

Fisheries Technical Report

**State Highway 82 / Entrance to Aspen
Environmental Reevaluation**

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**Colorado Department of Transportation, Region 3
and
Federal Highway Administration, Colorado Division**

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1.0 Affected Environment

This report provides a reevaluation of the fisheries resources analysis presented in the 1997 State Highway 82 Entrance to Aspen Final Environmental Impact Statement (FEIS, pages IV-54, V-35 and VI-3) for the Preferred Alternative selected in the Record of Decision (ROD) issued in August 1998.

1.1 Methodology

The current Colorado Department of Wildlife (CDOW) list of Gold Medal fisheries was reviewed and compared to the fisheries listed in the FEIS. The CDOW was contacted to verify that the primary game fish species in the project area, as well as the status of fishing, was consistent with that reported in the FEIS (Hebein, 2006). The Colorado Department of Public Health and Environment (CDPHE) was consulted regarding current macroinvertebrate surveys in the project area.

1.2 Regulatory Overview

There have been no new or changed regulatory requirements affecting fisheries resources since publication of the 1997 FEIS. Fisheries resources are governed under the Gold Medal Fisheries designation requirements and have not changed since 1997 (Hebein, 2006). The “Wild Trout Waters” designation is no longer used by the Colorado Division of Wildlife (CDOW) (Hebein, 2006).

CDOW reviewed the project for potential impacts to fisheries and subsequently authorized construction under a Programmatic SB 40 Certification (Senate Bill 40; 33-5-101-107, et seq., C.R.S. 1973) on April 18, 2005 (Spinuzzi, 2006).

There have also been no other regulatory changes affecting fisheries resources in the Roaring Fork River since the 1997 FEIS (Hebein, 2006).

1.3 Description of the Existing Condition

Fisheries resources located in the project area are essentially the same as reported in the 1997 FEIS. Sherman Hebein (Senior Fisheries Biologist, CDOW) was contacted to confirm the primary game fish species in the project area. Mr. Hebein confirmed that brown trout (*Salmo trutta*), rainbow trout (*Salmo gairdneri*), and mountain whitefish (*Posopium williamsoni* [Girardi]) are the dominant game fish in the project area. The brook trout (*Salvelinus fontinalis*) and mottled sculpin (*Cottus bairdi*) were confirmed to be the primary non-game fish species in the project area. The Colorado cutthroat trout (*Onchyrhynchus clarki pleuriticus*) was listed in the 1997 FEIS as a primary game fish species; however Mr. Hebein stated that the Colorado cutthroat trout is considered an incidental species and is not commonly found in the project area (Hebein, 2006).

The 1997 FEIS reported that the CDOW annually stocked rainbow trout in the project area. However, since publication of the FEIS, whirling disease has reduced the stock of rainbow trout statewide and the CDOW has not stocked waters in the project area for a number of years (Hebein, 2006). Despite the discontinuance of rainbow trout stocking, the Roaring Fork River is still listed as a “Gold Medal” fishery and is among the highest quality aquatic habitat in the state (Hebein, 2006).

Bill McKee of the CDPHE was contacted regarding macroinvertebrate studies on the Roaring Fork and its tributaries in the project area (McKee, 2006). Macroinvertebrates are small animals without a backbone that live in water bodies. They are the primary food source for most game fish species and considered a primary indicator species for habitat quality/degradation. Mr. McKee stated that he had performed sampling in the project area in 2001. The 2001 study collected samples from 14 different sites in the Roaring Fork valley. Samples were collected from the following locations near the project area:

- Crystal River
- Difficult Creek (above Aspen) near its confluence with the Roaring Fork River
- Brush Creek
- Roaring Fork River at Red Butte Road or Cemetery Creek Bridge (upstream of the Aspen wastewater treatment plant)
- Roaring Fork River at Snowmass Creek

Only raw data from the study is available. No report was prepared. The data have not been assessed to determine the quality of macroinvertebrates in the water bodies. Mr. McKee confirmed that the macroinvertebrate species found in the 1993 study (mayflies (i.g. *Baetis*), stoneflies (e.g. *Chloroperlidae*), caddisflies (e.g., *Rhyacophilidae*), beetles (e.g., *Elmidae*), and blackflies (e.g., *Chironomidae*)) were all species that were observed in the 2001 sampling events.

Two components of the Preferred Alternative have been constructed since the publication of the FEIS and ROD: (1) Owl Creek Road and West Buttermilk Road have been relocated to create a new, signalized intersection with State Highway 82 near the Buttermilk Ski Area; and (2) the roundabout at the Maroon Creek Road intersection has been completed.

In addition, the Maroon Creek Bridge Replacement Project is currently under construction, scheduled for completion by spring of 2008. This project is being constructed as a bridge replacement without any increase in roadway capacity. However, it will accommodate the Entrance to Aspen Preferred Alternative in the future by removing the center median and re-striping for two general-purpose lanes and two exclusive bus lanes (see the Introduction to the Technical Report Volume for more detail).

The intersection of Truscott Drive and State Highway 82 was completed in 2001. While this intersection is not part of the Entrance to Aspen Project, its configuration accommodates the alignment for the east approach to the Maroon Creek Bridge Replacement Project.

A transportation easement across the Marolt-Thomas Open Space was conveyed from the City of Aspen to CDOT in August of 2002, as part of land exchange and mitigation agreements between CDOT and the City of Aspen and Pitkin County. (Refer to Appendix A and B in the 1998 Record of Decision for details of the open space conveyance agreements and mitigation commitments.)

2.0 Environmental Consequences

2.1 Methodology

The changes in the existing condition of project area fisheries resources were compared against the conditions and impacts reported in the FEIS. For fisheries resources, there were no changes identified in the existing conditions that would alter the impacts reported in the FEIS; therefore, no additional impact analysis was necessary.

2.2 Preferred Alternative

The impacts as presented in the 1997 FEIS are still valid and no new or greater impacts to fisheries were identified in this reevaluation.

Management of snow and ice has changed from those described in the “Winter Runoff Constituents” section in the FEIS under “Water Quality” (page V-27). Roads in the project study area are maintained by the City of Aspen and CDOT. Each entity uses different methods of winter road maintenance. CDOT maintains State Highway 82 near the Pitkin County Airport to the intersection with Cemetery Lane. CDOT uses magnesium chloride in this area which includes the State Highway 82 crossing of Maroon Creek (Mertes, 2006). The City of Aspen maintains State Highway 82 from Cemetery Lane to and within the city limits. In this area, the City of Aspen does not use chemical deicers. The City plows and uses 3/8-inch washed chips for sanding. The City also sweeps and flushes the streets (Krueger, 2006; Cassin, 2006). This area includes the State Highway 82 crossing of Castle Creek.

In 2001, CDOT published a study (Fischel, 2001) describing the environmental effects of different deicers. According to the study, magnesium chloride can increase the salinity of the soil near roadways where it is applied. Magnesium chloride may also contribute to the mobilization of trace metals from the soil to surface- and groundwater. Chloride-based deicers have the potential to increase the salinity of rivers, streams and lakes. Since the dilution of deicers from the roadways to nearby streams is estimated to range from 100- to 500-fold, salinity increases are only likely to occur in slow-flowing streams and small ponds. Because water bodies in the project area are generally fast-moving, it is not likely that Maroon Creek, Castle Creek or the Roaring Fork River would be noticeably impacted. Because increased salinity has been reported in groundwater at a distance of more than 300 feet from roadways (Fischel, 2001), some wetlands and areas of standing water could be affected.

The FEIS acknowledges the potential for some increased salinity and trace-metal impacts due to deicing in the study area. Based on current de-icing practices and water quality in the study area, none of these impacts is expected to be significant, and no impacts to project-area fisheries are expected to occur.

Based on existing fisheries conditions in the study area, there is no evidence of any substantive, long-term adverse effect on fisheries from the previous intersection or roundabout construction.

3.0 Mitigation Measures

The mitigation measures described in the 1997 FEIS have been implemented for components of the Preferred Alternative already constructed or currently under construction. These measures also would be implemented during construction of future components of the Preferred Alternative. These measures are considered to be adequate to protect fisheries in the project area (Hebein, 2006). No additional mitigation would be needed based on current conditions and regulations. Section 4.0 summarizes impacts and the mitigation measures outlined in the 1998 ROD.

4.0 Summary of Impacts and Mitigation

Impacts are summarized below in Table 4-1 as identified in both the FEIS and this reevaluation. Mitigation measures listed in the table are those from the 1998 ROD, unless additional measures are noted as being required due to findings of the reevaluation.

**Table 4-1
Summary of Impacts and Mitigation Measures**

Topic	FEIS Impacts	Reevaluation Impacts	Mitigation Measures
Fisheries	<p>Erosion and sedimentation of area streams due to construction activities</p> <p>Winter Runoff Constituents (increased salinity): No discernible impacts of chemical de-icers, sand and salt use on water quality or fisheries in project area</p>	<p>No change.</p> <p>(City no longer uses de-icers; CDOT uses them at east end of study area. Potential salinity impacts likely less than reported in FEIS under Water Quality, due to current City de-icing practices)</p>	<p>Avoid damage to or removal of shoreline vegetation</p> <p>Re-vegetate according to CDOT Standard Erosion Control Measures</p> <p>Avoid channel restrictions and destabilization</p> <p>Replace pools and irregular bends where such features are lost</p> <p>Filter runoff in settlement ponds or through check dams where practical</p> <p>Avoid in-stream activities during fall and early spring when resident fish are spawning</p> <p>Avoid removal or damage to gravel substrates</p>

5.0 Agency Consultation

The Colorado Department of Public Health and Environment and the Colorado Division of Wildlife were contacted for fisheries and invertebrate data for this reevaluation.

6.0 References

Cassin, Lee. June 19, 2006. City of Aspen Environmental Health Director. Personal communication with HDR Engineering via e-mail. Snow and ice control practices within the project area.

Colorado Division of Wildlife. "Western Colorado Hot Spots." <http://wildlife.state.co.us/Fishing/WhereToGo/HotSpots/WestHotSpots.htm>. Site accessed June 22, 2006.

Hebein. 2006. Personal communication between Sherman Hebein (Senior Fisheries Biologist, CDOW) and Kristine MacKinnon on June 30, 2006. Verifying the current status of game fish species and habitat designation in the project area.

McKee. 2006. Personal communication between Bill McKee (CDPHE) and Kristine MacKinnon on July 11, 2006 to verify the current status of macroinvertebrate populations and studies within the project area.

Krueger, John. June 14, 2006. City of Aspen Director of Transportation. Personal communication with HDR Engineering via e-mail. Snow and ice control practices within the project area.

Mertes, Pete. June 13, 2006. Colorado Department of Transportation Resident Engineer. Personal communication with HDR Engineering via e-mail. Snow and ice control practices within the project area.

Spinuzzi.2006. Personal communication between Gary Spinuzzi (CDOT) and Dan Miller on October 2, 2006 to verify compliance with SB 40 certification within the project area.

7.0 List of Preparers

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