

Appendix A

Tables and Figures

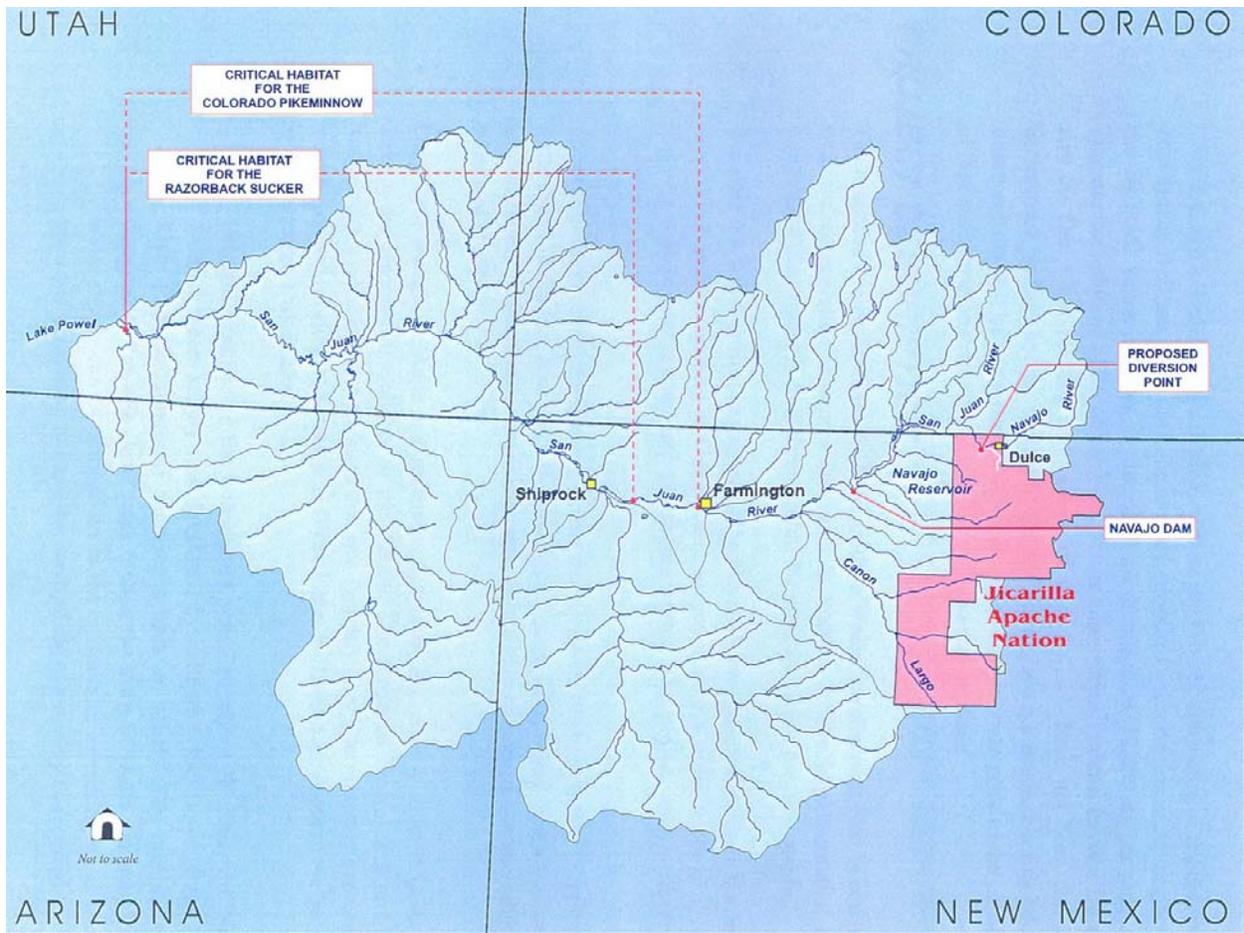


Figure 1 (Image copied from biological assessment) Action area of effects includes from the diversion point at the Navajo River, along the pipeline to and including Dulce Lake (see Figure 2). Effects continue from the diversion point on the Navajo River downstream to the San Juan River (including Navajo Reservoir) to Lake Powell. Flow recommendations are targeted for the 180 miles of the San Juan River between the Animas River confluence and Lake Powell.

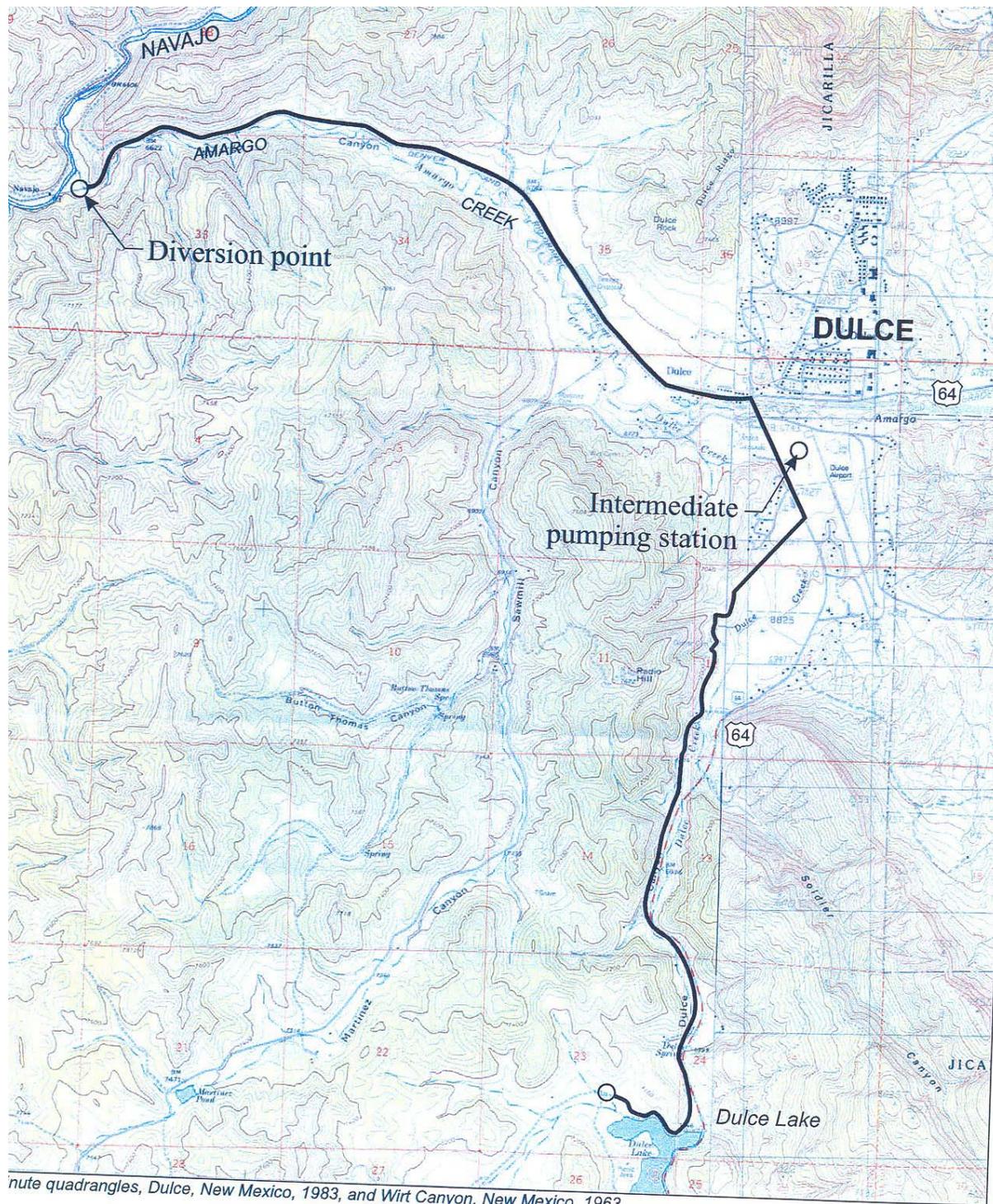


Figure 2. (Image copied from biological assessment) Depiction of a portion of the action area showing the diversion point, pipeline, town of Dulce, NM., and Dulce Lake.

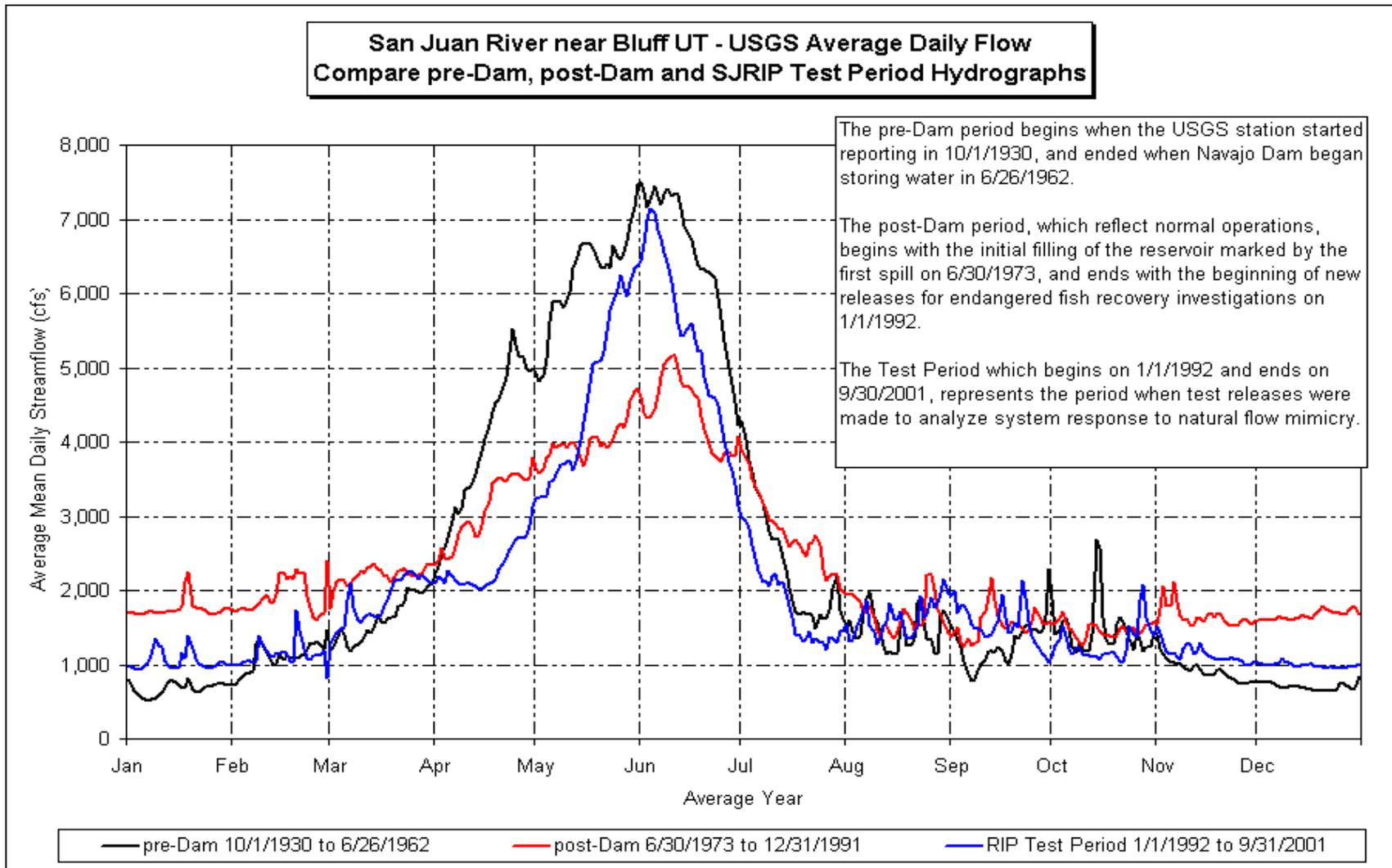


Figure 3. . Graph comparing pre-Navajo Dam, post-Navajo Dam (pre-Flow Recommendations), and proposed action flow of San Juan River past the Bluff gage.

Table 1 Summary of San Juan River Basin depletions (modified from May 2003 draft Navajo Dam re-operations Biological Assessment) 7,8,9

Depletion Category	(acre-feet/year)	Footnotes
New Mexico Depletions		
<u>Navajo Lands irrigation depletion</u>		
Navajo Indian Irrigation Project	280,600	1
Hogback	12,100	2
Fruitland	7,898	2
Cudei	900	
Chaco River offstream depletion	2,832	3
Whiskey Creek offstream depletion	523	3
Subtotal	304,853	
<u>Non-Navajo Lands irrigation depletion</u>		
Above Navajo Dam - private	738	
Above Navajo Dam - Jicarilla	2,190	
Animas River	36,711	
La Plata River	9,739	
Upper San Juan	9,137	
Hammond Area	10,268	
Farmers Mutual Ditch	9,532	
Jewett Valley	3,088	
Westwater	110	
Subtotal	81,513	
Total NM Irrigation Depletion	386,366	
<u>Non-irrigation depletions</u>		
Navajo reservoir evaporation	27,428	
Utah International	39,000	
San Juan power plant	16,200	4
Industrial diversions near Bloomfield	2,500	
Municipal and industrial uses	8,454	
Scattered rural domestic uses	1,400	3
Scattered stockponds and livestock uses	2,200	3
Fish and wildlife	1,400	3
Total NM Non-Irrigation Depletion	98,582	
San Juan-Chama Project exportation	107,514	
Unspecified minor depletions	4,500	5
Animas-La Plata Project	13,600	
Total New Mexico Depletion	610,562	
Colorado Depletions		
<u>Upstream of Navajo Reservoir</u>		
Upper San Juan	10,858	
Navajo-Blanco	7,865	
Piedra	8,098	
Pine River	71,671	
Subtotal	98,492	
<u>Downstream of Navajo Reservoir</u>		
Florida	28,607	
Animas	25,113	
La Plata	13,049	
Mancos	19,532	

Depletion Category	(acre-feet/year)	Footnotes
McElmo Basin imports	-11,769	
Subtotal	74,532	
Animas-LaPlata Project	43,533	
Total Colorado depletions	216,557	
Colorado and New Mexico combined depletion	827,119	
Utah depletion	9,140	3 6
Arizona depletion	10,010	3
Grand Total	846,269	

1 Includes 10,600 acre-feet/year (afy) of annual groundwater storage. At equilibrium depletion drops to 270,000 afy.

2 Accounts for 16,420 afy transferred from Hogback, including the Hogback Extention, and Fruitland Projects to NIIP.

3 Indicates offstream depletion accounted for in calculated natural gains. Scattered rural domestic and stockpond and livestock uses in N.M. include the Jicarilla Apache Nation's 2,187.16 af of decreed reserved water rights for historic and existing uses for net evaporation.

4 Water contract with the Jicarilla Apache Nation (Public Service of New Mexico)

5 3,000 afy of depletion from 1999 Intra-Service consultation, a portion of which may be in Colorado. 770 afy from Jicarilla minor subcontracts.

6 1,705 afy San Juan River depletion, 7435 afy offstream depletion.

7. The State of New Mexico does not necessarily agree with the depletions shown in terms of constituting evidence of actual water use, water rights, or water availability under the Compact. The SJRIP Hydrology Committee uses a hydrology model disclaimer that reads in part "The model data methodologies and assumptions do not under any circumstances constitute evidence of actual water use, water rights, or water availability under Compact apportionments and should not be construed as binding on any party."

8. The New Mexico Interstate Stream Commission (NMISC) and the San Juan Water Commission (SJWC) believe there are inconsistencies in depletion calculations (communications from NMISC and SJWC dated April 8 and March 21, 2002, respectively).

9. It should be noted that full development of State compact water and Indian trust water is not included in this table. Only existing projects and projects with ESA and NEPA compliance are included in the depletion table.

Table 2. Water depletion consultations in the Environmental Baseline.

Consultation #	Date	name	depletion (af)	Duration	Comment	current depletion
CO-95-F-028	5/17/1996	Los Pinos River intake COE (CO)	225.00	none given	Southern Ute Indian Tribe project, part of Animas-La Plata baseline. Jeopardy. No take anticipated. RPA: Reoperation of Navajo Dam to mimic the natural hydrograph of the San Juan River, as agreed to as a result of the ALP consultation.	225
CO-98-F-002	3/4/1998	Mancos Water Conservancy BoR (CO)	200.00	25 (expires 2020)	Jeopardy. No take anticipated. RPA: Reoperation of Navajo Dam to mimic the natural hydrograph of the San Juan River, as agreed to as a result of the ALP consultation.	200
Minor Depletions I	5/21/1999	minor depletions	3,000.00	5 years	batched in 3,000 af blocks. One block is full	3,000
2-22-91-F-241, 2-22-92-F-080, 2-22-99-F-381	7/14/1999	Completion of Navajo Indian Irrigation Project	270,000.00	none given	Not Likely to Adversly Affect based in part on reoperation of Navajo Reservoir	204,000.00
CO-00-F-016	6/19/2000	Animas-La Plata Project	57,100.00	perpetual	non-jeopardy. Inability to meet the Flow Recommendation is trigger for re-initiation. Take considered with implementation of Recovery Program. None anticipated as a result of proposed action.	0.00
2-22-00-I-469	2/15/2001	Public Service Company of NM Water Contract with Jicarillas - BOR	16,200.00	01/01/06 - 12/31/27	Originally a BOR contract with PNM. NLAA based on construction of San Juan Generating Station fish passage, reoperation of Navajo Dam, and Reclamations participation in the SJBRIP	16,200.00

Consultation #	Date	name	depletion (af)	Duration	Comment	current depletion
CO-01-F-052	6/6/2002	Red Mesa Reservoir -COE (CO)	2,199.00	none given	Covered in April 25, 1996 Jeopardy biological opinion (1202 AF/yr historic and 997 AF/yr new) RPA 50,000 \$ to Utah for hatchery pond. [New B.O. issued 6/6/02. Non-jeopardy. Take considered with implementation of Flow Recs. None anticipated as a result of proposed action.]	1,202.00
CO-02-F-017	10/21/2002	Lake Capote Dam Replacement Project - BIA (CO)	108.00	Perpetual	Non-jeopardy. Take considered with implementation of Flow Recs. None anticipated as a result of proposed action.	0.00
GJ-6-CO-03-F-010	11/24/2003	Williams Creek-Squaw Pass – FS (CO)	202.00	Perpetual	Non-jeopardy. Take considered with implementation of Flow Recs. None anticipated as a result of proposed action.	202.00
CO-96-F-003	3/7/1996	Programmatic Opinion - Forest Service, Colorado	34,656.32	none given	An additional 283.87 af new depletion is shown in minor depletion log. / Jeopardy. No take anticipated. RPA: Reoperation of Navajo Dam to mimic the natural hydrograph of the San Juan River, as agreed to as a result of the ALP consultation.	34,656.00
CO-02-F-016	9/3/2002	Bigbee #2 Lateral Project – Alpine Lakes Ranch- FS (CO)	334.00	none given	Non-Jeopardy. No take anticipated.: Reoperation of Navajo Dam to mimic the natural hydrograph of the San Juan River, as agreed to as a result of the ALP consultation.	336.00
Minor Depletions II	ongoing	minor depletions	2,485.00	5 years	batched in 3,000 af blocks. One block is full	2,500.00
CO-03-F-008	3/15/2004	Three Springs Development	514	none given	2 historic depletions of 249 and 265	514
total depletions			387,225.32			263,035.00

Table 3. Surface Water Depletions from Coalbed methane development: Model Summaries

River	Pre-CBM Discharge (AF/yr)	Current Depletion (AF/yr)	Maximum Depletion (AF/yr)	Year when Max Depletions Begin
Animas	66	41	66	2045
Pine	61	31	61	2025
Florida	17.5	2	12.5	2050
Piedra*	60	0	60	**
Total	204.5	74	199.5	

*Piedra River depletions are estimated based on discharges simulated from the 3M Project and the depletions modeled in the Ground Water Protection Research Foundation Project at other rivers.

**Maximum depletions at the Piedra will depend on the pace of coalbed methane development in the northeastern portion of the San Juan Basin.

Table 4. Status of pikeminnow and razorback sucker outside the San Juan River.

<u>Species Status</u>	RIVER		
SPECIES	MIDDLE GREEN (includes the Yampa river from Craig to Echo Park, White River from Taylor Dam to Green River confluence, and the mainstem Green River from Split Mountain to Sand Wash)	LOWER GREEN (Sand Wash to Colorado River confluence)	COLORADO
Colorado pikeminnow	About 3,500, based on data collected in 2000.	Population estimates initiated in 2001; data being analyzed and estimates continuing in 2003.	About 700, based on data collected in 2000.
Razorback sucker	<100 wild adults; population being augmented through stocking; augmentation is being expanded with excess fish stocked into selected floodplain depressions; stocked fish are returning to spawning bar.	Few adults; population being augmented through stocking.	Few adults; population being augmented through stocking

**San Juan
Recovery
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Studies	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
et al. 2000)																	
Young-of-the-Year Survey in the Lower San Juan River (Lashmett 1994, 1995)							x	x									
Small bodied fish monitoring (Probst et al. 2000)												x	x	x	x	x	x
Early Lifestage - Nursery Habitat (Archer et al. 2000)									x	x	x						
Drift Netting (Platania et al. 2000)									x	x	x						
Larval Seigning (Plantania et al.)												x	x	x	x	x	x
Secondary Channel Ichthyofaunal Characterization (Propst and Hobbes 2000)					x	x	x	x	x	x	x						
Nonnative Fish Interactions					x	x	x	x	x	x	x						

