

Water Assembly - Annual Meeting 2009

“Five Years after the Regional Water Plan”

What's Changed Since the 2004 Plan?

- New ESA Info



Michael Jensen - Amigos Bravos, *Friends of the Wild Rivers*

Overview

- ESA Summary
- Water Quality & Quantity Issues
- Where Do We Go From Here?



- ESA Summary

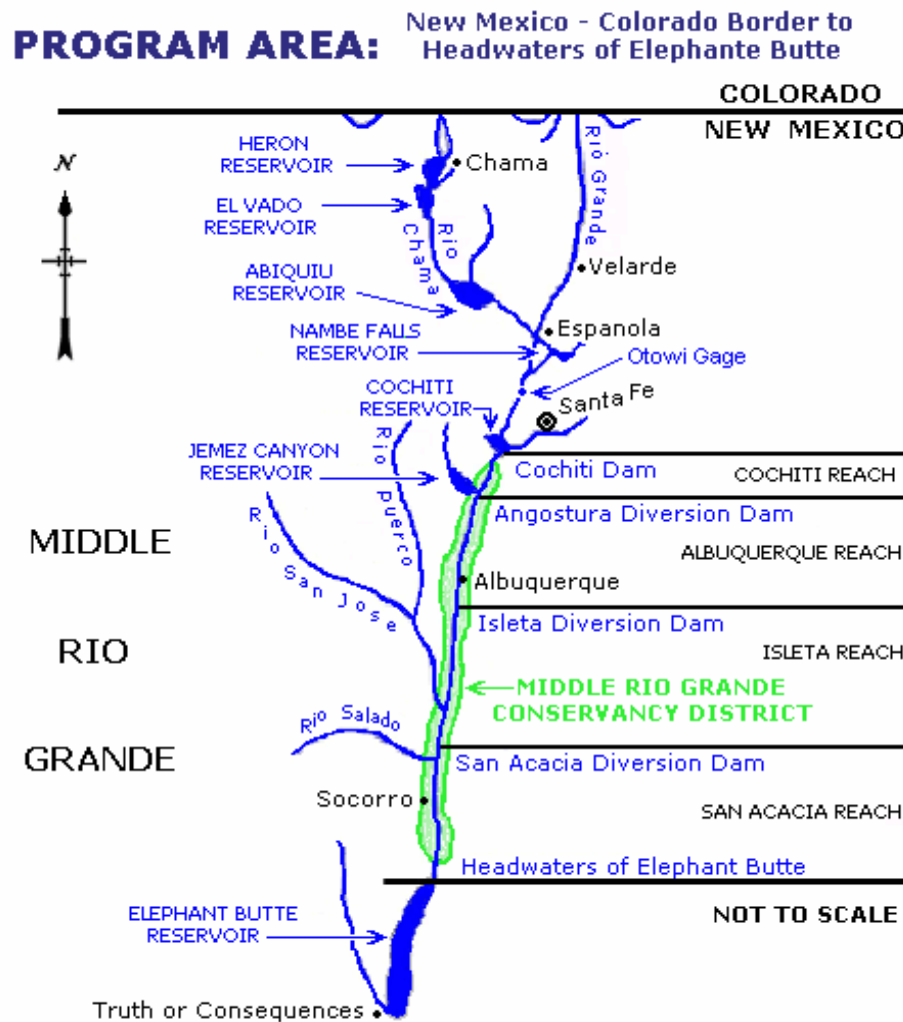
ESA Summary

The Middle Rio Grande Endangered Species Collaborative Program (MRGESCP) is a partnership involving 17 signatories

- to protect and improve the status of endangered species along the MRG
- to protect existing and future regional water uses

The Program uses habitat restoration, fish passage, species monitoring, silvery minnow propagation and rescue, water acquisition and management, and water quality studies

ESA Summary



ESA Summary

The ESA clashed with the San Juan-Chama Project

- 2001 FWS Biological Opinion – BoR & Corps actions “likely to jeopardize”
- BoR couldn’t meet supplemental water needs during 2002 drought
- Tenth Circuit decision (6-03) gave the ESA priority over diversions for Albuquerque and the MRGCD
- Domenici (and Bingaman) efforts to legislate against the Court decision through riders and ESA reform
- 2003 FWS Biological Opinion
- New BiOp may suggest need for increased water supply for ESA ...

ESA Summary

ISSUE:

The ESA controversy highlights the conflict – in the MRG and across the arid West ... and beyond – between the water needs of rapidly growing urban areas and the historical preeminence of irrigated agriculture

Where is the “supplemental water” – the issue that confronted the BoR – going to come from?

ESA Summary

Water Acquisition and Management

- Projected annual average water demand to meet ESA needs estimated at 50,000 acre-feet
- San Juan-Chama lease water (e.g. 13,000 acre feet annually in 2003) will decrease as Project users start utilizing their contract water

ESA Summary

10-year Water Acquisition Schedule (2005 - 2014)

- ~8000afy from SJ-C Supplemental Water – down from 15,000afy in 2005
- ~6000afy from “Emergency” Water (S/T Supply) – down from ~35,000afy in 2005
- ~10,000afy of Long-Term Water (permanent acquisition plus storage ...) – *starting from zero in 2005*
- ~6000afy from “Voluntary Irrigation Forbearance and Conservation” water – *starting from zero in 2005*
- ~26,000afy from “Water Management Efficiencies, Salvage, and Habitat Savings” – *starting from zero in 2005*

Overview

- Water Quality & Quantity Issues

Water Quality & Quantity Issues

Passell, Dahm, & Bedrick (2007)

- “We conclude that NH₃ [ammonia] toxicity must be considered seriously for its potential ecological impacts on the Rio Grande and as a mechanism contributing to the decline of the Rio Grande fish community in general and the Rio Grande silvery minnow specifically.”
- Improvements at the SSWRP, but NH₃ could still pose a threat with increasing populations upstream and downstream of Albuquerque, accidental spills, synergistic effects of mixed toxicants
- Declining water quality is a hidden consequence of drought in effluent-influenced streams

Water Quality & Quantity Issues

David Van Horn, UNM Biology

- Waste water treatment plants increase nutrient loads by ~2000%
- The MRG diversion network breaks the RG down into lots of smaller streams ... the ~2100km of diversion works is 7x the length of the river along the same reach
- The river removes about 50% of nutrients discharged into it; the diversion system lowers nutrients to 5-10% of discharge loads
- There are turbidity spikes in the MRG that reflect the impact of episodic events; associated with sharp DO drops and higher salts levels

Water Quality & Quantity Issues

Water quality monitoring of the Middle Rio Grande Annual baseline condition and trends ... Final report

- Sediment samples showed some arsenic, cyanide, and semivolatile/polycyclic aromatic hydrocarbons (especially above the Alameda Bridge)
- Fish samples – carp with lesions; zinc everywhere; DDT associated with the Angostura and Albuquerque WWTPs; several other metals above Elephant Butte mean; PCBs

Water Quality & Quantity Issues

Water quality monitoring of the Middle Rio Grande

- DO levels below water quality criteria from Angostura Diversion to Isleta Pueblo boundary
- One ammonia exceedence (5x the acute toxicity level)
- The ammonia concentration and low DO reached levels where large fish kills would be expected
- Aluminum concentrations above the chronic aquatic life criteria in several locations; also Copper, Chromium, and Cadmium
- Exceedences of water quality criteria for bacteria (*E. coli*) in most of the area
- “ ... nearly complete absence of detectable organic chemicals”
- Unknown synergistic impacts

Water Quality & Quantity Issues

Water quality monitoring of the Middle Rio Grande

- SWQB collaborated in 2007 with the EPA to test for PPCPs in WWTP effluents in the MRG
- Analyses performed on treatment plant effluent only ... results don't provide information about concentration in the river
- SWQB collected effluent samples from seven MRG WWTPs: Rio Rancho, Bernalillo, Albuquerque, Bosque Farms, Los Lunas, Belen, and Socorro
- Results detected 36 of the 54 PPCP analytes in at least one of the 7 WWTP effluents
- A total of 20 PPCPs were detected in all 7 WWTP effluents

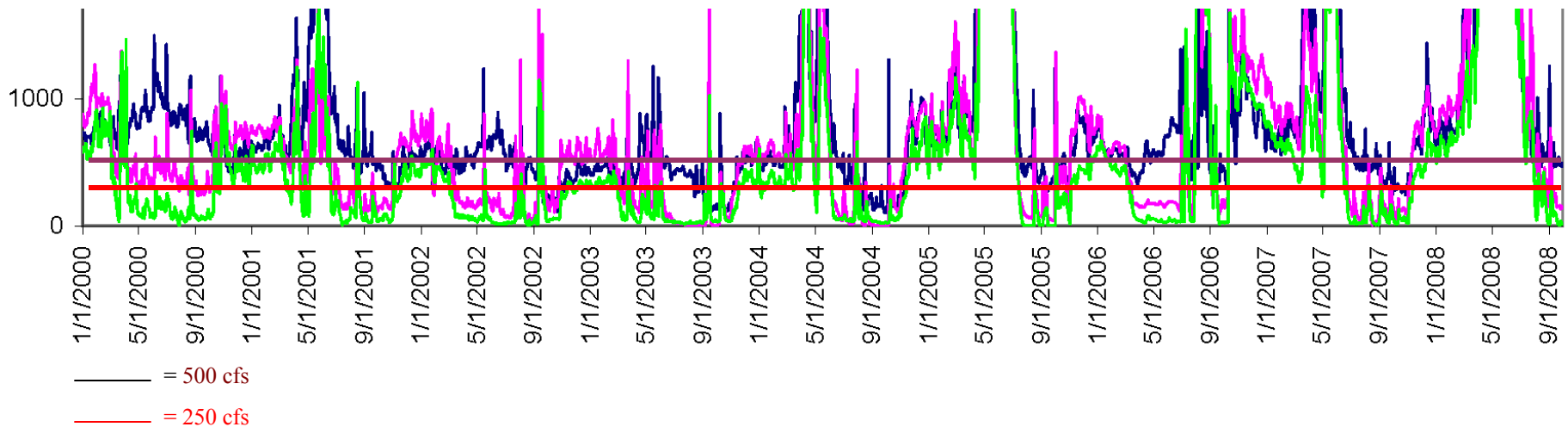
Water Quality & Quantity Issues

Water quality monitoring of the Middle Rio Grande

- “ ... documented water quality issues are at levels where RGSM are exposed to conditions that may impact reproduction and respiration, and are likely producing local conditions that fish must avoid for survival, further stressing the fish and reducing the likelihood for recovery”
- “Fish tissue concentrations of mercury and PCB’s in the adult carp collected during this study are at levels of concern for the protection of wildlife”
- “Given the xenestrogens entering the MRG via WWTPs, are their intersexing issues with the RGSM?”

Water Quality & Quantity Issues

Figure 3. Middle Rio Grande discharge at select USGS gages from January 2000 – September 2008.



Source: Middle Rio Grande Baseline Water Quality Survey - Final Report (p.4)

- What do we do if Rio Grande flows drop by 20 or 30%?
- Not to mention drops in Colorado flows, a renegotiated Colorado Compact, and possible cuts in SJ-C deliveries ...

- Where Do We Go From Here?

Where Do We Go From Here?

- Assuming climate change models are correct ... Where will the water come from for the growing urban area, irrigation, Compact deliveries, and environmental (ESA and Bosque) needs?
- The Water Quality Monitoring final report identified many constituents that may likely be impacting aquatic life, but which do not have standards ... What do we need to do to ensure better water quality for both environmental and human health?

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