

GREEN RIVER ACTION PLAN: MAINSTEM

	ACTIVITY	WHO	STATUS	FY 04 10/03-9/04	FY 05 10/04-9/05	FY 06 10/05-9/06	FY 07 10/06-9/07	FY 08 10/07-9/08	FY 09 10/08-9/09	OUT- YEARS
I.	PROVIDE AND PROTECT INSTREAM FLOWS (HABITAT MANAGEMENT)									
I.A.	Green River above Duchesne River (Utah only; flows not threatened in Colorado because river is entirely within a National Wildlife Refuge and National Monument.)									
I.A.1.	Initially identify year-round flows needed for recovery while providing experimental flows.									
I.A.1.a.	Summer/fall.	FWS-ES	Complete	USFWS 1992.						
I.A.1.b.	Winter/spring.	FWS-ES	Complete	Muth, et al. 2000.						
I.A.1.c.	Review summer/fall flow recommendation.	FWS-ES	Complete							
I.A.2.	State acceptance of initial flow recommendations.									
I.A.2.a.	Summer/Fall.	UT	Complete	USFWS 1992 and revised in Muth et al. 2000.						
I.A.2.b.	Winter/Spring.									
I.A.2.b.(1)	Review scientific basis.	UT	Complete	Muth et al. 2000.						
I.A.2.b.(2)	Assess legal and physical availability of water.	UT		X						
I.A.3.	Deliver identified flows.									
>* I.A.3.a.	Operate Flaming Gorge pursuant to the 1992 Biological Opinion to provide summer and fall flows.	BR	Begin 93, ongoing	X						
>* I.A.3.b.	Operate Flaming Gorge to supply winter and spring test flows for research.	BR	Complete	Muth et al. 2000.						
I.A.3.c.	Complete NEPA on reoperation of Flaming Gorge pursuant to Biological Opinion.	BR		X						
>* I.A.3.d.	Operate Flaming Gorge Dam to provide winter and spring flows and revised summer/fall flows, pursuant to the new Biological Opinion.	BR	Ongoing	X	X	X	X	X	X	X
I.A.3.d.1.	Conduct real-time larval razorback and Colorado pikeminnow sampling to guide Flaming Gorge operations.	LFL/FWS	Ongoing	X	X	X	X	X	X	X
I.A.4.	Legally protect identified flows.									
I.A.4.a.	Protect Summer/Fall flows.									
I.A.4.a.(1)	Hold public meeting to establish future appropriation policy.	UT	Complete 10/94	Utah Division of Water Rights. 1994 (public meetings October 1994; policy November 1994).						
I.A.4.a.(2)	Adopt and implement new policy (new appropriations subject to flow criteria).	UT	Complete 11/94							
>* I.A.4.a.(3)	Prepare and execute contracts with water users as required to subordinate diversions associated with approved and/or perfected rights.	UT	Ongoing	X	X	X	X	X	X	X
I.A.4.a.(4)	Evaluate effectiveness of policy.	UT	Ongoing	X	X	X	X	X	X	X
I.A.4.b.	Protect Winter/Spring flows.									
I.A.4.b.(1)	Hold public meeting to establish future appropriation policy.	UT		X	X					
I.A.4.b.(2)	Adopt and implement new policy (new appropriations subject to flow criteria).	UT		X	X					
>* I.A.4.b.(3)	Prepare and execute contracts with water users as required to subordinate diversions associated with approved and/or perfected rights.	UT	Ongoing	X	X	X	X	X	X	X
I.B.	Green River below the Duchesne River									
I.B.1.	Initially identify year-round flows needed for recovery while providing experimental flows.	FWS-ES	Complete	Muth et al. 2000.						
I.B.2.	State acceptance of initial flow recommendations (dependent on development of initial flow recommendations).									
I.B.2.a.	Review scientific basis.	UT	Complete	Muth et al. 2000.						
I.B.2.b.	Assess legal and physical availability of water from Green River and tributaries.	UT		X						
I.B.3.	Legally protect identified flows (dependent on development of initial flow recommendations).									
I.B.3.a.	Hold public meeting to establish future appropriation policy.	UT		X	X					
I.B.3.b.	Adopt and implement new policy (new appropriations subject to flow criteria).	UT		X	12/04					
>* I.B.3.c.	Prepare and execute contracts with water users as required to subordinate diversions associated with approved and/or perfected rights.	UT	Ongoing	X	X	X	X	X	X	X
I.C.	Price River									
I.C.1.	Determine endangered fish spring through autumn use of the Price River.	UT	Complete	Cavalli 1999.						
I.C.2.	Determine winter use and seasonal flow needs for Colorado pikeminnow in the Price River.	UT/FWS		X						
I.D.	Evaluate and revise as needed, flow regimes to benefit endangered fish populations.	FWS/Program	Ongoing	X	X	X	X	X	X	X
I.E.	Assess need for tributary management plan for San Rafael River.	PD			X					
I.E.1.	Estimate future water demands on San Rafael River.	TBD	TBD							
I.E.2.	Develop tributary management plan for San Rafael River.	PD	TBD							

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I.E.3.	Conduct appropriate Section 7 and NEPA compliance to implement tributary management plan.	PD/FWS	TBD							
II.	RESTORE HABITAT (HABITAT DEVELOPMENT AND MAINTENANCE)									
II.A.	Restore and manage flooded bottomland habitat.									
II.A.1.	Conduct site restoration.									
II.A.1.a.	Old Charlie Wash.									
>* II.A.1.a.(1)	Construct water control structure and fish kettle.	BR	Complete	Inlet and outlet water control structures repaired and a fish-harvest kettle installed in spring 1995. Inlet structure replaced March 1996. Leaks to outlet structure repaired in 1999.						
II.A.1.a.(2)	Update management plan.	PD	TBD	Need for operational plan TBD pending determination of role of OCW in recovery.						
II.A.1.a.(3)	Monitor and evaluate success.	FWS-FR/BR								
II.A.2.	Acquire interest in high-priority flooded bottomland habitats between Ouray NWR and Jensen to benefit endangered fish.									
II.A.2.a.	Identify and evaluate sites.	FWS-FR	Complete	Six sites acquired (1008.1 acres total). Floodplain acquisition completed and operation, maintenance and evaluation of sites incorporated into Green River Subbasin Floodplain Management Plan (Valdez and Nelson 2004a) (IIA4).						
II.A.2.b.	Pre-acquisition planning and identification of acquisition options.	PD	Complete							
II.A.2.c.	Conduct appraisal/NEPA compliance.	PD	Complete							
>* II.A.2.d.	Negotiate acquisition and acquire.	PD	Complete							
II.A.2.e.	Evaluate effectiveness of land acquisition activities and provide recommendations.	PD	Complete							
II.A.3.	Implement levee removal strategy at high-priority sites.									
II.A.3.a.	Preconstruction (contaminants screening, floodability assessments, environmental compliance, design, and engineering).	PD/BR	Complete	Levees breached at 8 sites (accessing 274 acres). Levee removal completed and operation, maintenance and evaluation of sites incorporated into Green River Subbasin Floodplain Management Plan (Valdez and Nelson 2004a) (IIA4). See also Birchell et al. 2002.						
>* II.A.3.b.	Construction (levee breaching). [NOTE: Subject to review and approval for depression wetlands.]	BR	Complete							
>* II.A.3.c.	Operate and maintain.	BR/FWS	Complete							
II.A.3.d.	Evaluation.	FWS	Complete							
>* II.A.4.	Develop and implement Green River Subbasin Floodplain Management Plan (Valdez and Nelson 2004a).	Program	Ongoing	X	X	X	X	X	X	X
II.B.	Restore native fish passage at instream barriers.									
II.B.1.	Assess and make recommendations for fish passage at low flows at Tusher Wash.	FWS-FR/ - WR/BR	Complete	Cavalli 2000.						
II.B.2.	Screen Tusher Wash diversion to prevent endangered fish entrainment, if warranted.									
II.B.2.a.	Assess need.	UDWR	Complete	Cavalli 2000, Kitcheyan et al. 2001.						
II.B.2.b.	Design.	BR			X					
>* II.B.2.c.	Construct.	BR				X	X			
II.C.	Enhance water temperatures to benefit endangered fishes.									
II.C.1.	Identify options to release warmer water from Flaming Gorge Reservoir to restore native fish habitat in the Green River.	BR	Complete	USBR 2003.						
II.D.	Support actions to reduce or eliminate selenium impacts at Ashley Creek and Stewart Drain. [NOTE: selenium remediation (in all reaches) will be conducted independently of and funded outside of the Recovery Program.]	FWS-ES	Ongoing	X	X	X	X	X	X	X
III.	REDUCE IMPACTS OF NONNATIVE FISHES AND SPORTFISH MANAGEMENT ACTIVITIES (NONNATIVE AND SPORTFISH MANAGEMENT)									
III.A.	Reduce negative impacts to endangered fishes from sportfish management activities.									
III.A.1.	Determine relationship between Flaming Gorge test flows and relative abundance of young Colorado pikeminnow and nonnative fishes in nursery habitat.	UDWR	Complete	Bestgen 1997, Bestgen and Crist 2000.						
>* III.A.2.	Control escapement of nonnative fishes from Ouray National Wildlife Refuge originating from Pelican Lake.	FWS-RW	Complete	Construction completed prior to spring 1997 runoff?						
>* III.A.3.	Identify and control sources of catfish and centrarchids in the middle Green River.	UDWR	Complete	Jackson and Badame 2002.						
III.A.4.	Develop and implement control programs for nonnative fishes in river reaches occupied by the endangered fishes to identify required levels of control. Each control activity will be evaluated for effectiveness, and then continued as needed.									
>* III.A.4.a.	Northern pike in the middle Green River.	UDWR		X	X	X				
III.A.4.b.	Nonnative cyprinids and centrarchids in nursery habitats.									
>* III.A.4.b.(1)	Small nonnative cyprinids from backwaters and other low-velocity habitats in the lower Green River.	UDWR	Late report	X						
>* III.A.4.b.(2)	Smallmouth bass in middle and lower Green River.	UDWR		X	X	X				

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>*	III.A.4.c. Channel catfish (e.g. Deso./Gray Canyons) to protect humpback chub populations, and in the middle Green River to protect razorback sucker and Colorado pikeminnow.	FWS/UDWR	On hold							
	IV. MANAGE GENETIC INTEGRITY AND AUGMENT OR RESTORE POPULATIONS (STOCKING ENDANGERED FISHES)									
	IV.A. Augment or restore populations as needed, and as guided by the Genetics Management Plan.									
	IV.A.1. Develop state stocking plan for the four endangered fishes in the Green River.									
	IV.A.1.a. Prepare plan.	UDWR	Complete	Nesler et al. 2003.						
	IV.A.1.b. Program acceptance.	UDWR	Complete	Nesler et al. 2003.						
>	IV.A.1.c. Implement plan.	UDWR	Ongoing	X	X	X	X	X	X	X
	IV.A.1.c.(1) Conduct high-priority lab/field studies identified in bonytail reintroduction plan.	UDWR	Draft not accepted; dropped.	Crowl and Rivera 2000.						
	IV.A.1.d. Evaluate stocking success as identified in monitoring plan for stocked fish.	LFL/FWS/ STATES	Ongoing	X	X	X	X	X	X	X
	V. MONITOR POPULATIONS AND HABITAT AND CONDUCT RESEARCH TO SUPPORT RECOVERY ACTIONS (RESEARCH, MONITORING, AND DATA MANAGEMENT)									
	V.A. Conduct research to acquire life history information and enhance scientific techniques required to complete recovery actions.									
	V.A.1. Verify additional Colorado pikeminnow spawning areas in lower Green.	UT	Complete	Chart et al. 1999.						
	V.A.2. Identify additional razorback sucker spawning areas in lower Green.	UT	Complete	Chart et al. 1999, Muth et al. 1998.						
	V.B. Conduct population estimate for humpback chub.									
	V.B.1. Desolation/Gray	UDWR		X			X	X	X	X
	V.C. Conduct population estimate for Colorado pikeminnow.									
	V.C.1. Middle Green River (including Yampa and White rivers).	LFL/UDWR/ FWS				X	X	X	X	X
	V.C.3. Lower Green River	LFL/UDWR/ FWS				X	X	X	X	X
	V.D. Conduct population estimate for razorback sucker.							X	X	X