger river or stream. The Twisp River is a tributary of the Methow River.

Watershed The area of land that drains its water into a particular stream or river.

Wetlands Lands including swamps, marshes, bogs, and similar areas such as wet meadows, river overflows, mudflats, and natural ponds.

THE METHOW RESTORATION COUNCIL

The Methow Restoration Council (MRC) was formed in 2003 as an ad hoc group of motivated stakeholders interested in restoring the health and status of native salmonid populations and their properly functioning habitats in the Methow sub-basin of the upper Columbia River.

The initial focus of the MRC was to address a lack of coordination between local salmon recovery, mitigation, and watershed planning efforts.

Over the past five years, the MRC has grown to serve as the primary entity responsible for identifying, prioritizing, and coordinating the implementation, monitoring, and adaptive management of needed habitat restoration projects in the Methow.

Following approval of the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (Recovery Plan), the MRC was designated as a Watershed Action Team (WAT) to facilitate implementation of the recovery plan in the Methow subbasin. As such, the MRC has become the primary resource for on-going efforts aimed at improving watershed health in the subbasin.



PICTURED:

Rick Alford, Yakama Nation; Heike Baesecke, Yakama Nation; Chris Eliasson, MSRF; Robes Parrish, USFWS; Deb Nickell, MSRF; John Jorgeson, Yakama Nation; Jennifer Molesworth, Reclamantion; Derek Van Marter, Upper Columbia Salmon Recovery Board; Charles Snow, WDFW; Char Scumacher, Okanogan County-Colville Lead Entity; Chris Johnson, MSRF; Lee Hatcher, Methow Watershed Council, Brian Fisher, MSRF; Paula Mackrow, MSRF; Jessica Goldberg, MSRF; Katy Williams, MSRF; Casey Baldwin, WDFW; Michael Notaro, Watershed Resource Solutions; Ken Bevis, WDFW; Gene Shull, USFS; Greg Knott, MSRF; John Crandall, Wild Fish Conservancy. Missing from the photograph: Katherine Bill, Trout Unlimited, Western Water Project; Julie Grialou, Methow Conservancy; Gina McCoy, WDFW; Tom McCoy, WDFW; Brandon Rogers, Yakama Nation. Photographed at Methow Salmon Recovery Foundation Twisp Ponds Interpretive Center by Teri J. Pieper, Reflected Light Photography

THE ARTWORK AND POETRY

featured in this calendar was created by Methow Valley students between 2002-2009 through Methow Arts Alliance's arts education partnership.

The blockprints, mosaics and poems were developed through lessons provided by artists and scientists working in collaboration with classroom teachers. Through lessons that integrate the arts and sciences, students develop a deeper understanding about both disciplines.

Many of the blockprints were made by 5th grade students who learned about fish and fish habitat from local ecologists, and then developed images that reflect their knowledge with local artists. Their artwork is featured on posters, flags and T-Shirts for National Fishing Day.

The poetry and small colored prints were made in collaboration with the Methow Conservancy's Imagine the Methow Campaign.

The arts education partnership serves over 5,000 students and 350 teachers across Okanogan County.

Funding and support is provided by MRC partners and the Washington Department of Ecology, the Methow Valley School District, the Washington State Arts Commission, the National Endowment for the Arts and the and many local sponsors. For more information contact Methow Arts Alliance at 509-997-4004.