

DOLORES RIVER DIALOGUE

Nov. 30, 2010

draft – 8 pages

Agenda: The agenda was approved with no changes.

DRD restructuring

Review of restructuring process: Facilitator Marsha Porter-Norton said since the last meeting of the full DRD in March, the DRD structure and process have been revamped to make them more efficient. Also, the DRD web site has been revamped to include additional minutes and updated information.

Meghan Maloney and David Graf of the DRD Steering Committee (DRD-SC) helped explain the changes. They said the Technical Committee had become so large and loosely organized that it was cumbersome, so it was streamlined, without losing any of the key constituencies, and became the DRD-SC. At first, the SC focused on securing funding and support and developing the Framework Process for DRD proposals. Since then, the SC has been examining some of the proposals that have come through the process.

The DRD-SC meets one morning a month, with alternating Science Committee or Hydrology Committee meetings following in the afternoon. Meghan said the Hydrology and Science Committees are open to everyone. The Hydrology Committee will be reviewing hydrology documents related to the Dolores River. The Science Committee reviews projects as they come through the DRD Framework Process.

The DRD-SC has secured funding to ensure staffing for the SC and the full DRD, as well as coordination for the Framework Process. The Dolores Water Conservancy District (DWCD), The Nature Conservancy (TNC), and the San Juan Citizens Alliance (SJCA) all have provided funds for coordination, and it is hoped that other entities may be able to contribute in 2011. The DRD-SC is also making a grant request to the Southwestern Water Conservation District.

Don Schwindt of the DRD-SC said the committee is trying to find the right mix of paid and volunteer efforts from each of the institutions involved and to build trust in the projects that are created. He thinks the SC has made significant headway. It has received grants to pay Marsha as facilitator and Ann Oliver as science coordinator.

DRD membership: Dave Schneck, San Miguel County environmental health coordinator, asked why his county was not listed among the stakeholder members of the full DRD. Marsha and others said it was an oversight and noted that San Miguel County Commissioner Art Goodtimes has been involved in the DRD since the beginning. **It was agreed to add San Miguel County to the list of stakeholders.**

Tom Clema asked why commercial rafters are not a listed stakeholder. Aaron Kimple of the SJCA said the Dolores River Coalition, a coalition of business, environmental, conservation and recreation groups interested in the health of the Dolores River, are among the stakeholders and provide representation for commercial rafting.

Cole Crocker-Bedford asked why there should be any limit to the number of stakeholders. Don said it is necessary to have the consent of the DRD's members on issues the DRD decides to support, and this requires having an established membership. However, he noted that meetings are open to whoever wants to come. Marsha reminded everyone that the restructuring was approved by the full DRD at the March, 2010 meeting.

Christy Massengill, riparian ecologist with Mainstream Contracting, said other groups she has been involved in simply have a public-at-large designation for whoever wants to come. **It was agreed to list the public-at-large as a stakeholder for the DRD.**

DRD goals: Mely Whiting of Trout Unlimited asked how "success" is defined for the group – what its specific goals and measures of success are. She said, in order to be successful, a group needs a vision – e.g., what will the river look like in five or 10 years? How do we get there?

Marsha said a key DRD goal has been to find do-able alternatives for achieving the DRD's stated purpose of working to improve the downstream environment while honoring water rights, protecting agricultural and municipal water supplies, and allowing the continued enjoyment of rafting and fishing.

David Graf said the DRD's goal for this first six-month period following the restructuring has been to have a functional process, and he thinks that has been achieved. Next steps will include defining more-specific goals such as better riparian habitat, more fish biomass, etc. This can be done by the full DRD or at the SC level.

Marsha said she believes many concrete things are being accomplished but they haven't been packaged into a goals statement. She said some goals are also emerging through specific proposals presented to the DRD.

Several others agreed with Mely that the DRD needs measurable goals that might be updated each year. Shauna Jensen of the San Juan Public Lands Center said, as a land-management agency, the SJPLC would feel more comfortable knowing what the group's short-term and long-term goals are.

Tom Klema of commercial rafting suggested having an issues inventory with a goal for each issue. Meghan said an issues inventory would be helpful for new people who may join the DRD. Matthew Clark of Trout Unlimited suggested a web-based mechanism to allow people to add to the issues inventory so it becomes institutional knowledge.

Marsha said the issues are fairly clear, but there is a need to state what will be done on the ground to deal with those issues. She said she felt it may be duplicative to spend months creating an issues inventory since the DRD and the Lower Dolores Plan Working Group have spent so much time identifying issues and concerns. Mely said it would be best to have the goals statement be brief and focused. She agreed that this should be done promptly rather than launching a lengthy process to develop goals and objectives.

Ann Oliver and Marsha noted that the DRD Science Committee and Technical Committee did devise a set of specific proposed/potential desired outcomes (goals) that were not approved by

the full DRD, and those could be a starting point for further discussion. Marsha said this would be a good place to start.

Chris asked how the 319 study being done by Chester Anderson of BUGS Consulting might fit into DRD issues and goals. Marsha said part of Chester's work is an issues inventory for the watershed and it might be helpful in identifying additional goals. However, someone commented that there are other issues such as recreation that would not be included in Chester's inventory.

It was asked whether goals should involve only the narrow river corridor or broader recreational/social/economic goals for the landscape. Some said it would be better to focus on the river and riparian area. Shauna said becoming too broad would mean doing a Forest Service-level management plan. However, Chuck Wanner of TU said the goals should include the broader landscape, as the Lower Dolores Working Group has done in its efforts.

Marsha said the DRD-SC will consider this and can come back to the DRD with ideas at the next DRD meeting in March 2011.

Proposals under discussion by the DRD-SC

Proposal by the Legislative Committee of the Lower Dolores Working Group ("A Way Forward"): Mike Preston of the Legislative Committee reviewed the history and background of the Legislative Committee and the Lower Dolores Working Group (LDWG).

He said the Leg Comm, which is made up of people with very diverse backgrounds and interests, has met approximately 20 times. Through its members' willingness to compromise, this group has been able to reach consensus on some sticky issues surrounding protection of the Lower Dolores through National Conservation Area status, including whether and where to allow mineral extraction in the river corridor and surrounding landscape. The committee has done outreach to Montrose County, which does not yet have such a forum for the conservation community, federal land managers and traditional interests to work together. One of the Montrose County commissioners asked for an informational workshop there. The meeting was held in Naturita and attorney David Robbins made a presentation similar to the one he made to the LDWG regarding the benefits of establishing certainty in land management, and working out arrangements to resolve conflict rather than just reduce it. Now Montrose County is considering joining the effort and supporting the NCA legislation.

Mike and Peter Mueller of the Leg Comm said the committee developed a long list of consensus-based land protections but could not agree about water protections. The issue of native fish proved to be particularly problematic. There are three native species of concern in the river: the roundtail chub, which is listed as an Outstandingly Remarkable Value in the San Juan Public Lands' Wild and Scenic Rivers eligibility inventory; the flannelmouth sucker and the bluehead sucker. The conservation community sees value in protecting native species, while the water community sees their possible endangered-species listing as a threat to water supplies.

The Leg Comm decided to commission three independent scientists to take a look at existing information regarding these native species and identify opportunities to help improve their status, working within the sideboards of available hydrology and institutional responsibilities. The native fish inquiry is an attempt to ascertain what opportunities exist to help native fish

both through legislation and outside of it. The scientists will study the matter independently, then as a team. Mike said three excellent scientists have been hired who have expertise in native fish and rivers, but do not have a specific interest in the Lower Dolores.

The Leg Comm set a funding target of \$80,000 for the inquiry; \$73,500 has been raised to date. The SJCA is administering the grant funds.

Mike presented a time line for the inquiry and described it as tight. It is scheduled to conclude in July 2011.

Q & A regarding “A Way Forward”: Chris asked why more information was needed about native fish when the Division of Wildlife gave a presentation about native fish at the last meeting of the DRD in March. Marsha and Peter said there was some disagreement about that presentation and some concern that the DOW was implying that the river is “starved” of water and someone is at fault. There is disagreement among stakeholders regarding native fish – not so much about the science, but about how to proceed. The Legislative Committee is trying to find a way forward with shared solutions. Therefore, the decision was made to provide a body of work to the scientists that will include DOW research as well as other research. The scientists will not be doing new field work and research. The idea of the inquiry is to get independent scientists to take a fresh look at all available science and bring forth recommendations.

Marsha said those recommendations will be vetted by an oversight panel, as well as the Leg Comm, the LDWG and the full DRD.

Tom Klema of the Dolores River Coalition asked whether newly elected U.S. Representative Scott Tipton will be supportive of legislation to protect the Lower Dolores through an NCA. Mike said he believes so.

Ann said the difficult bridge to be crossed regarding the native fish is what can actually be done to help them given existing hydrology, and she asked whether enough time had been devoted to that portion of the process. She noted that the timeline calls for only a two-day meeting in May to try to reach consensus on do-able alternatives. Mike said the discussion actually will start in February when the scientists first report to the oversight panel. That is why representatives of the Bureau of Reclamation and DOW are on the panel. Marsha said there is extra time in July allotted for resolving issues.

Don agreed with Ann’s concern and said even February may be too late. Mike said the oversight panel is responding to concerns and will shape the process as it moves along.

After lunch, Mely asked what information is being provided regarding hydrology and water rights available for leasing. Mike said the scientists will be provided data on flows, spills, and the fish pool going back many years. Regarding leasing, Mike said a lease of 6,000 acre-feet has been suggested, so the scientists are being asked how they would use 6,000 acre-feet to benefit native fish if it were available.

Dale Smith said he had heard that, before the dam, farmers and ranchers had to dig into the river channel 30 or 40 feet deep to provide water for themselves and stock in dry months. He asked whether water-users and stakeholders on the Dolores will be held to a higher standard for

native-fish habitat because of the presence of the reservoir. He said, historically, the river dried up in August every year and the native-fish population was always marginal. The dam was built for irrigation. He asked whether the reservoir will be depleted to aid a native fish population that was never robust.

Mike said one of the questions the contractors are being asked is what is known about the status of native fish pre- and post-McPhee. He said if any of the species were listed as endangered, it could mean a loss of water rights. He said when the U.S. Fish and Wildlife Service responds to a petition, it will be beneficial to be able to say there is a serious effort under way locally to help native fish. Because McPhee is a federal water project it lends itself to a federal order. The native fish inquiry is an attempt to get ahead of the problem.

Mely said one argument for building the reservoir was that it would restore the trout fishery. That was why the fish pool was created. She said we need to know whether the two fisheries (natives vs. trout) are compatible. Mike said that question is a top priority for the scientists.

Cole offered corrections to Page 6 of the Request for Proposals for the native fish inquiry. Meghan thanked the Leg Comm for their work. It was agreed that there will be more information regarding "A Way Forward" at the next DRD meeting.

Barriers to cottonwood regeneration: Ann said Rob Anderson, who has studied barriers to cottonwood regeneration on the Lower Dolores, will present his findings to the DRD in the future. His "next steps" might be turned into a proposal to the DRD-SC. Rob said anyone interested in seeing his entire document should e-mail him or Marsha.

Downstream Temperature Model proposal: Ann gave a PowerPoint presentation regarding the Downstream Temperature Model proposal (formerly called SLOWs for the "Selective Level Outlet Works" which are a mechanism to regulate water temperature in the Lower Dolores by releasing water from different levels of McPhee Reservoir). This proposal by Chester Anderson, a contract scientist with the DRD, involves developing a model to predict temperature downstream.

She said a status review of roundtail chub, flannelmouth suckers, and bluehead sucker by Bezzerides and Bestgen (2002) found:

- Tailwaters (waters released from the bottom of the reservoir) are often too cold for reproduction of these native species.
- Cooler water can influence growth and survival of young fish.
- Temperature affects swimming performance.
- Cold temperatures can slow growth rates and fertility.

In short, temperature is a significant factor in aquatic habitat, and cold temperatures are harmful to warmwater fish. Because the SLOW at the bottom of the reservoir (SLOW 3) is the one utilized by water managers along with the bypass gate, cold water is being released into the Lower Dolores and is influencing water temperatures for reaches well below the dam. Ann said Chester believes water temperature normalizes around Disappointment Creek, where it becomes more driven by air temperature.

The model is designed to predict water temperature at any given location based on: (1) temperature of discharge, (2) volume of discharge, (3) air temperature at the particular location; and (4) date/angle of the sun. Ann said in order to achieve desired fishery goals, water managers can adjust variables No. 1 and No. 2.

The DRD-SC supports moving forward on developing this model.

Adam Coble: Recruitment and Growth of Cottonwoods

Adam gave a PowerPoint presentation on his work comparing the recruitment and growth of three riparian tree species on unregulated reaches of the Upper Dolores and San Miguel Rivers and regulated (post-dam) reaches of the Lower Dolores River. Adam, a graduate student at Northern Arizona University, said this study was his master's thesis work. He thanked the DRD for supporting his project, "Riparian Tree Response to Variability in Climate and Altered Streamflow along the Dolores River, Colo."

Adam said dams can exert great control over streamflow, particularly in the West and Southwest, where the storage-to-runoff ratio is generally higher than in the East. Impacts of river regulation on riparian forests can include reduced forest area, tree abundance, and seedling habitat; decline in seedling establishment; and reduced tree growth, primarily because of reduced high spring flows.

However, he said on a few rivers, research has found increased seedling survivorship and increased forest density after regulation through dams.

His research questions were:

1. Does river regulation affect riparian tree establishment along the Dolores River?
2. What streamflow conditions and/or climate events facilitate riparian tree establishment?
3. How does tree-growth response to streamflow and climate differ along regulated and unregulated segments?

The three tree species he studied were narrowleaf cottonwood (*Populus augustifolia*), broadleaf cottonwood (*Populus deltoides* subspecies *wislizenii*), and box elder (*Acer negundo*). Study sites were selected along the Lower Dolores River; for comparison there were unregulated sites on the Upper Dolores or San Miguel rivers.

He noted that, before McPhee, there was a large reduction in streamflow in the Lower Dolores during the summer months of July through September. Following the dam, flows were reduced primarily in May and June.

1. Does river regulation affect riparian tree establishment along the Dolores River?

Adam said his research found a lack of establishment events, compared to unregulated rivers, for narrowleaf cottonwood post-dam at Reaches 1 and 3. The establishment of narrowleaf cottonwood was consistently associated with winter mean temperature, suggesting that the lack of recruitment at Reaches 1 and 3 was not caused by the dam. However, there is still frequent establishment occurring below the dam.

For broadleaf cottonwood at Reaches 4 and 6, Adam found the biggest lack of establishment occurred in the pre-dam period on Reach 6. Summer minimum flow was positively correlated with establishment. For box elder, Adam didn't find a major reduction in establishment related to the dam.

2. What streamflow conditions and/or climate events facilitate establishment of riparian trees?

Adam said high spring flows weren't strongly related to cottonwood establishment, but for box elder, high streamflow did facilitate establishment. He found no positive association with spring maximum flow for cottonwoods. Correlation with seasonal streamflow was strongest for box elder. The correlation between higher streamflow related to box-elder establishment is for both spring and summer.

3. How does tree-growth response to streamflow and climate differ along regulated and unregulated reaches?

For narrowleaf cottonwood, growth was most strongly associated with mean spring flow during the pre-dam period at Reaches 1 and 3. Post-dam, growth of narrowleaf was most strongly associated with summer mean flow. Growth of broadleaf cottonwood was rarely correlated with seasonal streamflow. The correlation between growth and streamflow was strongest for box elder. The growth of box elder was correlated with spring and summer mean flow for both pre- and post-dam periods at Reaches 3 and 4, as well as winter mean flow during the post-dam period at Reach 4. Post-dam, tree growth was more responsive to drought for box elder and broadleaf cottonwood.

Adam said in conclusion, he observed frequent establishment events for all species under regulated streamflow. There was no apparent effect on the number of establishment events of broadleaf cottonwood and box elder. Adam said drought was strongly correlated with the growth of all species, and tree growth appeared more sensitive to drought under dam-regulated flows.

His recommendations were:

- Maintain seasonal variation in streamflow.
 - High streamflow during May – June
 - Base flows in summer months at or above average
- For box elder:
 - Maintain above-average streamflow during spring and summer seasons
- Be aware of persisting or severe drought conditions.

Q & A regarding riparian tree establishment: Chris and Cole asked about the effects of beavers on riparian trees. Adam said beavers don't really influence age, just growth.

Final wrap-up

- Marsha said San Miguel County and the public-at-large will be added to the list of stakeholders.
- The DRD-SC will examine the question of goals and issues.
- "A Way Forward" is moving forward, as per the presentation given. Anyone with questions was encouraged to talk to Mike Preston, Peter Mueller, or Marsha.

- DRD-SC notes and Science and Hydrology committee notes will be on the web site.
- Chester will be doing a draft of the 319 Plan in the next couple of months for the DRD-SC. At that time, it will be available on-line and the DRD's comments will be sought. It will be an agenda item at the next full DRD meeting.

DRD Potential Desired Outcomes

Riparian Ecology

<u>Potential Desired Outcomes</u>	<u>Flow Hypothesis</u>
Floodplain scour/deposition	-2,000+ cfs for 10+days
Floodplain saturation (nutrient cycling)	-800+ cfs
Cottonwood seedling establishment	-cfs to scour bars + receding limb to favor seedling establishment

Native Fish

<u>Potential Desired Outcomes</u>	<u>Flow Hypothesis</u>
Spawning	-Moderate spring flows (~ 100 cfs to 1000 cfs) for ~60 days to keep pre-spill water temperature low
Year class recruitment	-Avoid rapid drop at end of peak (stranding); (ramp-down rates <200 cfs/d)
Adult fish survival	-Maintain adequate base flows
Reduce non-native fish populations	-High annual spring flows (~ 100 cfs to 1000 cfs); avoid sustained (esp. multi-year) low flows

Trout Fishery

<u>Potential Desired Outcomes</u>	<u>Flow Hypothesis</u>
Combined biomass >30lbs/ac (3yr avg)	-Spill duration exceeding 70 days
Stocking recruitment (+1 size class evident)	-Maintain adequate baseflow (>78cfs minimum base flow during summer; >30 cfs winter)
Maintain 10 trout/ac over 14" (3 yr avg)	-Spill duration exceeding 70 days

River Mechanisms

<u>Potential Desired Outcomes</u>	<u>Flow Hypothesis</u>
Scour fine sediment ("flushing flows")	->400cfs
Frequently mobilize channelbed surface	-2000 cfs for 10-14 days. Small-spill years: 1000 cfs for 1 week to continue 'downsizing' of alluvial channel
Periodic channelbed scour/coarse sediment flux	->3000 cfs for 1 wk
Infrequent channel resetting flow	-20 yr flood frequency+ (~5000 cfs)