

1. Racetrack Creek Watershed Summary

Description and Land Use

Table xxx: Racetrack Creek Watershed Overview

Watershed Size	32,937 acres/51.2 sq miles/132.7 sq km
Elevation Range	4,852 feet [4,744-9,596]
Stream Miles	59.6
Land Ownership	Private: 21% /State: 1%/Federal: 78%
Road Miles	Local Road/City Street = 30.2 Four Wheel Drive Trail = 10.7 Highway= 1.0 Driveway/Service Road= 1.5 Total = 43.4

Source: Montana GIS Portal Data Layers

Racetrack Creek has its headwaters in the Flint Creek Range. It drains an area of about 51 square miles and flows for approximately 23 miles until joining with the Clark Fork River. The lower portion of the watershed is used mainly for agricultural purposes while the upper section is owned by the Forest Service and used for recreation (MFWP, 2008). Racetrack Creek and several of the high lakes within the basin are used extensively for agricultural irrigation (MFWP 2008).

2. Impairments

Table xxx: Listed and Suspected Impairments for Racetrack Creek

Impairment	Reach (River Mile)	Pollutant	Impaired Beneficial Use
Low Flow Alterations	0.0-10.4	<i>Not a Pollutant</i>	Aquatic Life, Cold Water Fishery, Primary Contact Recreation
Alteration in stream-side or littoral vegetative cover	0.0-10.4	<i>Not a Pollutant</i>	Aquatic Life, Cold Water Fishery

Temperature Measurements (Suspected Impairment)

PIBO 2008	RM*	Start Date	End Date	Max T (°C)	Days>12°C	Days>18°C
	10.4	7/15	8/31	15.4	42	0
MFWP 2007	RM*	Start Date	End Date	Max T (°C)	Days>15°C	Days>20°C
	6.4	7/6	10/17	20.3	40	2

10.8	7/10	10/17	18.7	32	0
17.5	7/10	10/17	16.2	11	0

*River Mile

Source: MDEQ, 2010; MFWP 2008

Irrigation and Dewatering

Chronic dewatering results from agricultural irrigation within the basin and has many implications for both water quantity and quality. Over 200 water diversions exist on Racetrack Creek and its tributaries (MDNRC, 2011). Low flows result in unsuitable habitat for fish and macroinvertebrates due to increased temperatures and algal growth (Table xxx). In addition, irrigation structures can create barriers which impede fish passage and migration (MFWP, 2010).

Sediment/Siltation

Impairments from sediment and siltation often occur from over-grazing in the riparian areas throughout the Racetrack Creek drainage. Because livestock frequently have access to natural water sources in this area, riparian vegetation can be sparse. This, combined with livestock traffic, leads to accelerated bank erosion (MFWP, 2008). Sedimentation beyond that which is naturally occurring, damages fish and macroinvertebrate habitat by filling in redds, reducing available habitat (such as riffles and pools), and by altering stream channels (Kusnierz, P. and Welch, A., 2011). Sediment levels in Racetrack Creek exceed those defined by Montana DEQ TMDL standards.

Temperature

Racetrack Creek is used extensively for irrigation, and the basin contains many diversions (MFWP, 2008). Thermal impairments are attributed to agricultural dewatering, and have been documented in the creek (Table xxx). Temperatures below 16°C are optimum for westslope cutthroat trout growth, while temperatures below 20 °C are critical for their survival (Kirk, 2010). High temperatures also encourage algae growth and reduce dissolved oxygen content, which can be detrimental to fish health.

3.Native/Sport Fishery

Table xxx: Fish Distribution in the Racetrack Creek Watershed

Waterbody	Begin RM*	End RM*	Species	Updated
Racetrack Creek	0.0	12.8	Brook Trout	9/14/2009
Racetrack Creek	0.0	12.8	Brown Trout	9/14/2009
Racetrack Creek	0.0	6.6	Longnose Sucker	2/23/2009
Racetrack Creek	0.0	4.5	Mountain Whitefish	2/20/2009
Racetrack Creek	12.7	18.6	Rainbow Trout	9/14/2009
Racetrack Creek	0.0	14.9	Slimy Sculpin	7/27/2009
Racetrack Creek	6.4	23.2	Westslope Cutthroat Trout	1/5/2005
Racetrack Creek	12.6	19.0	Westslope X Rainbow	2/23/2009
North Fork Racetrack Creek	0.0	3.0	Westslope Cutthroat Trout	1/5/2005
Granite Creek	0.0	2.3	Westslope Cutthroat Trout	1/5/2005
Thornton Creek	0.0	3.1	Westslope Cutthroat Trout	1/5/2005

*River Miles

Source: MFWP, 2010

Current Condition

Montana FWP sampled fish populations in Racetrack Creek during August 2007 (River Mile 10.8, 12.7, 15.0, and 18.5). According to the report, no sections were sampled below River Mile 6.8 due to complete dewatering in that portion of the creek. Brown and brook trout were the only trout species sampled at River Mile 10.8, while all four species and their hybrids were present at RM 12.7. The upper two sites contained rainbow, westslope cutthroat and hybrid trout (MFWP, 2008).

Fish habitat was rated as “good” by Montana FWP (2008). However, flows in Racetrack are affected by several diversions and, as mentioned previously, the stream below RM 6.8 was completely dry. Barriers to fish passage (both irrigation-related and natural) occur throughout the creek (MFWP, 2008).

Fishery Potential

Table xxx: Tributary Rating Summary for Lower Racetrack Creek (Priority 1)

Stream	Reach(RM)	Trout Species	Impairments
Racetrack Creek	Upper: 0.0-13.0	Brook, Brown, Rainbow and Westslope Cutthroat	Low summer flows due to irrigation with complete dewatering at certain reaches, livestock grazing in riparian areas; high temperatures; competition to westslope cutthroat from brook, brown and rainbow trout; residential development; bank erosion/siltation
Current Recruitment/Restoration Fishery Value			Protection/Enhancement Value
High			Very High
Current Tributary/Replacement Fishery Value			Protection/Enhancement Value
Medium			Very High
Current Native Fishery Value (westslope cutthroat)			Protection/Enhancement Value
Low			Very Low

Source: MFWP, 2010

Table xxx: Tributary Rating Summary for Upper Racetrack Creek (Unranked)

Stream	Reach(RM)	Trout Species	Impairments
Racetrack Creek	Upper: 13.0-23.2	Rainbow and Westslope Cutthroat	Low summer flows due to irrigation with complete dewatering at certain reaches, livestock grazing in riparian areas; high temperatures; competition to westslope cutthroat from rainbow trout; residential development; bank erosion/siltation
Current Recruitment/Restoration Fishery Value			Protection/Enhancement Value
Low			Medium
Current Tributary/Replacement Fishery Value			Protection/Enhancement Value
Medium			Medium
Current Native Fishery Value (westslope cutthroat)			Protection/Enhancement Value
Low			Low

Source: MFWP, 2010

While Racetrack Creek experiences several impairments, protection and enhancement possibilities for a viable trout fishery exist on several levels (Table xxx). Montana FWP has shown an interest in managing (in collaboration with state agencies and other organizations) lower Racetrack Creek as a “Priority 1” recreational fishery in the agency’s Final Tributary Rating Summary (2010). The upper section (River Mile 13 to the headwaters) was also assessed but is currently unranked. Improved management practices

can increase the fishery viability by addressing documented impairments with appropriate restoration projects (Table xxx).

4. Assessments

Racetrack Creek’s habitat and water quality status have been assessed several times in the last 10 years (Table xxx). Assessments have included fish habitat and fishery potential, temperature, noxious weeds, stream flow, and stream channel and riparian habitat status.

Table xxx: Racetrack Creek Assessments

Type	Agency	Year	Area
Riparian, Geomorphology/Flow Assessment	WRC	2010/2011	Lower Racetrack Creek
Temperature Monitoring	PIBO/USFS	2010	River Mile 10.4
Tributary Prioritization /Rating Summary	MFWP	2010	All of Racetrack Creek
Fish Population/Riparian Habitat	MFWP	2008	River Mile 10.8, 12.7, 15.0, and 18.5
Upper Clark Fork Tributaries TMDL	MDEQ	2010	River Mile 0.0-10.4
Irrigation Structure Inventory	TU/WRC/MFWP	2010	Throughout Racetrack Creek

WRC and FWP Riparian Assessment

The WRC (2011) conducted NRCS riparian assessments on 9.9 miles of Racetrack Creek in 2010 and 2011. Of the 19 assessed reaches, the WRC classified nine as “at-risk” and ten as “sustainable”. Montana FWP (2008) also conducted riparian assessment on several sections of the creek (Table xxx) and rated the riparian condition as “good”. Woody vegetation was varied and dense, although invasive weeds were present. Grazing pressure appeared minimal. However, when the Watershed Restoration Coalition conducted an NRCS riparian assessment in 2010, they declared several reaches at risk due to heavy grazing in combination with other factors (WRC, 2011).

5. Restoration

Needs

- Work with irrigation users to address dewatering issues
- Address fish passage barriers

- Continue to monitor temperature
- Address bank erosion and cover issues with riparian plantings and limited livestock access to stream and riparian areas
- Monitor and treat noxious weed populations

Activities: Projects being undertaken by the WRC

6. Watershed Map

7. Bibliography

Bureau of Land Management, Montana State Office. Montana Surface Management Ownership (poly)[vector digital data]. 2007.

Fischer, Jessie. Racetrack Creek Watershed map. 1:130,000. [Printed/Computer Maps]. Fischer Geospatial Enterprises, LLC. Missoula, Montana. 2011.

KirK Environmental and Natural Resources, Inc. *Cottonwood Creek Flow Monitoring and Fish Barrier Study, Flow Monitoring and Water Rights Report*. Watershed Restoration Coalition. Deer Lodge, Montana. March 5, 2010.

Kusnierz, Paul and Welch, Andy. *The Montana Department of Environmental Quality Sediment Assessment Method: Considerations, Physical and Biological Parameters, and Decision Making*. Montana Department of Environmental Quality. June, 2011

Montana Bureau of Mines and Geology (MBMG). Montana Abandoned and Inactive Mines Database [vector digital data]. Montana State Library. Helena, Montana. January 9, 2006

Montana Department of Environmental Quality. *Upper Clark Fork River Tributaries Sediment, Metals, and Temperature TMDLs and Framework for Water Quality Restoration*. March 4, 2010

Montana Department of Natural Resources and Conservation Water Resources Division. Montana Water Rights [vector digital data]. Montana State Library. Helena, Montana. July 11, 2011

Montana Fish, Wildlife & Parks. Montana Fish Distribution – Streams[vector digital data]. Montana Fish, Wildlife & Parks. Helena, Montana. May 17, 2010.

Montana Fish Wildlife and Parks. *Rating Summaries for the Prioritization of Tributaries of the Upper Clark Fork River Basin for Fishery Enhancement Draft Final*. May, 2010.

Montana Fish Wildlife and Parks. *An Assessment of Fish Populations and Riparian Habitat in Tributaries of the Upper Clark Fork River Basin (Phase I)*. 2008.

Montana Fish, Wildlife & Parks. River Mile Locations (Tenth Mile Intervals) [vector digital data]. January 30, 2008.

Montana Natural Resources Conservation Service State Office. (6th-code) Hydrologic Units Montana Subwatershed [vector digital data]. Montana Natural Resources Conservation Service. Bozeman, Montana. 2007

Montana Trout Unlimited, Watershed Restoration Coalition and Montana Fish Wildlife and Parks. Summary of Irrigation Structure Inventory. 2010

U.S. Forest Service. PACFISH/INFISH Biological Opinion temperature and invasive weed datasets. U.S. Department of Agriculture. 2010

U.S. Census Bureau Geography Division. Montana Roads from TIGER/Line Files (Redistricting Census 2000)[vector digital data. Montana State Library. Helena, Montana. 2001.

U.S. Department of Commerce U.S. Census Bureau, Geography Division. Montana TIGER/Line Files, UA Census 2000 [vector digital data]. Montana State Library. Helena, Montana. 2002.

U.S. Geological Survey. National Elevation Dataset for Montana [raster digital data]. Montana State Library. Helena, MT. April 1, 2002.

Watershed Restoration Coalition. Upper Clark Fork Tributaries assessment data [Unpublished data for flow, geomorphology and riparian assessments]. Watershed Restoration Coalition. Deer Lodge, Montana. 2010-2011.