

**Razorback Sucker Augmentation at NAPI Grow-Out Ponds
Fiscal Year 2012-2016 Project Proposal**

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Background

The Long Range Plan for recovery of endangered fishes in the San Juan River calls for propagation and augmentation of razorback sucker (RBS). Avocet East and West and Hidden ponds on Navajo Agricultural Products Industry (NAPI) lands will grow out RBS for stocking into the San Juan River in 2017.

Avocet Pond was originally a single pond built for watering cattle. On March 2, 1998 Avocet was divided into 2 ponds known as Avocet East and West. Avocet West is 3.4 acres and holds 18 acre-feet of water. Avocet West has a siphon for draining the pond. Avocet East is 3.52 acres and holds 19.6 acre-feet of water. Avocet East had no siphon when the ponds were divided, so draining was accomplished by renting a battery of water pumps. A siphon was installed in Avocet East during FY 2008 and the water can now be managed independent of Avocet West and without the need for pumping.

In October of 1999, Hidden Pond was built to rear razorback sucker. Hidden Pond is 2.83 acres. The dam was breached due to a storm event and the fish were lost. The dam was re-built in FY 2000 and a toe drain and spillway were built to protect the dam. Hidden Pond was lined with bentonite and contoured and a kettle was installed to facilitate fish harvest. A siphon was installed in July 2003. A salamander fence was installed around the Hidden Pond perimeter in August of 2003 to exclude predatory tiger salamanders.

Responsibility for Management of the NAPI ponds was originally shared between the U.S. Fish and Wildlife Service (Service), Bureau of Indian Affairs (BIA), Keller-Bliesner Construction and Ecosystems Research Institute. The Service was responsible for determining which ponds would receive RBS and when. In addition, the Service conducted sample counts and harvested the ponds with the assistance of the BIA. Keller-Bliesner was responsible for design and construction of the Six Pack ponds and reconstruction of Hidden Pond. The BIA was responsible for monitoring water quality and Ecosystems Research was responsible for fertilization of the ponds and for developing a pond management plan.

Original pond management was for multiple cohorts to be raised in the ponds. Harvesting would be done passively with fyke nets so that the ponds would not be drained on an annual basis. In FY 2007, it was determined to change pond management direction. All of the ponds would be drained and harvested and single cohort management would replace the multiple cohort approach. During the first harvesting and draining of a Six-pack Pond, high mortality resulted when the number of fish remaining in the pond could not be removed before they succumbed to the rapidly warming water. Adjustments were made to reduce the mortality in future harvesting and draining events. The adjustments consisted of increasing the trapping effort prior to de-watering to reduce the number of fish remaining in the pond. In addition, the final fish removal would be accomplished with a higher pool of water to slow the warming of the water during the time of final harvest. This resulted in less mortality.

The Navajo Nation Department of Fish and Wildlife (NNDFW) was contracted to assume responsibility for daily management of the NAPI ponds in 2007. The Service assists the NNDFW with pond harvest as needed.

The ponds have been fenced and electric lines have been installed at each of the ponds. Aerators have been installed at each of the ponds to improve water quality. Water quality issues have caused fish mortalities in some of the ponds in the past. Water quality issues appear to have been resolved since installation of the aerators.

Objectives

(NAPI Ponds Management)

Manage razorback sucker grow-out in East Avocet, West Avocet, and Hidden ponds to provide an additional source of RBS to supplement the augmentation program. Harvest, Passive Implant Transponder (PIT) tag, and stock razorback sucker from the three grow-out ponds into the San Juan River, in order to assist in fulfilling the tasks and objectives outlined in the current version of *An Augmentation Plan for Razorback Sucker in the San Juan River* (Ryden 2003).

- 1) Manage three grow-out ponds using a single cohort strategy; including passive and active harvest techniques.
- 2) Annually stock 3,500 (\geq 200mm) razorback sucker per pond.
- 3) Harvest all ponds on an annual basis.
 - a. Implant all razorback sucker with a PIT tag prior to stocking.
 - b. Stock all fish regardless of size at harvest.
 - c. Stock ~ 4,200 to 6,300 fish based on 40-60% return.
 - 3c. Investigate and utilize multiple stocking localities.
- 4) Experimentally acclimatize, as guided by SRRIP – Biology Committee, razorback sucker from both NAPI ponds and Uvalde National Fish Hatchery.

Location

The RBS grow-out ponds are located in Block III of Region 2 on NAPI lands, south of Farmington, New Mexico. Avocet East and West are located NW of the intersection of N 4062 and N 4087, which is approximately 3 miles southwest of the Ojo Amarillo NHA Housing Subdivision. Hidden Pond is located SE of the intersection of N 4087 and N 4095 approximately 1 mile northwest of the NAPI Region II Complex.

Methods/Approach

The NNDFW will be responsible for overall management of the NAPI ponds regarding daily management duties, harvesting, and stocking. The Service, Region 2, will be responsible for coordinating the stocking of the ponds with Dexter NFH and NNDFW per US Fish and Wildlife Service Region 2 stocking policy. The NNDFW will be responsible for daily management of the three grow out ponds on NAPI with assistance by the Service, Region 2. Harvesting, tagging, and stocking will be conducted by NNDFW, with assistance from the Service if additional personnel are needed. Associated data management and reporting for the project will be handled by staff from the NNDFW.

Pond management requires that staff monitor and record water quality and quantity, and feed the fish on a daily basis. In addition, staff manages water quantity to ensure that water quality is optimal. Maintenance includes operating and repairing valves and aerators, evaluating the pond perimeters for erosion problems, operating the propane cannons to scare away predators, repairing fences, monitoring aquatic vegetation and maintaining a log book and database for management of the ponds.

East Avocet, West Avocet, and Hidden ponds will be managed for a single cohort of RBS. NNDFW will implement passive harvest using fyke nets to trap, tag, and stock RBS into the SJR for several days or months prior to dewatering the ponds. As the ponds are dewatered, NNDFW and Service staff will work together to do the final RBS removal, tagging, and stocking into the SJR.

Whenever the ponds are drained, they will be evaluated for structural stability. Areas away from ponds that may be impacted by dewatering will also be evaluated. Staff will identify and document any structural damage to the ponds and dewatering areas if necessary. Feasibility will determine whether improvements are made or not. This proposal does not include any maintenance or repair work that is major and requires mobilization of heavy equipment and is outside of the constraints of this budget.

Products/Schedule

In the spring of 2017, Dexter National Fish Hatchery will deliver 10,500 \geq 200 mm RBS to two of three NAPI grow-out ponds. In the fall of 2017, the NAPI ponds will be de-watered and the RBS, which are targeted to be \geq 300 mm will be harvested and transported to the San Juan River for stocking. A database summarizing numbers of fish, stocking locations and PIT tag numbers will be submitted to the SJRIP Program Coordinators Office by 31 March 2018. A draft report will be submitted by 31 March 2018 and finalized by 1 June 2018.

Budget Fiscal Year 2017

BUDGET WORKSHEET – Program Base Funding		
Razorback Sucker Augmentation at NAPI Grow-Out Ponds		
Personnel (salary/benefits)	USFWS NMFWCO	NNDFW
Daily Pond Management .30 FTE (GS-9-8) USFWS R2 and active/passive harvesting assistance 1 FTE NNDFW X \$44,055	\$ 9,739	\$ 44,055
Temporary Wildlife Technician NNDFW X \$6,391		\$ 6,391
Fringe Benefits FTE \$44,055 X 45.6%		\$20,089
Fringe Benefits temp. @ 8.4%		\$537
Personnel Subtotal	\$ 28,071	\$71,072
Travel		
Per Diem Lodging and Meals	\$ 4,900	\$ 1,000
Vehicle Mileage and Maintenance	\$ 1,160	\$ 18,000
Travel Subtotal	\$ 6,060	\$ 19,000
Office Supplies and Equipment		\$ 500
General Operating Supplies (includes fish transport costs, i.e. oxygen, salt, stress coat, etc.)		\$ 2,500
Feed		\$ 5,000
Uniforms		\$ 500
Printing/Binding/Photocopying		\$ 100
Fuel – Propane/Cannon Guns		\$ 200
Repairs and Maintenance – Paint, sealant, lubricants, plumbing supplies, water quality probes, etc.		\$ 500
Support Subtotal	\$ -0-	\$ 9,300
Total	\$ 30,649	\$99,372
Administrative charge (17.5%) \$99,372/1.175 X .175 = \$14,800	\$ 474	\$14,800
USFWS/NNDFW Totals	\$ 16,273	\$114,172
Grand Total		\$130,445

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Under the heading “Funding for participation of other agencies.” Costs for participation of the U.S. Fish and Wildlife Service, New Mexico Fish and Wildlife Conservation Office, Albuquerque, NM in FY-2017.

Daily pond management activities

Biological Science Technicians
2 people x 20 days @ \$192.80/day \$ 7,712.00

Active Harvest

Fish Biologist (GS-11-5) - 5 days @ \$405.45/day \$ 2,027.25

Personnel subtotal	\$ 9,739.25
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Travel and Per Diem (Based on Published FY-2016 Federal Per Diem Rates)

Hotel Costs – 35 nights \$ 3,115.00

Daily pond management: 2 rooms x 4 nights/trip x 4 trips @ \$89/night –
single occupancy

Active Harvest: 1 room X 3 nights @ \$80/night – single occupancy

Per Diem (Hotel Rate) – 35 days @ \$51/day \$ 1,785.00

Travel subtotal	\$ 4,900.00
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Equipment

Vehicle Maintenance & Gasoline 2,000 miles (400 miles/trip x 5 trips @ \$0.58/mile \$ 1,160.00

Equipment subtotal	\$ 1,160.00
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USFWS – NMFWCO Total \$ 15,799.25

USFWS Region 2 Regional Office Administrative Overhead (3%) \$ 474.00

USFWS – Region 2 Total	\$ 16,273.25
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