

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: ***Oncorhynchus clarki virginalis***/Rio Grande cutthroat trout

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	A	Rio Grande cutthroat trout is endemic to the Rio Grande basin in Colorado. Occurs on 1 Forest in R2 (RGNF). Approximately 60 refugia populations exist in Colorado (includes historic and transplanted populations). However, of these, only 20 are considered stable and secure or expanding. In addition, about 60 sites are considered "management" waters. Refugia populations are considered self-sustaining; management populations are stocked with Rio Grande cutthroat trout and are not considered self-sustaining. Rio Grande cutthroat trout occurs in 10% or less of its expected historic range in Colorado. Restricted to headwater tributaries within historic range. Listed as a "Species of Special Concern" in Colorado. Colorado Natural Heritage Program Rank of "very rare and local throughout its range" (S3). Currently listed as a sensitive species in Region 2 of the Forest Service. Considered a "species of special concern" by the American Fisheries Society. Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> • Alves, 1998. • Alves, 1999. • Colorado Natural Heritage Program. • CDOW fisheries inventories, 1999-2000. • Stumpff and Cooper, 1996. • Williams et al., 1989. • Zuckerman, 1984.
2 Distribution outside R2	B	Rio Grande cutthroat trout was once widespread throughout the upper Rio Grande, Canadian River and Pecos basins of New Mexico. It may have occurred as far south as Chihuahua, Mexico. It has been extirpated from large portions of its historic range, currently occupying 10% or less of historic range. It was listed as a New Mexico state "Species of Concern" in 1994. It is currently listed as a sensitive species in Region 3 of the Forest Service. Also considered a "species of special concern" by the American Fisheries Society. Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> • Behnke, 1979. • Behnke, 1992. • Calamusso and Rinne, 1996. • Calamusso and Rinne, 1999. • Koster, 1957. • New Mexico Department of Game and Fish. • Stefferud, 1988. • Stumpff and Cooper, 1996. • Sublette et al., 1990. • Williams et al., 1989.
3 Dispersal Capability	A	Existing populations are disjunct, occurring in isolated headwater stream segments. Dispersal capability likely very low due to fragmented habitat. Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> • Behnke, 1979. • Behnke, 1992. • Calamusso and Rinne, 1999. • Harig and Fausch, 1997. • Harig and Fausch, in press. • Rinne, 1995. • Sublette et al., 1990. • Young, 1995.

Species: *Oncorhynchus clarki virginalis*/Rio Grande cutthroat trout

Criteria	Rank	Rationale	Literature Citations
4 Abundance in R2	A	<p>Status of populations in Colorado varies, but most populations are small, highly imperiled (non-native species present, habitat degradation), and at risk from stochastic or other factors (e.g., fire, replacement by non-natives, etc.). Estimated total population size ranges from a low of 30 fish to a high of 24,000. Average population size is estimated at 2200 fish.*</p> <p>* Population data based on CDOW available information. No confidence intervals are reported, as data collection method does not allow this level of statistical analysis. Total population size based on typically 1 or 2 reaches sampled using 2-pass removal; values are extrapolated over the entire stream length.</p> <p>Confidence in Rank High or Medium or Low</p>	<ul style="list-style-type: none"> Alves, 1998. Alves, 1999. CDOW fisheries inventories, 1997-2000. Harig, 2000. Rinne, 1995. Stumpff and Cooper, 1996.
5 Population Trend in R2	A	<p>Rio Grande cutthroat trout was historically very abundant throughout its range, being described as “abundant in the upper Rio Grande, and in all tributary streams down to the level of the valley” (Jordan, 1891). Rio Grande cutthroat trout has declined rapidly, now occupying only a small portion of its historic range. Only 20 refugia populations (33%) are considered stable and secure or expanding. The remaining refugia populations (40, 67%) are at risk from co-occurring non-natives (72%), habitat degradation (14%), or potential risk from non-natives due to failed barriers (14%).</p> <p>Confidence in Rank High or Medium or Low</p>	<ul style="list-style-type: none"> Alves, 1998. Alves, 1999. Jordan, 1891. Rinne, 1995. Stumpff and Cooper, 1996. Zuckerman, 1984.
6 Habitat Trend in R2	B	<p>Habitat condition trend varies from slightly improving to stable to downward. Stream dewatering, spring development, habitat degradation from grazing, roads, etc. still occurring in many places. Some improvements in habitat are occurring on public land as a result of improved management practices and restricted use as compared to historic use levels. Several populations occur on large private ranches. Overall condition of watersheds where Rio Grande cutthroat trout occur is reported as either good or fair (Stumpff and Cooper, 1996).</p> <p>Confidence in Rank High or Medium or Low</p>	<ul style="list-style-type: none"> Alves, 1998. Alves, 1999. Stumpff and Cooper, 1996. Swift-Miller, pers. Obs. Zuckerman, 1984.

Species: ***Oncorhynchus clarki virginalis***/Rio Grande cutthroat trout

Criteria	Rank	Rationale	Literature Citations
7 Habitat Vulnerability or Modification	A	Habitat is very vulnerable to modification from management activities including grazing, road construction, dewatering, logging, etc. Habitat fragmentation serious threat. Current direction (Rio Grande Forest Plan standards and guidelines) probably reasonably protective of habitats, when adhered to. Confidence in Rank <i>High</i> or Medium or Low	<ul style="list-style-type: none"> • Alves, 1998. • Alves, 1999. • Calamusso and Rinne, 1996. • Calamusso and Rinne, 1999. • Harig and Fausch, 1997. • Harig and Fausch, in press. • Rinne, 1995. • Rinne and Platania, 1995. • Stefferud, 1988. • Stumpff and Cooper, 1996. • Sublette et al., 1990. • Young, 1995.
8 Life History and Demographics	A	Hybridizes with non-native trout (rainbow and other non-native cutthroat sub-species). Competition with non-native trout also critical—non-natives replace Rio Grande cutthroat trout where they co-occur. Very susceptible to angling pressure and threats from whirling disease. Confidence in Rank <i>High</i> or Medium or Low	<ul style="list-style-type: none"> • Alves, 1998. • Alves, 1999. • Behnke, 1979. • Behnke, 1992. • Calamusso and Rinne, 1996. • Calamusso and Rinne, 1999. • Rinne, 1995. • Stumpff and Cooper, 1996. • Sublette et al., 1990. • Young, 1995.
Evaluator(s): /s/ Sue Swift-Miller, Rio Grande National Forest; sswiftmiller@fs.fed.us			Date: 3 August 2001

National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)¹ to occur:

¹ Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

<u>Colorado NF/NG</u>		<u>Kansas NF/NG</u>		<u>Nebraska NF/NG</u>		<u>South Dakota NF/NG</u>		<u>Wyoming NF/NG</u>	
Known	Likely	Known	Likely	Known	Likely	Known	Likely	Known	Likely
		Cimmaron NG		Samuel R. McKelvie NF		Black Hills NF		Shoshone NF	
				Halsey NF		Buffalo Gap NG		Bighorn NF	
				Nebraska NF		Ft. Pierre NG		Black Hills NF	
				Ogalala NG				Medicine Bow NF	
								Thunder Basin NG	
	X								

REFERENCES:

Alves, John. Pers. Comm.. Colorado Division of Wildlife, Monte Vista, Colorado.

Behnke, R. J. 1979. The native trouts of the genus *Salmo* of western North America. Report to the U. S. Fish and Wildlife Service, Denver, Colorado.

Behnke, R. J. 1992. Native trout of western North America. American Fisheries Society Monograph 6.

Calamusso, B. and J. N. Rinne. 1996. Distribution of the Rio Grande cutthroat trout and its co-occurrence with the Rio Grande sucker and Rio Grande chub on the Carson and Santa Fe National Forests. Pp. 157-167 *In*: Shaw D. W. and D. M. Finch (technical coordinators), Desired future conditions for Southwestern riparian ecosystems: Bringing interests and concerns together. Gen. Tech. Rept. RM-GTR-272. United States Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Calamusso, B. and J. N. Rinne. 1999. Native montane fishes of the Middle Rio Grande Ecosystem: Status, Threats and Conservation. Pp. 231-237 *In*: Finch, D. M., et al. (Technical Coordinators), Rio Grande Ecosystems: Linking land, water, and people. Toward a sustainable future for the Middle Rio Grande basin. 1998 June 2-5, Albuquerque, New Mexico. Proceedings RMRS-P-7. Ogden, Utah: U. S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 254 pp.

Colorado Natural Heritage Program status ranks database.

Colorado Division of Wildlife (CDOW) Fisheries Inventories, Rio Grande river basin. 1997-2000.

Harig, A. L. and K. D. Fausch. 1997. Evaluating risks of extinction from habitat fragmentation for native cutthroat trout in Colorado and Wyoming. Annual progress report to the Colorado Division of Wildlife, U.S. Forest Service, and Trout Unlimited.

Harig, A. L. and K. D. Fausch. 2000. Factors influencing success of cutthroat trout translocations. Final Project Report to Colorado Division of Wildlife, U.S. Forest Service, and Trout Unlimited.

Harig, A. L. and K. D. Fausch. In Press. Minimum habitat requirements for cutthroat trout translocations. Ecological Applications.

Jordan, D. S. 1891. Report of explorations in Colorado and Utah during the summer of 1889, with an account of the fishes found in each of the river basins examined. Bulletin of the U. S. Fish Commission. 9:1-40.

Koster, W. J. 1957. Guide to the fishes of New Mexico. Univ. of New Mexico Press. Albuquerque.

New Mexico Department of Game and Fish, Santa Fe, NM. Biota Information System of New Mexico (BISON web page).

Rinne, J. N. 1995. Rio Grande cutthroat trout. *In*: Young, tech. Ed. Conservation assessment for inland cutthroat trout. General technical report RM-256. Fort Collins, CO: U. S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 61 pp.

Rinne, J. N. and S. P. Platania. 1995. Fish fauna: *In*: Finch, D. M., and J. A. Tainter, eds. Ecology, diversity, and sustainability of the middle Rio Grande Basin. General Technical report RM-GTR-268. United States Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Sublette, J. E., M. D. Hatch, and M. Sublette. 1990. The fishes of New Mexico. University of New Mexico Press, Albuquerque.

Young, M. K. 1995. Synthesis of management and research considerations. *In*: Young, tech. Ed. Conservation assessment for inland cutthroat trout. General technical report RM-256. Fort Collins, CO: U. S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 61 pp.

Zuckerman, L. D. 1984. Rio Grande fishes management. Annual report, July 1983 to June 1984, to Colorado Division of Wildlife, Fort Collins, Colorado. 141 pp.