GILA RIVER BASIN NATIVE FISHES CONSERVATION PROGRAM

STRATEGIC PLAN 2023-2027

November 2022

U.S. Fish and Wildlife Service
U.S. Bureau of Reclamation
New Mexico Department of Game and Fish
Arizona Game and Fish Department

INTRODUCTION

This is the fifth 5-year strategic plan to assist the near-term implementation of the Gila River Basin Native Fishes Conservation Program (Program; previously known as the Central Arizona Project [CAP] Fund Transfer Program). The Program is funded by the U.S. Bureau of Reclamation (Reclamation), and is directed by the U.S. Fish and Wildlife Service (Service) and Reclamation, in cooperation with the New Mexico Department of Game and Fish (NMDGF) and Arizona Game and Fish Department (AZGFD). The Program mission is to undertake and support conservation actions (recovery and conservation) for federally listed, candidate and other at-risk fish species native to the Gila River basin by implementing existing and future recovery plans for those fishes. This strategic plan identifies the long-term vision for the Program as well as broad goals and actions that are expected to be accomplished by the Program over the next 5 years.

DESCRIPTION OF THE PROGRAM

The Program was developed to partially mitigate impacts of the CAP canal on threatened and endangered native aquatic species of the Gila River basin. In a 1994 biological opinion, the Service determined the CAP is a conduit for transfers of non-indigenous fishes and other aquatic organisms from the lower Colorado River (where the CAP originates) to waters of the Gila River basin. The Service identified the spread and establishment of nonnative aquatic organisms as a serious long-term threat to the conservation and recovery of native aquatic species, following a long history of habitat loss and degradation. Impacts of nonnatives include predation, competition, hybridization, and parasite and pathogen transmission. In most cases, it is extremely difficult or impossible to remove invaders once they have established.

For these reasons, the 1994 Service opinion concluded that operation of the CAP would jeopardize the continued existence of four native threatened or endangered fish species: Gila topminnow (*Poeciliopsis occidentalis*), spikedace (*Meda fulgida*), loach minnow (*Tiaroga cobitis*), and razorback sucker (*Xyrauchen texanus*). The Service also concluded that the CAP would adversely modify designated critical habitat of spikedace, loach minnow, and razorback sucker. A suite of reasonable and prudent alternatives were designed to monitor the introduction and spread of nonnative aquatic species, construct and operate barriers to prevent the upstream spread of nonnative species, implement fund transfers to the Service to recover natives and control nonnatives, and inform and educate the public about the value of native fishes and the negative impacts posed by nonnatives. In the 2001 revision of the 1994 opinion, the reasonable and prudent alternatives became conservation measures, and in the 2008 revision, the Santa Cruz

River subbasin was added to its geographic scope and the newly listed endangered Gila chub (*Gila intermedia*) and Chiricahua leopard frog (*Lithobates chiricahuensis*) were added to the Program as species affected by operation of the CAP. Additional aquatic and riparian species have been listed since completion of the latest 2008 biological opinion, and Reclamation is currently in the process of reinitiating Section 7 consultation with the Service for ongoing operation of the CAP.

The initial biological opinion for the program required Reclamation to make available $250,000 annually for conservation of native fishes and $250,000 annually for control and management against nonindigenous aquatic species. This dollar amount was increased to $275,000 per measure following the 2008 biological opinion. This was done through a funds transfer agreement between Reclamation and the Service in which funding was transferred annually to the Service to administer projects through a variety of sub-agreements. In 2014, a decision was made to no longer transfer funds to the Service, but instead have Reclamation administer projects directly. The transition process was completed in 2016 with some funding still administered by the Service.

This five-year strategic plan is intended primarily to guide the implementation of these funds to undertake and support conservation actions (recovery and conservation) for the five priority fishes, and other native fishes in the Gila River basin (including federal and state-listed species, candidates, and other non-listed species) by implementing existing and future recovery plans for those fishes. Expenditure of these funds is jointly agreed upon by Reclamation and the Service in consultation with AZGFD and NMDGF.

Program funding started in June 1997 and is 25 years into its 30-yr commitment. It is estimated that Reclamation will spend 16 million dollars on native fish conservation and control of nonindigenous species over the life of the program. As of 2021 Reclamation has obligated 14.6 million dollars on recovery and conservation efforts. The past accomplishments of the Program can be found on Reclamation's website (www.usbr.gov/lc/phoenix/biology/azfish/index.html).

PROGRAM LONG-TERM VISION

The principal goals of Gila River Basin Native Fishes Conservation Program are to: 1) achieve enhanced conservation status of federally-listed and candidate fish species in the Gila River basin, and 2) alleviate and diminish threats from nonnative aquatic species that might enter the Gila River basin via the CAP canal or other pathways. While the focus of the Program is to prevent extinction and lead towards recovery of federally-listed species, it is recognized that long-term viability of protected species is accomplished in conjunction with actions beyond the capability of the Program.

PROGRAM PRIORITIES AND FUNDING CRITERIA

Funding to conserve Gila River basin native fishes is limited and the recovery of listed fishes is critical. Monies from the Program thus are prioritized such that meaningful, achievable, and lasting on-the-ground activities benefit native fishes according to recovery plan goals (Appendix A) and other management guidance documents (e.g. conservation agreements, habitat

conservation plans, State Wildlife Action Plans, integrated watershed management plans, forest management plans, BLM resource and habitat management plans, etc). Program conservation actions are identified in the above plans, by the Program agencies, and outside partners. Project proponents will ensure Service and state species leads review proposed projects to ensure they are consistent with recovery plans or strategies. At the time of this strategic plan, the Service is considering issuing a proposed rule to removing Gila Chub from the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h) (87 FR 19657). Gila Chub will continue to be a priority species for the Program as long as it is listed under the Endangered Species Act.

Highest priority projects for the Program are those that are necessary to:

- stabilize existing populations in the wild
- replicate rare populations in the wild

Actions needed to stabilize populations in the wild include:

- construct fish passage barriers to protect existing populations
- suppress and/or remove nonnative aquatic species above barriers
- maintain existing self-sustaining populations and their habitat
- implement other actions to remove immediate threats

Actions needed to replicate rare populations in the wild include:

- safeguard streams for replication of rare populations
- where necessary, construct fish passage barriers and remove nonnatives
- undertake captive production, including development of propagation techniques
- implement other actions to ensure that rare populations are replicated and protected

Additional priority is given to projects that:

- benefit the 5 priority species identified in the biological opinions;
- benefit multiple species, including all native fishes of the Gila River basin;
- provide immediate on-the-ground benefit; and/or
- address other activities pertaining to research or management that aid in conserving native fish populations and habitat.

It is recognized that planning and environmental compliance activities must proceed in advance of on-the-ground actions. However, mandates under Section 7 of the Endangered Species Act for Federal agencies to assist in conserving threatened and endangered species, and separate monies available to State agencies for this same purpose, may help provide for these needs when possible. These potential funding needs will be evaluated on a case-by-case basis as appropriate.

In addition to how each project addresses Program priorities and meets the strategic plan's 5-year goals, each project must:

- contribute to conservation and recovery of Gila River basin native fishes
- be technically sound and able to be implemented
- be able to accomplish its objectives in a reasonable timeframe
- not be redundant either in scope or funding source

Original project ideas are based on recovery plans and are generated through discussions with ad hoc groups of biologists, agency, academic, and non-governmental organizations, private fish biologists working in the Gila River basin, agency species leads, and other entities as appropriate.

Proposed projects are to be evaluated using a standardized evaluation form (Appendix B) as guidance. The evaluation form is part of the process (but not the only element) that the Technical Committee uses to help evaluate project merits and recommendations to approve or reject.

PROGRAM 5-YEAR GOALS

The goals and objectives identified in Table 1 below are built on the foundation of two basic recovery needs:

1. Build the scientific foundation for recovery efforts.

Although the Program concentrates on implementing on-the-ground conservation and recovery actions, certain basic research and planning is needed to build the foundation for future conservation and recovery actions.

2. Prevent extinction and manage toward recovery.

The fundamental goals are to protect remaining populations of priority fish species and expand the distribution of these fishes. Practices to achieve these goals include:

- replicating populations in new locations to reduce the risk of losing unique populations and expand the distribution of the species
- installation of barriers to prevent invasion of nonnative fishes in areas with extant populations of priority fish species as well as their potential habitat
- eradication or suppression of nonnative fishes
- restricting land use practices that alter habitat or water availability
- habitat improvements
- securing water rights

The likelihood of extirpation of individual populations can be decreased by establishing captive and wild populations of all existing unique genetic stocks of all priority species. Captive populations may be maintained in a hatchery or other facility.

Table 1. Gila River Basin Native Fishes Conservation Program goals and objectives for Calendar Years 2023-2027.

Scientific Foundation		
No	**Goal**	**Objective**
1	Investigate novel methods to control nonnative aquatic biota.	a) Seek at least one opportunity to partner or fund new control methods or improvements upon existing methods.
2	Update and assemble existing knowledge of life history needs and ecology of Gila River basin native fishes.	a) As opportunities arise, initiate ecological/life history studies of native biota where such understanding can assist with conservation goals of the Program.
3	Improve propagation techniques for spikedace and loach minnow.	a) At a minimum, identify and implement at least one research project aimed at improving propagation.
4	Complete genetic management plans for priority species.	a) Develop genetic management plans for spikedace, loach minnow, and Gila topminnow.
5	Investigate new stocking strategies to improve survival of repatriated fish.	a) At a minimum, document existing stocking strategies, identify locations with poor survival, and identify likely causes of poor survival.

Preventing Extinction and Managing Toward Recovery		
No	**Goal**	**Objective**
1	Maintain the Aquatic Research and Conservation Center (ARCC) and explore alternative locations for establishment of hatchery stocks of upper Gila and San Francisco River lineages of spikedace and loach minnow.	a) Use genetic management plans for development of brood stock management plan.
		b) Augment hatchery populations as outlined in broodstock management plans.
		c) Ensure the Aquatic Research and Conservation Center (ARCC) has the staff support and supplies necessary to maintain propagation of spikedace and loach minnow at a level needed to meet stocking demands provided wild fish are available.
		d) Determine start up and O&M costs for New Mexico hatchery stocks of spikedace and loach minnow.
2	Protect native fish populations from nonnative fish invasions.	a) Complete the scoping, environmental compliance, and design of two additional fish barriers, and initiate their construction.

3	Remove nonnative aquatic species threats.	a) Eradicate or suppress nonnative aquatic species from a minimum of five surface waters to prepare them for repatriations of native fishes.
4	Replicate populations and their associated native fish community into protected streams and other surface waters.	a) Replicate Gila topminnow stocks into a minimum of 10 surface waters.
		b) Replicate each of the other priority species into a minimum of one surface water.
5	Protect, maintain, and restore degraded aquatic habitats to use for native fish.	a) Restore habitats in a minimum of one location with existing populations or in a location planned for repatriations.
		b) Acquire or work with other programs to acquire easements, land, or water rights to protect key surface water.
6	Inform and educate the public about the conservation status and values of native fishes and the problems nonnative fishes create for them.	a) Implement a minimum of one I&E opportunity per year.
		b) Update Program website at least twice per calendar year.
7	Monitor to quantitatively measure and evaluate project success in improving the status of target species and their habitats.	a) Implement and report on Long-Term Monitoring Plan for Native Fish Populations in the Gila River Basin.
		b) Develop/identify monitoring standards as necessary to adequately evaluate fish barrier function, success and failure of nonnative fish species eradications/suppression, and success and failure of repatriations of 5 priority species.
		c) Incorporate eDNA monitoring techniques and/or other emerging technologies into monitoring practices.
8	Maintain accurate Program tracking records.	a) Continue to develop annual workplans and reports to track program accomplishments.

PROJECT SELECTION PROCESS

Primary administration of the Program is by Reclamation and the Service. Program guidance is in cooperation with AZGFD and NMDGF. Two committees are established with representation from the four agencies to address technical and policy matters of the Program. Representatives from Forest Service and Bureau of Land Management currently serve as affiliate members on the Technical Committee.

Technical Committee:

- Comprised of one biologist/specialist from each of the following agencies:
    - Arizona Game and Fish Department
    - New Mexico Department of Game and Fish
    - U.S. Fish and Wildlife Service
    - Bureau of Reclamation
    - Bureau of Land Management
    - U.S. Forest Service – Regional office
- Determines and evaluates scientific and technical merit of projects proposed for inclusion in an annual workplan with regard to contribution to species recovery and non-native removal.
- Members attend the December Technical Committee meeting for workplan review and current year adjustments.
- Members attend optional March Technical Committee meeting for out-year planning and project evaluation.

Policy Committee:

- Comprised of one representative from each of the following agencies:
    - Arizona Game and Fish Department
    - New Mexico Department of Game and Fish
    - U.S. Fish and Wildlife Service
    - Bureau of Reclamation
- Gives guidance to the Technical Committee to ensure that the Program is successfully implementing recovery criteria and meeting goals outlined in the 5-year strategic plan.
- Deals with policies, procedures, and organizational issues that may arise during implementation of the Program.
- Meets annually to review project proposals submitted by the Technical Committee in the form of an annual work plan and recommends funding proposed projects.

Because this is a federally-funded program resulting from Endangered Species Act Section 7 consultation, the Service and Reclamation will make the final decisions on project implementation.

The following are steps and approximate timeframes involved in formulating, selecting, awarding, and reporting on Program projects:

- November
    - Send out changes to the current fiscal workplan for review ahead of the December Technical Committee meeting
- December
    - *Annual Reporting Meeting:* Each year in early December the Technical Committee and parties funded through the Program present results of previous years' work during the annual reporting meeting.
    - *Technical Committee Meeting:* Following the annual reporting meeting, the Technical Committee members meet to update the list of proposed work for the current fiscal year work plan, introduce and discuss proposed work for the next fiscal year, and discuss any other important matters related to the Program.

- December – January:
    - The Technical Committee or project proponents prepare project work plan summaries/proposals and budgets using the templates provided in Appendices C and D.
- February 1st
    - Draft annual reports due to Reclamation and the Service for review - using templates provided in Appendix E. Reclamation and the Service will have 30 days to review.
- February
    - Reclamation compiles project summaries/proposals into a work plan (for upcoming fiscal year) for Technical Committee review.
- March (Technical Committee call)
    - Technical Committee discusses technical merits of proposals and makes adjustments to the next fiscal year's work plan if needed.
- March/April
    - Reclamation sends out updated work plan for Technical Committee to review and score projects.
- April 1st
    - Final annual reports due to Reclamation and the Service.
- May/June (Joint Committee meeting)
    - The Technical and Policy committees meet jointly to review, discuss, and provide feedback on the selections of potential projects to be funded in the following federal fiscal year. Project recommendations for funding are discussed and considered for submission to Reclamation and the Service for approval. Prior year project accomplishments, failures, and status are also reported to the Policy Committee. Time is set aside at this meeting to discuss Program function, processes, status of goals and objectives identified in the strategic plan, annual goals and objectives, and potential improvements.
- May-August
    - Following the joint committee meeting(s) Reclamation and the Service will finalize the annual workplan.
- October-September
    - Reclamation and the Service procure inter- and intra-agency agreements, cooperative agreements, grants, purchase order contracts, regular contracts, transfers of money to other Service stations, and any other appropriate mechanism to implement tasks.

APPENDICES
A. Summary of Recovery Plan Tasks for the 5 Priority Species
B. Project Evaluation Scoring Form
C. Work Plan Template
D. Example Budget Request for Proposed Projects
E. Annual Report Template

Appendix A. Summary of Recovery Plan Tasks for the 5 Priority Species

Spikedace and Loach Minnow:
1) Protect existing populations
    Task 1.1 (priority 1) Identify all populations and determine level of protection
    Task 1.2 (priority 2) Prioritize populations based on need for protection
    Task 1.3 (priority 1) Designate critical habitat
    Task 1.4 (priority 1) Enforce laws and regulations
    Task 1.5 (priority 1) Discourage detrimental land and water uses
    Task 1.6 (priority 1) Ensure natural flows
    Task 1.7 (priority 1) Curtail introductions of nonnative fishes
    Task 1.8 (priority 1) Identify need for and construct barriers
    Task 1.9 (priority 2) Identify available unprotected private lands and water rights
    Task 1.10 (priority 2) Acquire available lands and associated water rights
    Task 1.11 (priority 2) Protect acquired lands
2) Monitor status of existing populations
    Task 2.1-2 (priority 1) Establish standard monitoring locations and techniques
    Task 2.3 (priority 2) Establish and maintain computerized database
    Task 2.4 (priority 1) Determine natural variation in abundance and age-class structure
    Task 2.5 (priority 1) Monitor community composition including range of natural variation
    Task 2.6 (priority 1) Determine genetic characteristics of existing populations
3) Identify nature and significance of interaction with nonnative fishes -- Task 3.1-2 (priority 2)
4) Quantify, through research, habitat needs and the effects of physical habitat modification on life cycle completion – Task 4.1-6 (priority 2)
5) Enhance or restore habitats occupied by depleted populations
    Task 5.1-2 (priority 2) Identify management areas and determine necessary habitat improvement
    Task 5.3 (priority 3) Implement habitat improvement
6) Reestablish populations to selected streams within historic range[1]
    Task 6.1 (priority 3) Identify stocks to be used for reintroduction
    Task 6.2 (priority 3) Identify and prepare sites for reintroduction
    Task 6.3-4 (priority 3) Reintroduce into selected reaches and monitor
    Task 6.5-6 (priority 3) Determine reasons for success/failure and rectify as necessary

[1]The 2019 recovery plan addendums for spikedace and loach minnow established recovery units and downlisting and delisting criteria for each species. These criteria supersede Step 6 of the recovery plans and can be generalized as the following tasks: 1) maintain remnant populations, 2) establish refugia populations for each distinct genetic lineage, and 3) replicate additional population into new unoccupied areas of each respective Recovery Unit.

7) Determine quantitative criteria for describing a self-sustaining population – Task 7.1-3 (priority 2)
8) Plan and conduct investigations on captive holding, propagation and rearing
    Task 8.1 (priority 3) Select stocks to be used for hatchery brood stock
    Task 8.2 (priority 3) Collect hatchery stocks
    Task 8.3 (priority 3) Hold and maintain stocks in a hatchery
    Task 8.4-5 (priority 3) Evaluate and assess propagation techniques and life-cycle requirements
    Task 8.6 (priority 3) Supply hatchery-reared fish as needed
9) Information and education
    Task 9.1 (priority 2) Provide information and education relative to the species to the public sector
    Task 9.2 (priority 2) Ensure all professional information is made available

Gila Topminnow (POOC):
1) Prevent extinction by protecting remaining natural and long-lived reestablished populations
    Task 1.1 (priority 1) Maintain refugia populations of natural populations
    Task 1.2 (priority 1) Designate critical habitat
    Task 1.3 (priority 1) Identify extent of geographical distribution of POOC
    Task 1.4 (priority 1) Protect occupied habitats from detrimental land and water use practices
    Task 1.5 (priority 1) Protect from invasion by detrimental nonnative aquatic species
    Task 1.6 (priority 1) Prohibit the introduction or release of nonnative aquatic species to POOC-occupied areas
    Task 1.7 (priority 1) Design and implement site specific management plans for natural and long-lived reestablished populations
    Task 1.8 (priority 1) Determine minimum viable population
2) Reestablish and protect populations throughout historical range
    Task 2.1 (priority 1) Identify suitable habitats
    Task 2.2 (priority 1) Reestablish into suitable habitats
    Task 2.3 (priority 1) Protect suitable reestablishment habitats from detrimental land and water use practices
    Task 2.4 (priority 1) Protect suitable reestablishment habitats from detrimental nonnative aquatic species
    Task 2.5 (priority 1) Prohibit the introduction and release of nonnative aquatic species to POOC-occupied or suitable reestablishment habitat
    Task 2.6 (priority 1) Design and implement site specific management plans for reestablished populations
3) Monitor natural and reestablished populations and their habitats
    Task 3.1 (priority 1) Develop standardized population and habitat monitoring protocols and implement them
    Task 3.2 (priority 1) Maintain a population and habitat database and generate annual reports
    Task 3.3 (priority 1) Implement criteria for declaring reestablished populations as extirpated
4) Develop and implement genetic protocol for managing populations

Task 4.1 (priority 2) Facilitate genetic exchange among reestablished populations as needed
Task 4.2 (priority 2) Conduct additional genetic studies of POOC populations
5) Study life-history, genetics, ecology, and habitat of POOC and interactions with nonnative aquatic species -- Task 5.0 (priority 2)
6) Inform and educate the public and resource managers -- Task 6.0 (priority 3)

Razorback Sucker (XYTE):
1) Prevent extinction of major extant XYTE populations and permanent loss of genetic diversity of existing populations
Task 1.1 (priority 1) Protect fish in refugia and maintain genetic diversity
Task 1.2 (priority 1) Restore physical habitats and provide fish access
Task 1.3 (priority 1) Reduce adverse biological impacts
Task 1.4 (priority 1) Augment wild populations
Task 1.5 (priority 1) Monitor populations and habitat status
2) Establish and protect additional wild populations
Task 2.1 (priority 2) Develop criteria for selecting additional recovery areas
Task 2.2 (priority 2) Assess restoration and access needs
Task 2.3 (priority 2) Select additional recovery areas in critical habitat reaches
Task 2.4 (priority 2) Determine habitat restoration needs
Task 2.5 (priority 2) Restore needed habitats and provide fish access
Task 2.6 (priority 2) Augment or reintroduce XYTE in recovery areas
3) Protect and maintain XYTE populations and their habitats
Task 3.1 (priority 3) Determine threats to XYTE populations
Task 3.2 (priority 3) Monitor and assess the impact of development projects
Task 3.3 (priority 3) Refine and enforce existing laws and regulations protecting XYTE
Task 3.4 (priority 3) Develop and implement cooperative interagency programs to protect and recover XYTE
4) Develop quantitative recovery goals and a long-term habitat protection strategy
Task 4.1 (priority 4) Develop quantitative recovery goals for each recovery area
Task 4.2 (priority 4) Develop quantitative recovery goals for the species
5) Promote and encourage improved communication and information dissemination
Task 5.1 (priority 5) Develop and conduct workshops to coordinate recovery efforts
Task 5.2 (priority 5) Conduct nationwide information and education programs
Task 5.3 (priority 5) Conduct local information and education programs
Task 5.4 (priority 5) Promote information and education programs within management agencies
Task 5.5 (priority 5) Encourage and support publication of research and other recovery results in technical literature

Gila Chub (GIIN):
1) Protect and manage remnant populations and their habitats
Task 1.1 (priority 1) Identify primary and secondary threats to remnant populations
Task 1.2 (priority 1) Prioritize remnant populations for recovery actions
Task 1.3 (priority 1) Ameliorate threats to each remnant population
Subtask 1.3.1 (priority 1) Eliminate or control problematic nonnative aquatic

Subtask 1.3.2 (priority 1) Protect habitats against invasion by nonnative aquatic organisms
Subtask 1.3.3 (priority 1) Develop and implement contingency plans to protect populations from environmental disasters
Subtask 1.3.4 (priority 2) Enhance carrying capacity of streams with small populations through habitat improvements
Subtask 1.3.5 (priority 2) Restore or protect hydrology

2) Replicate remnant populations as appropriate into new protected streams within their respective RUs according to MU criteria
Task 2.1 (priority 3) Prepare and protect streams appropriate for replications
Task 2.2 (priority 1) Repatriate GIIN to new protected streams

3) Monitor remnant and replicated populations to ensure they are persisting, and threats are being managed
Task 3.1 (priority 2) Prepare a monitoring plan to guide monitoring efforts
Task 3.2 (priority 2) Conduct monitoring
Task 3.3 (priority 3) Prepare and disseminate reports of monitoring
Task 3.4 (priority 3) Store monitoring data within a standardized database

4) Establish and maintain refuge populations in protected ponds or hatcheries as appropriate
Task 4.1 (priority 2) Identify suitable refuge sites for each RU and MU as appropriate
Task 4.2 (priority 2) Stock refuges from appropriate source stocks
Task 4.3 (priority 2) Maintain refuge populations until the species is delisted

5) Ensure replicate and refuge populations are genetically representative of source populations

6) Develop governmental and public support for the recovery effort
Task 6.1 (priority 3) Post and maintain signs to inform the public of stream restrictions
Task 6.2 (priority 3) Develop outreach materials to educate the public and build support for GIIN recovery
Task 6.3 (priority 3) Amplify outreach by including coalitions with other species and ecosystem projects

7) Use adaptive management practices to guide future recovery actions where uncertainty exists

Appendix B. Project Evaluation Scoring Form

Gila River Basin Native Fishes Conservation Program
Proposal Evaluation Form

Proposal Title: _____

Fiscal Year: _____ Total Cost: _____

Evaluator(s): _____

1) Geographical Area

- Project covers a large project area or multiple populations. (1 pt = small area or single population; 2 pts = medium area or few populations; 3 pts = large area or many populations)
- Is the project area protected from future threats? (1 pt)
- Is the land management agency supportive of the project? (1pt)

Geographic total_____(5 pts)
Comments:

2) Technical Merits (0-5 pts)

- Project demonstrates sound technical and scientific merit and is supported by established scientific studies or principles.
- Project objectives are realistic, measurable, and achievable; methods are clearly defined and appropriate to meet stated objectives.
- Mechanism in place to evaluate, monitor and disseminate the results of the project, including lessons learned and best practices.

Technical Merits total_____(5 pts)
Comments:

3) Program Priorities

- Stabilize an existing population or replicate a rare population in the wild? (2 pts)
- Stabilizes multiple populations or replicates multiple rare populations in the wild (2 pts)
- Provide immediate on-the-ground benefit? (2 pts)
- Benefit one of the five priority species? (1 pt)
- Benefit multiple priority species? (1 pt)
- Benefit nonpriority native species (1 pt)
- Address other activities pertaining to research or management that aid in conserving native fish populations and habitats? (1 pt)

Program Priorities total_____(10 pts)
Comments:

4) Partnership Involvement

- Project has multiple and diverse partners working in collaboration, including local/regional partners. (2 pts)
- Project is part of a larger collaborative conservation effort. (1 pt)
- Project builds upon previously or currently funded GRBNFCP projects. (2 pts)

Partnership Involvement total___(5 pts)
Comments:

5) Contribution to Recovery (0-10 pts)

- Project addresses one or more recovery goal tasks.
- Project addresses one or more strategic plan goals.
- Project addresses recovery goals for one or more species.
- Project addresses recovery actions for species without recovery plans.

Contribution to Recovery total___(10 pts)
Comments:

6) Timeline and Cost Considerations

- Is immediate action required? (0 pts = not urgent, 1 pt = within the next 3-5 years, 2 pts = within the next year).
- Project is cost effective? (2 pts)
- Does this project have matching funds? (2 pts)
- Is the project ready to implement, including completion of compliance documents, land owner permission, and necessary permits? (4 pts)

Timeline and Cost Considerations total___(10 pts)
Comments:

Total Proposal Score:

Appendix C. Work Plan Template

Fiscal Year 20XX

Project Title: *Full title of the project*
Implementing Entity: *The organization(s) conducting the work.*
Start Year: *Year this project began*
Location(s): *List the location(s) by waterbody name of where this project will be taking place during the work plan year.*
Species Protected: *List all of the species this project will protect beginning with the priority species. If this project includes more than one population of a species please indicate how many populations the project addresses and indicate the importance of the population (ex. genetic management unit lacking populations).*

Project Description:

- *Background – Provide a project timeline including short summary of past results, the planned activities for this year, planned activities for future years and estimated year of completion.*
- *Geographical Area – describe geographical extent of this project including the number of populations affected, whether the area is protected by future threats, who owns the land and if the land management agency is supportive.*
- *Methodologies – describe the techniques used, sample design (frequency, timing, and specific locations of surveys), and planned analysis to evaluate success.*

Please make this specific enough for reviewers to understand whether the methods are technically feasible.

Program Priorities
Describe how this project addresses program priorities (found on page 3 of the 5-year strategic plan: https://www.usbr.gov/lc/phoenix/biology/azfish/pdf/2023-2027GRBStrategicPlan.pdf
Please describe which species (priority and non-priority) are being considered.

- *Does the project stabilize existing population(s) through nonnative removal or other means, if so how many?*
- *Does this project replicate a rare population(s), if so how many? Please describe which population(s)/species are being replicated.*
- *What is the conservation status of the priority species addressed in this project (Ex. project protects a level 1 Gila Topminnow population).*
- *Is this project part of a larger action (captive production leads to replication in the wild, research, etc)?*
- *Describe if there are immediate on the ground benefits?*

Partnerships

- *Are there other partners working on the project, if so who?*
- *Is this project part of a larger collaborative effort.*
- *Does this project build upon previously or currently funded GRBNFCP projects.*

Strategic Plan Goals and Objectives:

Describe what goal(s) and objective(s) this project addresses using the 2023-2027 strategic plan. See example below:

- *Scientific Foundation*
  - *Objective 2a. As opportunities arise, initiate ecological/life history studies of native biota where such understanding can assist with conservation goals of the Program.*
- *Preventing Extinction and Managing Toward Recovery*
  - *Objective 4a. Replicate Gila topminnow stocks into a minimum of 10 surface waters.*

Recovery Goals:

Identify which recovery goal(s) this project is meeting. List the species recovery plan and then the task number followed by the task description. Please use existing recovery plan task list on 2023-2027 strategic plan (Appendix A). See example format below:

- *Gila Topminnow recovery plan (1999 draft)*
  - *Task 2.2 (priority 1): Reestablish into suitable habitats*
  - *Task 3.1 (priority 1): Develop standardized population and habitat monitoring protocols and implement them*

Estimated Time and Cost:

- *Estimated cost of the project this year and if known total estimated project costs?*
- *What is the urgency of this project (within the next year, within the next 3-5 year, greater than 5 years)?*
- *Is this project ready to implement or are other compliance documents needed?*
- *Does this project have in-kind or matching funds?*

Appendix D. Example Budget Request for Proposed Projects

LINE ITEM DETAILS FOR EACH PROJECT ACTIVITY:

Budget Categories:	**Rate or Cost Explanation**	**CAP Program to Fund:**	**Applicant Contribution:**	**Total Cost per Category:**
Personnel (Labor)	$00/hr wage/FTE	$	$	$
Fringe Benefits (ERE)	Labor cost x 00%	$	$	$
Travel (Per Diem)	$00/day x 00 days	$	$	$
Equipment (Capital Expenses)	Vehicle or items valued at $5,000+	$	$	$
Supplies (AOO)		$	$	$
Contractual (Professional Outside Services)	# seasonal or part-time staff x $00/hr or job	$	$	$
Construction		$	$	$
Other		$	$	$
Total Direct Charges		$	$	$
Indirect Charges	Labor cost x 00%	$	$	$
Total Cost per Year		**$**	**$**	**$**
Total Cost over duration of project		**$**	**$**	**$**

Notes:

Example for Project AAA, Activity 1 (duration = 2 years)

Budget Categories:	**Rate or Cost Explanation**	**CAP Program to Fund:**	**Applicant Contribution:**	**Total Cost per Category:**
Personnel (Labor)	$28.85/hr wage	$30,000	$30,000 in-kind	$60,000
Fringe Benefits (ERE)	Labor cost x 35%	$10,500	$10,500 in-kind	$21,000
Travel (Per Diem)	$40/day x 50 days	$2,000	$0	$2,000
Equipment (Capital Expenses)	Vehicle or items valued at $5,000+	$0	$0	$0
Supplies (AOO)	(see itemized list)	$4,000	$0	$4,000
Contractual (Professional Outside Services)	3 contract interns x $4000/intern (=12 wks of fieldwork)	$12,000	$0	$12,000
Construction		$0	$0	$0
Other		$0	$0	$0
Total Direct Charges		$58,500	$40,500 in-kind	$99,000
Indirect Charges	Labor cost x 30%	$9,000	$0	$9,000
Total Cost per Year		**$67,500**	**$40,500 in-kind**	**$108,000**
Total Cost over duration of project		**$135,000**	**$81,000 in-kind**	**$216,000**

Notes: Applicant labor/ERE is half paid by state wildlife agency using non-federal match (= 1040 hrs of a WSIII project supervisor). Applicant is providing a match of 37.5% as a cost-share to the total project cost.

Estimated Cost: *Provide the estimated cost to the nearest hundreds.*

Appendix E. Annual Report Template

General Report Format

1. **Project Title –** *Project or task title*
2. **Recovery Goals/Objectives -** *List the recover goal/objective number and description.*
3. **Background -** *Summary of work done to date as it relates to the action or task.*
4. **Results -** *Results of the reporting year.*
5. **Recommendations -** *Future actions as it relates to the action. Some examples of recommendations could be whether fish have established, need for additional augmentation, need for long term monitoring, success of removal and thoughts on how to improve the action, suitable habitat for species of interest, etc.*

Example Format

Acquire Spikedace, Loach Minnow and rare populations of other native fish

Recovery Objectives:

- Spikedace recovery objective 8.1. Determine wild stocks suitable for contribution to hatchery stocks.
- Loach Minnow recovery objective 8.1. Determine wild stocks suitable for contribution to hatchery stocks.
- Spikedace recovery objective 8.2. Collect and transfer wild stocks to suitable facility.
- Loach Minnow recovery objective 8.2. Collect and transfer wild stocks to suitable facility.

Background: The purpose of this task is to acquire Spikedace and Loach Minnow from all extant lineages and bring them to the Department's Aquatic Research and Conservation Center (ARCC), or another facility, for propagation and to establish refuge populations. The goal is to have 500 adults on station for each lineage. There are few natural populations left, and they need to be protected. Removing too many fish from a wild population could negatively impact it. The number of fish to remove from a given population is a coordinated decision between USFWS and state wildlife agencies, and is usually based on monitoring information about the estimated number of fish in the stream. If necessary, new individuals are brought into ARCC every year to maintain the population size and genetic similarity with wild stock.

Loach Minnow (Aravaipa Creek lineage) were first brought into the ARCC in August 2002 to develop propagation techniques (Childs 2004). Spikedace and more Loach

Minnow from Aravaipa Creek were brought on station in 2007 to establish broodstocks. Since then the number of fish and lineages brought each year has fluctuated from none to several hundred. Spikedace from Aravaipa Creek, Upper Gila River, and Gila River Forks), and Loach Minnow from Aravaipa Creek, Blue River and upper Gila River were brought on station in 2009. Only twice have more than 300 individuals of a given lineage been brought into the facility: 640 upper Gila River Spikedace in 2007, and 434 Gila River Forks Loach Minnow in 2011.

Results: On November 7, 2017, Department staff collected and transported 160 Spikedace and 100 Loach Minnow from Aravaipa Creek to ARCC. All fish were collected via seining downstream of the TNC Guest House site from NAD83 12S 556094 3638097 to 556130 3638256.

On November 30, 2017 ARCC staff acquired 110 Gila Forks lineage Loach Minnow from New Mexico Game and Fish Department and brought them back to ARCC.

No collections of the other lineages were completed because they were not planned for; repatriations using those lineages were not planned for 2018.

Recommendations: Continue to collect Spikedace and Loach Minnow from remnant populations, with goals to minimize impact on remnant population but acquiring the number of fish necessary to maintain a refuge population of at least 500 adults. The Loach Minnow population in the upper Blue River needs to be assessed and more of them brought into ARCC in 2018. ARCC staff should coordinate with NMDGF regarding acquiring more stock of the New Mexico lineages.