DECISION MEMO
GEORGE CREEK GREENBACK TROUT RESTORATION PROJECT
U.S. FOREST SERVICE
GEORGE & CORNELIUS CREEKS
CANYON LAKES RANGER DISTRICT
LARIMER COUNTY, CO

BACKGROUND AND PROJECT DESCRIPTION
The greenback cutthroat trout is currently listed as ‘Threatened’ under the Endangered Species Act (ESA), and recovery of the fish is guided by the Greenback Cutthroat Trout Recovery Team (RT). The RT includes signatories from Colorado Parks and Wildlife (CPW), the U.S. Forest Service (USFS), Bureau of Land Management (BLM), National Parks Service (NPS), and the U.S. Fish and Wildlife Service (USFWS). Further, field biologists from these same agencies have formed a collaborative working group with the primary goal of facilitating reintroduction of populations into suitable habitats in the South Platte Basin. Central to that goal is the need for coordination among agencies at the field level to develop long-term recovery planning, and to build support for individual projects from the field level up.

Through this collaborative approach, the George and Cornelius Creek watershed was identified as a high priority for establishment of a robust greenback cutthroat trout metapopulation. The George and Cornelius watershed offers up to 14 miles of potential cutthroat trout habitat, representing a large enough habitat patch, including two main tributary streams, to buffer against stochastic variability. Furthermore, compared to most other headwater streams where reintroduction of cutthroat trout may be feasible, George and Cornelius feature thermal conditions that fall within an optimal range for cutthroat trout recruitment, due to their relatively low elevation. Finally, these streams are already managed for a greenback cutthroat trout recovery population with regard to the Endangered Species Act, Section 7.

Recent advances in genetic and phenotypic understanding of native cutthroat trout in Colorado have revealed that the status of the species native to the South Platte Basin (i.e., Greenback cutthroat trout, henceforth) is poor. Currently, one population occurs in the wild outside of its native range. The need to pursue conservation and recovery for these native fish is therefore critical. Specifically, populations need to be established through reintroduction into suitable locations across the South Platte Basin.

George and Cornelius Creek were treated with rotenone in 1981 to eradicate brook trout and were re-stocked with greenback cutthroat trout. Although that population of cutthroat trout persisted for at least 2 decades, brook trout quickly reinvaded the system and were present by the mid-1980s. Two fish surveys in George Creek in 2013, and 4 surveys in George Creek and 2 surveys in Cornelius Creek in 2014, suggested that the present fish population is comprised only of brook and brown trout. Reports from the mid-1980s suggested that reinvasion by brook trout initially occurred from upstream sources in both George and Cornelius, indicating that the upper reaches of these streams were not adequately treated with rotenone. The habitat in the headwater portions of these streams is very complex, including numerous groundwater seeps associated with senescent beaver ponds. It is likely due to this complex headwater habitat that the initial reclamation ultimately failed, and that an adaptive and long-term approach will be necessary for the current proposed reclamation to be a success.
Whirling disease (WD) is parasitic disease that causes significant reductions in recruitment of most trout populations. It was first detected in lower George Creek in 2013, and is suspected to occur in Cornelius Creek. The only proven method for eliminating WD from the aquatic environment is to leave it barren of fish for several years, because the fish host is needed for the parasite that causes WD to complete its life cycle. Therefore, the parasite will not persist in the environment for more than 2 or 3 years in the absence of fish.

In cooperation with Colorado Parks and Wildlife, the Forest service will implement a multiphase greenback cutthroat restoration project in George and Cornelius Creeks (see Appendix A Map). These streams have been identified as priority streams for establishing a population of native cutthroat trout. Administration of chemical treatments in this project will be performed under the supervision of Colorado Parks and Wildlife. The State of Colorado, through the Colorado Department of Public Health and Environment, regulates pesticide applications, such as the herein through the Federal National Pollutant Discharge Elimination System (NPDES) permitting process. Mechanical equipment may be used to notch beaver dams and install temporary barriers and explosives may be used to blast beaver dams in some areas. Road maintenance work (including aggressive road maintenance, crossing repair, culvert & AOP installation or replacement, small re-routes of system roads, and decommissioning of unauthorized routes) is also planned along segments of forest roads that parallel or cross the George Creek drainage (188.0, 219.0, 195.B, 313.0) in order to decrease sediment contributions to the stream resulting in degraded fish habitat. Road work will require use of local borrow sites from existing disturbed areas along system roads in the project vicinity.

The project will be broken into multiple phases to be completed in sequence to assure a complete eradication of non-native trout and WD from the system. Once complete elimination of trout from the entire watershed is confirmed through sampling, the stream will need to remain fishless until it is confirmed that WD has been eliminated from the system. It is anticipated that each phase could take up to three years to complete (with some potential overlap between phases), and that the entire project may take as long as 9 years to complete. Restoration will be initiated in George Creek and depending upon outcomes in this watershed, Cornelius Creek reclamation efforts will be adaptively applied based on methods that were ultimately successful in the upper George Creek system. The four project phases are described below:

**Phase 1: Reclamation of upper George Creek**
- Construction of permanent barrier at George/Cornelius confluence site on CPW land
- Notching of up to four senescent beaver dams in upper George Creek
- Construction of up to two temporary barriers in upper George Creek
- Chemical treatment of upper George Creek using a fish toxicant, rotenone
- Introduction of cutthroat trout to upper George Creek

**Phase 2: Reclamation of upper Cornelius Creek**
- Beaver trapping and relocation in upper Cornelius Creek (translocate beaver families or colonies together to the extent practical)
- Blasting of dams associated with active beaver complex in upper Cornelius Creek
- Blasting of up to 3 senescent beaver dams in upper Cornelius Creek
- Construction of up to two temporary barriers in upper Cornelius Creek
- Chemical treatment of upper Cornelius Creek using a fish toxicant, rotenone
- Introduction of cutthroat trout to upper Cornelius Creek
**Phase 3: Reclamation of lower George and Cornelius Creeks**

- Chemical treatment of lower George and Cornelius Creek downstream to constructed barrier on George Creek, located within the CPW Upper Cherokee Unit State Wildlife Area
- Approximately two years of monitoring for WD parasite
- Introduction of cutthroat trout to lower George and Cornelius Creeks

**Phase 4: Project Conclusion**

- Removal of temporary barriers in George and Cornelius Creeks
- Beaver re-introduction (translocate beaver families or colonies together to the extent practical) to upper Cornelius Creek

**DECISION**

I have decided to implement the George Creek Greenback Restoration Project as described above with project design criteria attached in Appendix B. This action is categorically excluded from documentation in an environmental impact statement (EIS) or an environmental assessment (EA) per 36 CFR 220.6(d)(8): Approval, modification or continuation of minor, short-term special uses of NFS lands. This category of action is applicable because the project will be implemented by CPW in concert with the FS and the impacts are considered minor in nature.

I find that there are no extraordinary circumstances that would warrant further analysis and documentation in an EA or EIS. I took into account resource conditions identified in agency procedures that should be considered in determining whether extraordinary circumstances might exist:

- **Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species** – Consultation with USFWS was initiated on June 8, 2015 for this project and the Fish and Wildlife Service concurred with FS determinations on August 27, 2010. A determination of “may affect, likely to adversely affect” for Preble’s meadow jumping mouse was reached. Critical habitat for Preble’s mouse is not located in proximity to the project area. Design criteria along with terms and conditions will minimize impacts associated with this project to Preble’s. The project has been determined to have “no effect” to listed plant species (Colorado butterflybush and Ute ladies tresses orchid) due to lack of occurrences and suitable habitat within the project area. It was determined that the project “may affect, but is not likely to adversely affect” greenback trout. A determination of “no effect” was concluded for Platte River target species (whooping crane, least tern, and piping plover, pallid sturgeon). A determination of “no effect” was reached for Canada lynx because suitable habitat for this species will not be impacted by project activities. A determination of “no effect” was also reached for Mexican spotted owl because suitable habitat for this species is not located in proximity to project activities. Critical habitat for lynx and Mexican spotted owl is not located on the Forest. A “no impact” determination was reached for all Forest Service Sensitive species considered with the exception of Northern Leopard Frog and Boreal Toad. For Northern Leopard Frog and Boreal Toad a determination of “may impact individuals but will not lead toward a Federal Listing or trend toward loss of viability” based on suitable habitat in the project area.

- **Flood plains, wetlands, or municipal watersheds** – This project is not expected to have substantial negative impacts to flood plains, wetlands or municipal watersheds. Floodplains:
Because the beaver dams are in the floodplain, and there are no practicable alternative to locating the barriers and road-stream crossings in the floodplain; because design criteria would be incorporated to minimize impacts to the floodplain; and because public scoping for the decision memo serves notice of the proposed action in the floodplain, the proposed action is in compliance with Executive Order 11988, and would not invoke an extraordinary circumstance for floodplains. Wetlands: There is no practicable alternative to locating barriers or road-stream crossings in riparian wetlands or to breaching beaver dams. Design measures would be incorporated in the action to minimize wetland loss, and the wetland losses would be temporary. Public scoping for the decision memo serves notice to the proposed action in wetlands. Therefore, the proposed action is in compliance with Executive Order 11990. Municipal watersheds: If design criteria are applied during ground disturbing activities, and rotenone is applied according to label direction, there should be no measurable effect to the public water supply, and the project would not invoke an extraordinary circumstance for municipal watersheds. This project, implemented with associated design criteria, will comply with the Forest Plan standards for water resources. Actions that occur in streams and wetlands may require a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

- **Congressionally designated areas such as wilderness, wilderness study areas, or national recreation areas** – The project occurs outside of wilderness areas, wilderness study areas and national recreation areas and will not affect any of these designated areas.
- **Inventoried roadless areas or potential wilderness areas** – The project will not occur within, nor impact inventoried roadless areas or potential wilderness areas.
- **Research natural areas** – The project will not occur within research natural areas.
- **American Indians and Alaska Native religious or cultural sites** – Section 106 of the National Historic Preservation Act affords lawful protection of archaeological resources and sites that are on public and Indian lands. The Native American Graves Protection and Repatriation Act covers the discovery and protection of Native American human remains and objects that are excavated or discovered in federal lands. It encourages avoidance of archaeological sites that contain burials or portions of sites that contain graves through “in situ” preservation, but may encompass other actions to preserve these remains and items. No American Indian or Alaska Native religious or cultural sites will be impacted by this project.
- **Archaeological sites, or historic properties or areas** – A literature search using the records of the State Historic Preservation Office (SHPO), the cultural resource atlas of the Arapaho and Roosevelt National Forests, and all relevant CRM reports for the proposed project location was conducted on June 20, 2015. This project meets the definition of an undertaking as defined in 36CFR800.16(y); however no historic properties were identified in the area of potential effect for the proposed fish barriers. The road maintenance work proposed in the undertaking has not yet been identified and will be completely inventoried prior to implementation. If any cultural resources are identified during the inventory they will be evaluated for National Register of Historic Places (NRHP) eligibility in consultation with the State Historic Preservation Office. Any cultural resources found to be eligible for the NRHP will be avoided during project activities. The project will have no impacts to cultural resources.

**Public Involvement and Collaboration**

This action was originally listed as a proposal on the Arapaho and Roosevelt National Forest Schedule of Proposed Actions (SOPA) in August 2014. A scoping letter was sent on February 3, 2015 to a mailing list
of 83 individuals and organizations and a press release was circulated at the same time. This project information was published in the newspaper of record, The Fort Collins Coloradoan, on February 11, 2015. Those interested in the project were asked to submit comments by March 5, 2015. One letter of comment and one letter of support were received. Additionally, an informational meeting with the City Greeley and City of Fort Collins Water Division staffs was held on June 2, 2015.

**FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS**

This decision is consistent with the Arapaho and Roosevelt National Forest and Pawnee National Grassland Land Management Plan.

**ADMINISTRATIVE REVIEW OPPORTUNITIES**

This project is exempt from pre-decisional objections per 36 CFR 215.4(a) - actions not subject to legal notice and opportunity to comment.

**IMPLEMENTATION DATE**

Implementation of this project can be carried out following signature of this document and is expected to occur as early as September 2015.

**DATE**

For additional information concerning this decision, contact: Nehalem Clark, Environmental Planner, Canyon Lakes Ranger District, phone: 970-295-6617, e-mail: ncclark@fs.fed.us.

/s/ Michele White  
10/5/2015

Michele White  
Acting District Ranger

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**USDA NON-DISCRIMINATION POLICY STATEMENT**

DR 4300.003 USDA Equal Opportunity Public Notification Policy (June 2, 2015)

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USDA is an equal opportunity provider, employer and lender.
Appendix A. George Creek Greenback Restoration Project Map
Appendix B. George Creek Greenback Restoration Project Design Criteria

BOTANY/WEEDS

1. Prior to project implementation, areas will be surveyed that contain habitat for Threatened and Endangered (TE) plant species as well as medium- to high-quality habitat for Sensitive plant species. If found prior to or during project implementation, TE plants will be avoided such that there would be no adverse impacts to plants. Sensitive plants would be avoided or project actions mitigated to ensure that adverse impacts would not cause a trend toward listing under the Endangered Species Act (ESA) or decreased viability across the planning unit.

2. Plantings will use site-suitable native species. Whenever feasible, seedings will use site-suitable native species.

3. For site revegetation, tier to the Forest Revegetation Policy and minimize potential for weed introduction. All areas requiring seeding will be accomplished with seed approved by the Forest Botanist or USFS botany representative. Mulch disturbed areas within active floodplain area with wood straw.

4. Prior to ground disturbance associated with project activities, known weed infestations may be treated to minimize risk of future spread.

5. For staging areas, known noxious weed populations may be flagged on the ground for avoidance during layout. Do not locate staging areas or storage areas for any heavy equipment within these flagged areas, unless determined to be appropriate by the District weed coordinator.

6. Prior to entering the project area, equipment would be cleaned to minimize risk of noxious weed introduction and spread. This applies to all contract and Forest Service equipment used off road for this project (not including service trucks or other vehicles that remain on roadways). Equipment would be free of mud, dirt, plant parts, seeds, or other debris that could contain or hold seeds or propagative plant parts. Equipment would be considered free of soil and other debris when a visual inspection does not disclose such material. Equipment would be re-cleaned whenever equipment leaves and re-enters project site. Disassembly of equipment components or specialized tools is not required.

7. Keep vehicle traffic on designated roads to the degree possible.

8. Minimize soil disturbance to the extent practical and consistent with project activities.

FISHERIES/HYDROLOGY

9. When feasible, equipment should avoid crossing streams or cross via designated stream crossings. Prior and after to any construction work in or adjacent to stream channels or in-stream work, mud must be removed entirely from all off-road equipment (including both FS and contract equipment) and equipment decontaminated with extremely hot water, or a disinfectant or bleach.

10. Clearly delineate limits of construction and ground disturbance.

11. Excavation and heavy equipment operation in and adjacent to streams will only occur during base flow conditions.

12. Equipment fueling and staging areas will be located a minimum of 100 feet from water and an approved spill prevention plan will be required for refueling tanks in excess of 667 gallons.

13. Spill containment (ex: spill containment and isolation kit) and erosion control plans (ex: silt fence, straw wattles and maintenance) will be developed prior to project implementation.

15. If beaver dams that are to be breached (e.g. notched, blasted, etc.) are storing water or have water flowing through them, breach the dams during or just prior to spring runoff if feasible.

16. To minimize compaction and rutting, use equipment mats, logs, or other supports to support heavy equipment working on riparian or wetland soils during barrier installation and/or removal. Note: If selected barrier locations permit equipment to work from dry upland soils, mats would not be necessary.

17. Repair damage to wetland/riparian areas and/or disturbed uplands following installation and removal activities.

HERITAGE

18. National Historic Preservation Act (NHPA) Section 106 consultation will be negotiated with the appropriate agencies (the Colorado State Historic Preservation Office (SHPO); the Tribal Historic Preservation Officer(s) (THPO); the Advisory Council on Historic Preservation (ACHP); and/or other interested consulting parties) prior to the NEPA decision (in accordance with 40 C.F.R. 1500-1508).

RANGE

19. While livestock are in the unit, close any gates upon entering/leaving.

20. Delineate all infrastructure (ex: fences, gates, signs, water tanks) on treatment area maps during layout phase to protect them from damage from treatment activities. If damaged, repair or replace.

21. Coordinate with the Rangeland Specialist to assure communication with the permittee occurs prior to the project implementation to avoid conflicts with allotment management.

ROADS

22. When operating on or along the road prism, impacts to road surfaces and drainage ditches will be limited. When damage is unavoidable as a result of project implementation, reconstruction and/or replacement of road surfacing and/or drainage ditches and/or drainage features will be completed as necessary. The Forest Service engineer will determine post-operation, road maintenance, repair, reconditioning, or resurfacing needs on an individual basis.

WILDLIFE

23. Surveys would be conducted for egg masses, tadpoles, and toad or frog presence of sensitive amphibian species (boreal toad, northern leopard frog, wood frog) around suitable breeding habitat along treatment streams (e.g. beaver dams and ponds) prior to each phase of beaver dam removal and fish toxicant application. Should egg masses or tadpoles be located, actions will be taken in coordination with CPW to minimize impacts to a potential population of sensitive amphibian species. Actions may include: (1) transplanting egg masses or tadpoles to other nearby suitable habitat; (2) transporting egg masses or tadpoles to a CPW hatchery/propagation facility; and (3) transplanting or re-introducing the amphibian species back into the site after fish restoration activities are complete and suitable habitat conditions have been reestablished.

24. Use of fish toxicant chemicals (e.g. antimycin and rotenone) in occupied habitat of sensitive amphibian species would occur after tadpoles have metamorphosed and left the water. Current information from Colorado Parks and Wildlife (CPW) indicates there is no known occupied habitat.
25. Generally, chemical applications would not occur prior to August 1 and would normally conclude by October 15, which will avoid sensitive nesting and denning periods for wildlife. However, chemical applications may occur during the last week of July, if site-specific stream conditions reveal earlier fish spawning that would trigger the need for earlier application.

26. If raptor nesting activity (e.g. nesting behavior, nest sites, or fledglings) is detected within the project area or areas potentially impacted by proposed project activities prior to or during implementation, a Forest Service wildlife biologist will be contacted as soon as possible to ensure Forest Plan guidelines for raptor protection are met.

27. If a federally-listed or Forest Service sensitive wildlife species is identified within project sites or areas potentially impacted by proposed project activities prior to or during implementation, a Forest Service wildlife biologist will be contacted to assess the situation and to ensure Forest Plan guidelines are met.

Wildlife Terms and Conditions (per USFWS BO)

28. USFS shall ensure that proposed Conservation Measures (outlined above) are formally adopted and implemented.

29. USFS shall monitor the revegetation of all temporarily disturbed areas and restored areas for at least three growing seasons following habitat restoration activities, or until such time that the USFS and the Service determine that foliar cover reaches 80% cover of adjacent undisturbed areas and that success has been achieved. USFS shall monitor and manage for weeds.

30. Monitoring reports will be provided annually to the Service by December 1.

31. In the unlikely event that a Preble's meadow jumping mouse is encountered (dead, injured, or hibernating), the Colorado Field Office of the Service shall be contacted immediately at (303) 236-4773.

OTHER

32. Ensure CPW develops a communication plan in advance of project implementation.