Montana Fish, Wildlife & Parks

DECISION RECORD
East Fork Gate Repair

Water Name:	East Fork Reservoir	**Water Code:**	16-4950
County:	Fergus County	**Legal Description:**	T14N R19E S14

Proposed Action: Montana Fish, Wildlife and Parks (FWP) has received a 124 permit Joint Application from the City of Lewistown (the City) that describes their proposed project to drain East Fork Reservoir to allow repair of the damaged gate stem on the upstream face of East Fork Dam.

Description of Public Notification/Review Process: FWP completed a Draft Environmental Assessment (EA) as part of the Stream Preservation Act (124) review on behalf of the City to meet the requirements of the Montana Environmental Policy Act (MEPA).

The EA was placed on the FWP web site on June 21, 2011, which began the public comment period. The comment period ended July 22, 2011. Local watershed group members and other local interested parties were contacted about the EA. One comment in support of the project as described was received. Five comments were received that opposed the drawdown as proposed.

Summary of Public Comments:
Comments against the project cited the following concerns:

1) All negative comments mentioned concerns with the introduction of large numbers of the illegally introduced northern pike and yellow perch into Big Spring Creek. The comments recommended screening devices, barrier, toxicant or other methods be used to prevent emigration of East Fork Reservoir fish to Big Spring Creek. One comment was concerned with large numbers of suckers entering Big Spring Creek. One commenter thought trout numbers in Big Spring Creek have dropped substantially in the last 5 years.
2) Large flood outflow from East Fork Dam in 2011 does not necessarily mean that there was a large influx of perch and northern pike to Big Spring Creek.
3) Potential impact of plants, weeds and non-fish animals into Big Spring Creek was not addressed.
4) Future fish management should be determined before drawdown is undertaken.
5) Silt from the reservoir can impact the downstream fisheries. A bathymetric map should be used to determine the amount of silt that could potentially go downstream.
6) A drawdown and refilling plan should have been included in the EA.
7) East Fork Big Spring Creek is "out of equilibrium" and a "major release" on top of current conditions as need for drawdown will make it worse and contribute to erosion problems.
8) There will be impacts to the local economy due to drawdown; Big Spring Creek is a fishing destination that benefits the economy.

9) Questions regarding National Environmental Policy Act (NEPA) involvement, since Natural Resource Conservation Service (NRCS) is providing funds and clean water act permitting.

Response to Public Comment:

1) **Fisheries Concerns**

In recent years FWP has captured illegally stocked northern pike, yellow perch, and bluegill in East Fork Reservoir. Other species stocked or captured include white sucker, longnose sucker, largemouth bass, rainbow trout and brown trout. All of these species, except the suckers are not native to this area and thus "exotic." FWP estimated there were about 600 adult northern pike and 2000 white suckers in 2004 and 30,000 yellow perch in 2005 in East Fork Reservoir. These numbers were likely large under-estimates due to gear bias in fish catch. Catch rates indicate northern pike and white sucker numbers have decreased and yellow perch numbers increased in recent years.

One comment mentioned a "substantial drop" in the trout population in Big Spring Creek over the years. Through 2010, FWP population estimates show this is not the case. Downstream from Lewistown, trout numbers have been near average for the past few years. At the Burleigh Fishing Access Site (FAS) above Lewistown, 2009 and 2010 had the highest estimates of the last two decades. Brown trout have become more abundant and rainbow trout numbers have generally dropped in recent years.

Reduction of Non-native Species into Big Creek

It should be feasible to reduce, but not eliminate the number of fish going downstream into East Fork Big Springs Creek and Big Spring Creek during the draw down. The impacts from fish going downstream are anticipated to be minor; FWP will likely not have the resources to provide an extended effort to reduce fish populations in East Fork prior to the drawdown. Screening devices attached on the outlet of East Fork Dam are not feasible and would likely not be permitted by the Montana Department of Natural Resources and Conservation (DNRC). According to Michele Lemiex, PE, Montana Dam Safety Program Manager, keeping the outlet works free flowing (i.e. no screen), whether through a drop inlet structure or a low level outlet works is standard engineering practice. There are recent cases of small non-DNRC permitted dams failing due to a screen collecting debris and blocking the outflow.

Another possible solution to reduce northern pike and yellow perch into Big Spring Creek could be the installation of a screw trap set in East Fork Big Springs Creek downstream of the reservoir outflow would likely capture a substantial number of fish. It would require 1 - 2 people to monitor the trap during the month of drawdown (cost of about $5000 of fish technician time). Fish numbers could also be reduced with an intense 2 - 3 week spring trapping effort, which would be less expensive and could partially rely on volunteers. Trapping success varies greatly with weather conditions, but about 100 adult northern pike, 200 white suckers and 2000 yellow perch could be captured in a week of trapping. It would not be practical to build a barrier below the dam that would prevent downstream fish passage at the approximately 12 - 70 cfs during the 25 day drawdown time.

A final option could be the use of a toxicant, such as rotenone, that would be applied to the reservoir prior to draining. This option would be expensive, would likely not result in long term changes to the East Fork Reservoir fishery and would be more risky to the downstream fishes

than simply draining the reservoir. Costs for chemical treatment (rotenone) and detoxification (potassium permanganate) would likely exceed $10,000 for supplies and would involve several weeks of personnel time. Furthermore, any chemical treatment carries some risk (though limited) of impacts to downstream fisheries by the rotenone or the detoxifying agent. We determined there would be less risk involved for downstream fisheries by draining the reservoir without chemical treatment. Eliminating warmwater species from East Fork is likely not a practical alternative. Trout management did not work well in East Fork Reservoir in the 1970's - 1980's and bucket biologists stocked yellow perch and northern pike. Yellow perch and northern pike would likely show up in the reservoir soon after treatment even if they were eliminated from the reservoir. It is unknown when most of the fish would leave the reservoir; so treating at a very low pool may not prevent most of the fish from going downstream.

2) Fish did not necessarily flush into Big Spring Creek during the 2011 spring runoff.
The long term monitoring evidence indicates fish from East Fork and other tributary reservoirs emigrate downstream. FWP does not have much data from East Fork Big Springs Creek. Large numbers of yellow perch were observed by FWP in 2004 at the mouth of Casino Creek (likely from Casino Creek Reservoir) and are occasionally captured in Big Spring Creek at the mouth of Pike Creek (also contains perch). In 2011, the most likely scenario is many fish were flushed downstream during this rare approximately 100-year flood event. The public reported yellow perch and other fishes stranded in low-lying areas. There was likely about 1,500 cfs flowing out of East Fork Reservoir for an extended period. Most of this water was discharged over the emergency spillway. This is approximately 5 times larger than the maximum designed outflow of 305 cfs and about 15 times more than the proposed maximum discharge during draining. It is also possible many fish will remain in the reservoir or run upstream during the draining.

Northern pike and yellow perch were not seen in above average numbers during 2011 electrofishing. One northern pike and a few yellow perch were seen during 10 days of shocking Big Spring Creek. Conditions during the East Fork spill were much different than expected during the proposed drawdown. If fish did emigrate downstream during the 2011 spill and subsequent months of large releases, the majority of fish from East Fork must have washed further downstream. In addition to downstream migration, it seems likely many individual fish will become stranded or attempt to swim upstream during the East Fork draining. We also anticipate several species would be temporary residents in the upper reaches of Big Spring Creek and tend to move downstream.

3) Impacts to non-fish animals, plants, and weeds were not addressed.
Typically, water flowing into East Fork distributes plant and animal species that are in the dam downstream during normal flow years. For example, leafy spurge is found both up and downstream of the reservoir. There is no indication that East Fork Reservoir provides a barrier for the downstream distribution of any species.

On October 4, 2010 East Fork Reservoir underwent testing for aquatic nuisance species; this survey involved a physical inspection to survey invertebrates and aquatic vegetation. No invasive species were found in the field inspection or the lab samples.

The flows generated by the drawdown will be less than those encountered during a normal run-off year and should have no additional impact on other animal species. A search of the Montana Natural Heritage database found no plants of concern in the locality of East Fork Reservoir

downstream to Lewistown. Three animal species of concern, the veery, the northern redbelly dace, and the Berry's mountain snail are found in the vicinity. These species should not have population level effects due to the drawn down. The veery is a small bird that prefers riparian and cottonwood grove habitats. Northern redbelly dace are located in East Fork upstream of the dam. The snail is found in the Judith and Snowy Mountains.

4) Fisheries management changes of East Fork should be addressed before the drawdown is undertaken.

Long term fish management actions or management planning are far outside the 124 permit review process which is the state action under consideration. FWP is working within the confines of state statutes and administrative rules which relate to the bed and banks of the stream. FWP will address fisheries management when the Montana Fish, Wildlife and Parks, Warm Water Fish Plan is updated or the statewide fisheries management plan is developed. In the near term, FWP plans to restock trout in the reservoir after the drawdown. FWP has concluded that permanent removal of yellow perch and northern pike is unlikely due to aggressive illegal fish stocking activities in the Lewistown area. For example, Upper Carter Pond was illegally stocked with bluegill within the last 2 years. Tiger Muskie may be evaluated for stocking in the future.

5) Siltation from the bottom of the reservoir should be addressed.

Mark Yerger, NRCS staff engineer, evaluated siltation in the bottom of the reservoir. He noted that it would be challenging to mitigate for erosion, since the soils will be saturated. He estimated 200 - 900 cubic yards material would be transported downstream. The number is rough and would change based on actual sediment deposition and the amount of time the pool is drained. When compared with normal erosive processes, this is a small amount of sediment. Draining should not have population impacts on the aquatic fauna of East Fork Big Springs Creek or Big Spring Creek. East Fork below the dam is a sediment starved system since the dam has been reducing the downstream sediment load; this increase in sediment may reduce any erosion caused by higher flows during the release.

6) A drawdown and refilling plan should be included in the EA.

The City submitted a draw down plan written by the NRCS when they submitted the 124 application. A refilling plan was submitted by the NRCS on August 19, which was after the comment period ended. Both plans are available for inspection at the FWP office in Lewistown. The drawdown plan is detailed and calls for a 25-day drawn down period. It looked at inflow rates of 5 - 20 cfs. At 20 cfs, the outflow rate would start at about 74 cfs and decline to the inflow rate over the 25-day period. At 15 and 10 cfs, the maximum outflows would be 62 and 57 cfs, respectively.

Refilling plan (from Mark Yerger NRCS): After repair work is completed, the gate can be partially closed to allow for downstream flow requirements (water rights, etc) while retaining any excess flow for pool storage. The rate of refilling depends on inflows. For example, with stream flow of 10 cfs and downstream flow requirement of 7.5 cfs, 2.5 cfs can be retained for storage. Pool storage will increase at the rate of 5 Ac Ft/day. Since the permanent pool storage is 1,700 Ac Ft, it will take 340 days to fill the pool at that rate, meaning if the work is done in the fall, the pool would not be filled until stream flow increases due to the next spring runoff. However, if stream flow increased to 20 cfs after repair work, due to a cool wet fall, then 12.5 cfs could be retained for storage while allowing 7.5 cfs to flow downstream. Pool storage would increase at

the rate of 25 Ac Ft/day, allowing the pool to be refilled in 68 days. Assuming the work is completed by October 1, the pool would be refilled by early to mid December.

7) East Fork is "out of equilibrium" and a major release will cause additional problems.
This is not a major release. The NRCS collected sporadic flow information below East Fork Dam from 1975 - 1982. In every year, outflows exceeded 50 cfs and in 6 years during that period, they exceeded 250 cfs. As stated in the response to concern 6 above, the maximum outflow will be from 57-74 cfs. Outflow will be down to about 50 cfs in 11 days under the maximum release scenario.

8) Local economic impacts
There should be no long term economic impacts due to the draw down. However, there will be short term impacts to local anglers due to lack of the fishery in East Fork Reservoir (average 1,645 angler days), until a fishery is reestablished. It is possible or even likely the perch derby at East Fork Reservoir will not occur in the near term after draw down. We anticipate only minor short term impacts on Big Spring Creek (average 9,077 angler days annually). Flow increases below East Fork Reservoir would increase at most from 20 to 70 cfs for less than a five day period, which would increase flows in Big Spring Creek by approximately 33 percent for less than a week during draw down of the reservoir, prior to gate repair.

9) NEPA requirements
The City is not required to complete the review requirements of either MEPA or NEPA. MEPA review is only required to be completed by state agencies, whereas NEPA compliance is required by federal agencies.

Prior to completing the EA, NRCS did not reply to several FWP requests for a determination of the project's NEPA status. On July 11, 2011, FWP was informed that NRCS had determined this type of dam repair project was categorical excluded from NEPA analysis per their agency's criteria. However, the NRCS has now completed an environmental evaluation of the proposed project to determine if additional review is need. The findings of that review are still pending.

FWP completed the EA to meet the requirements of MEPA for the review of a state action. In this case, the state action is the approval of a 124 permit.

Recommendation:

Based on the Environmental Assessment, public comment, and benefits and risks associated with this project as well as the ability to mitigate the potentially significant impacts by implementing the drawdown and refilling plans submitted by the City of Lewistown and NRCS, it is my decision that there would be no significant impacts on the human and physical environments associated with this project if mitigation measures are required as conditions in the 124 permit conditions. Therefore, I conclude that the Environmental Assessment is the appropriate level of analysis, and that an Environmental Impact Statement is not required.

Gary Bertellotti
Regional Supervisor

11/12/2011
Date