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5/4/2012

Mr. Chandler Peter
US Army Corps of Engineers
Denver Regulatory Office
9307 South Wadsworth Blvd.
Littleton, CO 80123

Dear Mr. Peter,

I write today to relay the results of an assessment of the recreational fishery potential for the proposed Glade Reservoir. Some advocates of NISP suggest that having another reservoir fishery in Northern Colorado would be an asset. On close examination, yes, the opportunity would be present, but the promise would likely be hollow.

McConnell at al. (1984) developed a pattern judgment model that can be used to predict the habitat suitability of yet-to-be-built reservoirs based on easily measured structural characteristics of the reservoir basin, local site climate, operational regime, and inflow characteristics. Bergersen and Martinez (2003) have validated this model on two Colorado reservoirs with excellent success. We have applied the model to the Glade Reservoir site and determined that the proposed reservoir would provide only marginal habitat for all of the species the model deals with. A brief explanation follows:

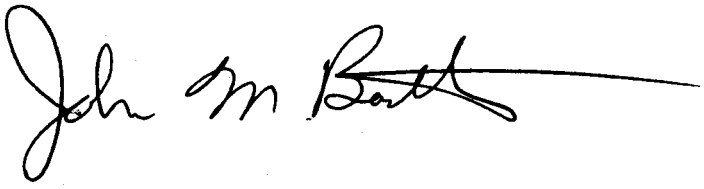
Methods. Two site visits in February 2012 were supplemented with data gathered from the NISP DEIS and readily available mapping and climatic data. During the site visits we used a GPS with calibrated elevation read-out to survey the shoreline at mid- and high-water elevations for both the eastern and western arms of the basin. There was no snow cover to obscure any landforms. We also took photos for later scrutiny, particularly around the proposed dam site. Access was via publicly accessible land only. A compiled list of the model's input variables is given in Table 1.

Results. Based on these attributes, the McConnell at al. (1984) model resulted in the habitat description code "23212" that translates into a habitat rating for the 10 species listed in Table 2. The results appear to be insensitive to minor changes in the input variables.

Conclusion. Application of the model by McConnell at al. (1984) suggests that fishery potential for the proposed Glade Reservoir is marginal. Though most every newly constructed reservoir might be expected to exhibit the "new reservoir" burst in productivity for the first 5 years or so, one could not expect, based on the species evaluated in Table 2, much more than a mediocre fishery at best in the long run.

We hope this information proves useful in assembling a well rounded Supplemental Draft EIS for the proposed NISP. If we can answer any questions about this analysis, please let us know.

Sincerely,



John Bartholow, for
Save The Poudre: Poudre Waterkeeper

Eric Bergersen,
Fishery Research Biologist
USGS, Retired

References

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cc: Colorado Division of Parks and Wildlife, c/o Ken Kehmeier

Table 1. Model input variables and their sources used for the Glade Reservoir site evaluation.

Attribute	**Value**
Growing season length http://cmg.colostate.edu/gardennotes/746.pdf	120-170 d
Mean July air temperature http://ccc.atmos.colostate.edu/cgi-bin/monthlydata.pl	60-70°F
Reservoir storage ratio http://www.northernwater.org/WaterProjects/NISP.aspx/	4.43
Depth of outlet in relation to mean depth Integra Engineering (2010)	Below
Maximum fetch Estimated from NISP DEIS figures	7.2 km
Mean depth Integra Engineering (2010)	47 m
Mineral turbidity Estimated based on Intera and CH2MHILL (2007)	>1 m
Aerial extent of structure Estimated from site surveys	<10%
Percent structure units on deepest half of bottom Estimated from site surveys	<10%
Mean height of structural units Estimated from site surveys	5-20%
Mean density of structural units Estimated from site surveys	<50
Linear extent of structure in deepest half of reservoir Estimated from site surveys	10-30%
Linear extent of structure at basin full Estimated from site surveys	20-50%
Mean height of cliffs or shoals as % of mean depth Estimated from site surveys	>20%
Extent of maximum drawdown Estimated from NISP DEIS Figure 7-2.	10 m/yr
Time of maximum drawdown Estimated from NISP DEIS Figure 7-2.	Sept/Oct
Shoreline development factor Calculated from maps from NISP DEIS	10.68

Table 2. Reservoir habitat rating for ten fish as predicted in the McConnell at al. (1984) model.

Species	Low	Low medium	High medium	High
Small mouth bass	X			
Large mouth bass	X			
Northern pike	X			
C catfish (reproducing)		X		
C catfish (stocked)		X		
Black crappie		X		
White sucker		X		
Rainbow trout		X		
Yellow perch		X		
Carp		X		