

AMERICA'S 10 MOST ENDANGERED RIVERS (2006)



The Rivers:

1. Pajaro River (CA)
2. Upper Yellow Stone River(MT)
3. Willamette River (OR)
4. Salmon Trout River(MI)
5. Shenandoah River (VA)
6. Boise River (ID)
7. Caloosahatchee River (FL)
8. Kvichak & Nushagak River (AK)
9. San Jacinto River (TX)
10. Verde River (AZ)

1. Pajaro River



Pajaro River

The Pajaro River flows through diverse and important habitats. Types of problems currently facing the watershed include erosion and sedimentation, pesticides, nutrients, heavy metals, pathogens, streambed flow alterations, endangered habitat, and riparian vegetation removal. Agricultural lands are considered to be the major source of nutrient and sediment loading into the Pajaro River. Wetlands are being degraded due to land development and current farming practices. Low-density residential development, flood control projects, sand and gravel and mercury mining, and off-road vehicle activity have also directly impacted water quality in the watershed. Land use modifications have resulted in riparian and in-stream habitat loss, changed the geomorphology of streams and rivers, increased flooding, and reduced groundwater recharge. Due to the high demand for housing in recent years, substantial portions of the upper watershed areas have now been developed for new residential subdivisions. Due to the close proximity of the watershed to large urban centers, and the extent of urbanization occurring, pollutant loads to rivers and streams have significantly affected overall water quality for the entire watershed. Recent off-road vehicle activity along riparian corridors and in the Clear Creek Area has exacerbated sediment migration and degraded riparian areas. Historic mercury mining activities in Hernandez Lake area, and gravel mines in the Pajaro River, have resulted in heavy metals migration and disrupted geomorphologic functions in portions of the watershed. Airborne and water borne transport of asbestos from the Clear Creek area is currently being evaluated.

2. Upper Yellow Stone River



Upper Yellowstone River

The Yellowstone River is the longest free-flowing river in the contiguous United States. It flows for six hundred seventy miles from its headwaters in the Absaroka Mountains in the northern Wyoming to its juncture with the Missouri river in the western North Dakota. Lewis and Clark descended much of the Yellowstone River during their voyage of discovery in 1806. The upper Yellowstone River within park county, Montana is one of the west's premier native trout fisheries and support population of the cutthroat trout. It also supports and regenerates the stands off of riparian cotton wood forest and provides habitat for Neotropical migrant birds species. Flooding in 1996-97 caused property damage with subsequent increases in channel modification activities. Given the resource significance of this area, issues have been raised regarding the effects of bank stabilization and long-term cumulative impacts. The landowners and municipalities have attempted to prevent or reduce the flooding and erosion through bank stabilization structures involving rock riprap and channel deflection using rock barbs. The governor's upper Yellowstone river task force was formed in November 1997 to address cumulative effects of existing and proposed channel modifications and to provide a cooperative forum for local comprehensive planning. Permitting agencies such as US Army corps of engineers, in cooperation with other federal, state and local agencies, and private individuals require knowledge of this upper reach of the river to assist in deciding what effects these channel modifications will have on domestic, recreational and wild life resources.

3. Willamette River



Willamette River

The Willamette River is one of the only rivers in North America that flows from South to North. The Willamette River is Oregon's largest river and, by volume, the 13th largest in the United States. The river originates just south of Eugene and flows 186 miles north through the cities of Eugene, Corvallis, Salem, and Newberg on its way to Portland, where it joins the Columbia River. The flow of the river puts the Willamette River Water Treatment Plan well upstream from the contaminated Portland Harbor Area. The Willamette Falls at Oregon City provide a natural barrier that prevents pollutants from making their way upstream to affect water drawn in by the treatment plant. Therefore the Willamette River upstream from the Willamette Falls is a viable source for safe drinking water. Historically, the Willamette River was a wild river. Rising with massive floods in winter and spring, and expanding across a wide valley that bears its name, the river ran with power and a dynamic nature that is too seldom seen today. As the centerpiece of the Willamette Valley, the Willamette River pushed its way some 187-miles on its main stem, from Eugene to Portland, with cold runoff from the mountains and splashing valley torrents creating a vibrant flow. Throughout the long history of this river, it was common for great floods to result in the river changing its course significantly. Today the river is surrounded by agricultural land with little in the way of riverside forests that once flourished. Cities now hug its banks and alter the River's character. Industrial facilities nestle against the river to utilize it as a water source and dumping ground. Its flows have been harnessed and modified by hydropower dams on the tributaries. Simply put, pollution and habitat destruction have altered the function and very health of the Willamette River. Though the nature of the Willamette Valley has been modified greatly, there are still opportunities to regain some semblance of the river's former health and vitality. The Willamette River can indeed be a place that is clean and healthy for the species that inhabit its waters and for the people that turn to this resource for recreation and solitude.

4. Salmon Trout River



Salmon Trout River

The Salmon Trout River rises on the Yellow Dog Plains in the wildest part of Michigan and runs almost due north into Lake Superior. The Salmon Trout may be the purest waterway in the United States running into the cleanest of the five Great Lakes. As home to the last breeding population of the rare Coaster Brook Trout on the south shore of Lake Superior, the Salmon Trout is a symbol of the wildest part of Michigan. Protection of the Salmon Trout and the surrounding wild lands is of tremendous importance to the people of the state's Upper Peninsula.

5. Shenandoah River



Shenandoah River

The Shenandoah River is a tributary of the Potomac River, approximately 150 mi (241 km) long, in the U.S. states of Virginia and West Virginia. The principal tributary of the Potomac, the river and its tributaries drain several lateral valleys in the Appalachians on the west side of the Blue Ridge Mountains, mostly in northwestern Virginia. It is formed near Front Royal by the confluence of South Fork (the longer branch) and North Fork. It flows northeast across Warren and Clarke counties, then into West Virginia, crossing the extreme eastern tip of the state. It joins the Potomac from the south near Harpers Ferry, West Virginia. The Shenandoah valley is underlain by limestone. The fertile soil made it a favored place for early settlement and it continues to be a major agricultural area of Virginia and West Virginia. Some karst topography is evident and Luray Caverns near Front Royal is a popular tourist attraction. The Shenandoah River has one of the lowest percentages of intact riparian forests and the greatest potential for restoration in the state of Virginia. The primary water quality problems are nutrient and sediment contamination from agricultural uses, stream erosion, and floodplain encroachment. There have been a significant number of insect and disease outbreaks, wildfires, mountain harvesting activities, and growing use conflicts at the urban/wild land interface - including recreational growth through greenways and dispersed recreation (hunting, hiking ORV/ATV use). Recreation use associated with the Shenandoah River is increasing annually, with current use estimated at 250,000 recreation visitor days a year. Historically, row cropping and cattle grazing, and more recently, chicken and hog farming have occurred on riparian and upland areas. Severe flood events over the last decade have increased attention on the river corridors. Recently completed re-vegetation work has the promise of returning some areas to a native condition and concerted efforts to conserve riparian areas through conservation easements and repair riparian areas along agricultural corridors are showing significant restoration successes.

6. Boise River



Boise River

The Boise River is a tributary of the Snake River, approximately 75 mi (120 km) long, in southwestern Idaho in the United States. It drains a rugged portion of the Sawtooth Range northeast of Boise, as well as part of the western Snake River Plain. The watershed encompasses approximately 4,100 mi² (10,600 km²) of highly diverse habitats, including alpine canyons, forest, rangeland, agricultural lands, and urban areas. It rises in three separate forks in the Sawtooth Range above an elevation of 10,000 ft (3000 m) and is formed by the confluence of its North and Middle forks. The North Fork, 50 mi (80 km) long, rises in the Sawtooth Wilderness Area, along the Boise-Elmore county line, 60 mi (100 km) northeast of Boise. It flows generally southeast through the remote mountains in the Boise National Forest. The Middle Fork (approximately 70 mi or 110 km long) rises within 20 mi (32 km) of the North Fork in the southern Sawtooth Wilderness Area in northeastern Elmore County. It flows WSW, joining the North Fork to form the Boise approximately 15 mi (25 km) southeast of Idaho City. The main stream flows southwest through Arrow Rock Reservoir before receiving the South Fork. The South Fork (100 mi or 160 km) rises in northern Camas County in the Sawtooth National Forest, 60 mi (100 km) east of Boise. It flows generally southwest, descending through a basalt canyon and passing through the Anderson Ranch Reservoir, then turns northwest in central Elmore County. It joins the main stream from the south as an arm of Arrow Rock Reservoir 20 mi (32 km) east of Boise to form the main stream. Downstream from its confluence with the South Fork the river flows generally WNW, passing through Lucky Peak Reservoir and emerging from the foothills at Boise. It passes through downtown Boise, lined by an extensive recreational greenbelt, then flows northwest across the western end of the Snake River Plain, becoming a braided stream with a wide floodplain as it approaches the Snake. It enters the Snake from the east on the Idaho-Oregon border 3 mi (5 km) south of Nyssa, Oregon. The river was called "Reed's River" in the early 19th century. It was explored during 1811 Astorian Expedition. The river is used for irrigation on the plain east of Boise. The dams that form the mountain reservoirs were constructed as part of the Boise Project to provide hydroelectricity, drinking water, and flood control to Boise and the surrounding area.

7. Caloosahatchee River



Caloosahatchee River

The Caloosahatchee River is a river on the southwest Gulf Coast of Florida in the United States, approximately 75 mi (121 km) long. It drains rural area on the northern edge of the Everglades northwest of Miami. An important link in the inland waterway system of southern Florida, the river forms a tidal estuary along most of its course and has recently become the subject of efforts to restore and preserve the Everglades. It issues from Lake Hicpochee, in southeastern Glades County, approximately 10 mi (16 km) WNW of Clewiston. It flows WSW past La Belle, where it becomes tidal, forming an estuary along its lower 25 mi (40 km). It broadens as it nears the ocean, passing Fort Myers and Cape Coral. It enters the Gulf of Mexico 10 mi (16 km) southwest of Fort Myers in San Carlos Bay protected by Sanibel Island. The 5 mi (8 km) Caloosahatchee Canal connecting Lake Hicpochee to Lake Okeechobee allows continuous navigation from the Caloosahatchee to the Okeechobee Waterway system. Since the late 19th century, dredging and channelization of the river, as well as the artificial connection to Lake Okeechobee and its use as a water supply for urban and agricultural uses, have substantially altered the hydrology of the river. As a result, both the magnitude and timing of water delivery to the estuary has been substantially altered. Recent programs by the state government have attempted to establish minimum flow levels in the river, in part to help restore the water supply to the Everglades. A federal wildlife refuge for manatees has been established at the mouth of the river on San Carlos Bay near Fort Myers, Florida.

8. Kvichak & Nushagak River



Kvichak River



Nushagak River

The Kvichak River is a river in southwestern Alaska, located at the conjunction of the Alaska Peninsula, to the Alaska Mainland at about 58°40'N 157°34'W. With headwaters in Iliamna Lake, it drains the lake into Kvichak Bay, an arm of Bristol Bay. The river is about 97 km (60 miles) long. Historically, the river was navigated and subsistence fished by local native Alaskans. The name of the river means from- or up to-great water, a reference to Lake Iliamna, Alaska's largest freshwater lake. The name persisted despite being briefly re-named the Bristol River by British explorer Captain James Cook in 1778.

The Nushagak River is a river in southwest Alaska, at about 60°50' North 154° West. It begins in the Alaska Range and flows southwest to 450 km (280 miles) to Nushagak Bay, an inlet of Bristol Bay, east of Dillingham, Alaska. The Mulchatna River is a major tributary. Other navigable tributaries include the Nuyakuk River and the King Salmon River. The villages of Ekwok Koliganek and New Stuyahok are on the river. The town of Dillingham is on Nushagak Bay. Many species of Pacific salmon spawn in the river and both subsistence and sport fishing are important in the area. Most notable is the annual run of King (Chinook) Salmon, which occurs in June.

9. San Jacinto River



San Jacinto River

The San Jacinto River runs from Lake Houston in Harris County, Texas to Galveston Bay. In the past, it was home to the karankawa Indians. San Jacinto, river, c.130 mi (210 km) long, rising in SE Texas as the West Fork and flowing S to Galveston Bay. Its chief tributary is Buffalo Bayou, and both the bayou and the lower river are used for the Houston ship channel. In 1836, Texans under Sam Houston surprised and defeated a larger force of Mexicans in the final and decisive battle of the Texas Revolution on the San Jacinto near the mouth of Buffalo Bayou. The battlefield, a national historic landmark, is in San Jacinto State Park, which has a monument 570 ft (173 m) high; Apr. 21, San Jacinto Day, is a Texas holiday. The U.S.S. Texas is moored near the park. Dams on tributaries include the Barker Dam (39 ft/12 m high; 14 mi/23 km long; completed 1945) on Buffalo Bayou and Addicks Dam (50 ft/15 m high; 12 mi/19 km long; completed 1948) on South Mayde Creek. The West Fork of the San Jacinto River flows through Montgomery and Harris Counties down to Lake Houston, where it joins the East Fork before emptying into the Gulf of Mexico. Though very scenic, the San Jacinto River is usually too low to paddle, and even after heavy rainfall the narrow channel and overhanging trees and vegetation make for tough navigation. It is near the Sam Houston National Forest, and has many of the same characteristics of scenic hardwood and pine bottomlands akin to a swamp. Dam releases from Lake Conroe in Montgomery County are almost essential for adequate water to paddle. The area is rich in plant and animal life, and is surrounded by lands steeped in Texas history, especially that part related to Texas' battle for independence from Mexico in 1836. It is not a heavily traveled area, and trips here will not be taken among crowds of other paddlers. The flow is slow and meandering, so plan on adequate time to get downriver. Between IH 45 and US Highway 59 lies 21 miles with no take-outs, so plan accordingly. The San Jacinto River is near Houston, so there is plenty to do while in the area, yet the river itself is very isolated and natural with little to no commercial or residential development in the immediate vicinity.

10. Verde River



Verde River

The Verde River is one of Arizona's major perennial rivers and a treasured resource in the central part of the state. Free flowing for most of its length, it provides lush riparian habitat, abundant wildlife, diverse recreational opportunities, and spectacular scenery. The majority of the upper and lower Verde River passes through National Forestlands that is open to public recreation of all kinds. Fishing, boating, swimming, picnicking, camping, bird watching, and sightseeing are all popular activities. The lower river is designated a Wild and Scenic River and offers the opportunity to fish by boat from Beasley Flat to Childs. Several threatened and endangered species inhabit the aquatic and riparian habitats of the Verde River including the spinedace (a native minnow), razorback sucker, Colorado pikeminnow, bald eagle, and southwestern willow flycatcher. Resident and migratory birds abound throughout the river and river otter and beavers are occasionally seen.