PROJECT STATEMENT

Project Title: Conservation Status Assessment Mapping for Southeastern At Risk Species.

States: Georgia, North Carolina, South Carolina, Florida, Alabama, Kentucky, Virginia, Tennessee, and Mississippi.

US Fish and Wildlife Field Office: Georgia Ecological Services, Athens.

Grant Title: Traditional Section 6

Project Coordinator: Brett Albanese, Georgia Department of Natural Resources.

1. Need:

The U.S. Fish and Wildlife service is developing Species Status Assessments (SSAs) to support the assessment of species that are petitioned for listing under the U. S. Endangered Species Act. Understanding the historic and current distribution of a species is critical for these assessments, but up to date distributional data is rarely available across the range of a species. Conservation Status Assessment Maps can help support the development of Species Status Assessments (**SSAs**) by illustrating the current status of a species across its range. These maps were originally developed for Georgia's 2015 SWAP revision and are available online through our rare species data portal (select range map link for any species). We have also developed region-wide maps to help assess the status of imperiled minnows and suckers in the southeastern United States. While more quantitatively rigorous methods exist for assessing conservation status (e.g., occupancy modeling, demographic monitoring, and species distribution models), these methods are rarely applied across the entire range of a species and often require data collected in a very specific way. A key advantage of conservation status assessment maps is that they can utilize commonly available species occurrence data.

2. Objectives

a. Develop range wide conservation status assessment maps for 10 petitioned species and provide the maps to FWS and partners in support of the SSA process.

b. Assist other states with the development of conservation status assessment maps through an instructional webinar and technical support.

3. Expected Results and Benefits

Maps will show the current distribution of species across their range and will help support the development of SSAs for 10 petitioned species. Maps will help identify priority areas for conservation and areas where additional surveys are needed. Producing the maps also helps

identify records that need verification, such as records that plot outside the known range of the species. As part of this project, draft maps will undergo a formal peer review process and then be updated as necessary.

While it is beyond the scope of this project to assess the viability of individual populations of petitioned species, our project can provide a consistent spatial framework to facilitate such assessments. For example, Georgia completed a HUC 10 watershed assessment utilizing existing GIS datasets such as the National Landcover Data Set, conservation lands, land cover change data, and predicted urbanization. These data layers, when examined in conjunction with conservation status assessment maps, helped us identify the most viable watershed occurrences for Species of Greatest Conservation Need (GADNR 2015).

Our approach will allow states to retain their raw occurrence data, which has been a significant hurdle to data sharing in the past. Compilation of data for this project should save considerable time for FWS Biologists that are coordinating SSAs. Finally, the training sessions we conduct will allow other states and partners to develop conservation status assessment maps for other at-risk species.

4. Approach

Our method uses a simple GIS algorithm to identify the most recent occurrence record within a mapping unit of interest, such as a United States Geological Survey Hydrologic Unit Code (HUC) 10-digit or 12-digit watershed, topographic quadrangle, 24 km hexagons, or National Hydrography Dataset (NHD) 1:24,000 stream reaches. Individual map units are then categorized into different time intervals, such as 0-10 years, 11-25 years, and > 25 years. Date categories are represented as different colors on the map as a coarse indicator of population presence: blue (0-10 years)—population is likely present, yellow (11-25 years)--some concern that population may not be present, and red (> 25 years)—significant concern that population may not be present. Occurrence records as well as locations of recent surveys (within the past 10 years) can **optionally** be overlaid on the map to facilitate interpretation. For example, yellow and red watersheds that have been extensively surveyed in the past decade are areas where the species may have declined or is potentially extirpated. Conversely, yellow and red watersheds with limited survey effort should be a high priority for additional sampling. Blue watersheds with extensive occurrence records may represent priority areas for conservation and future monitoring. Examples of a range wide map HUC 10 level and NHD stream reach status maps are provided below.

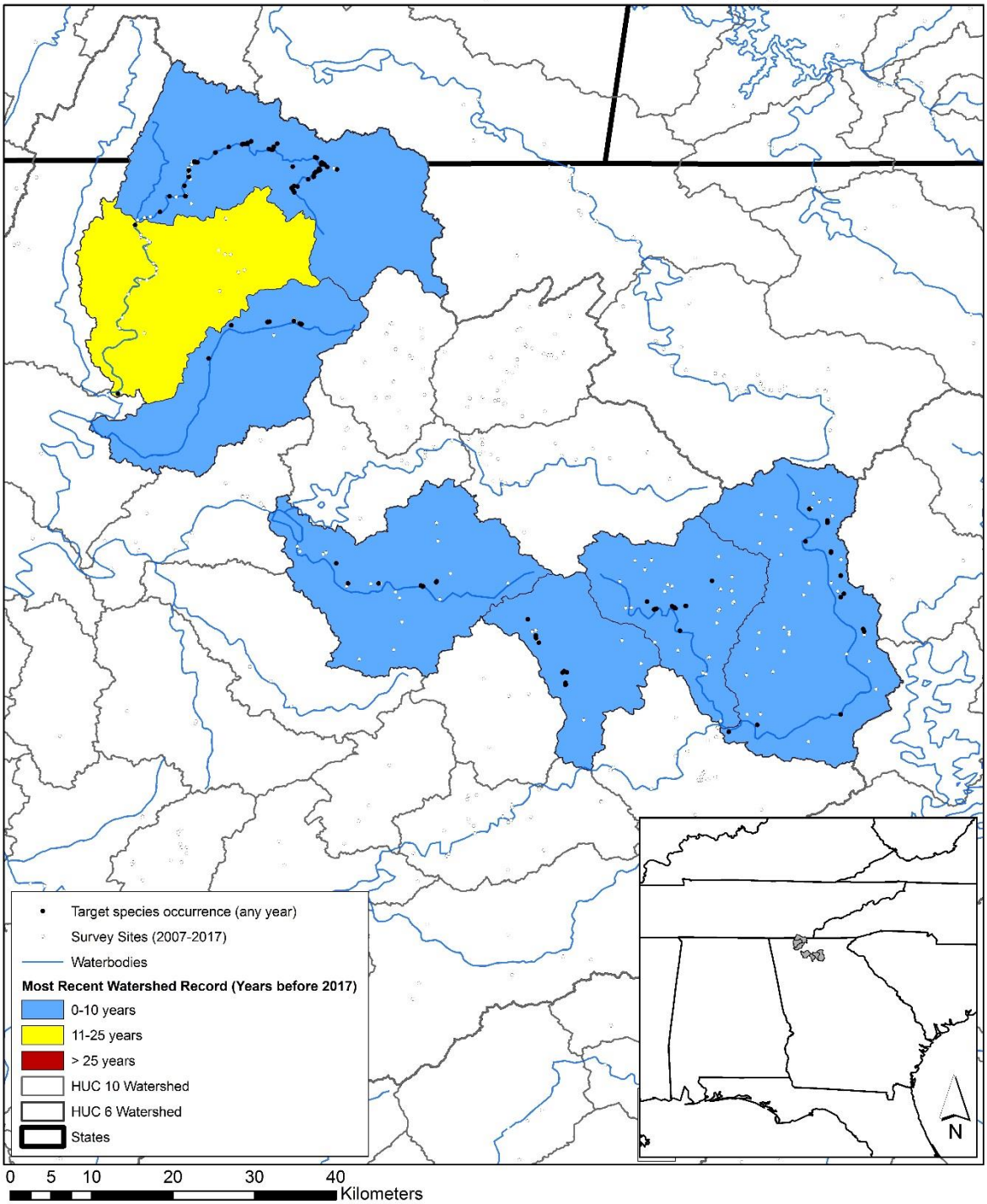
Data Sharing and Management

The Southeastern-At-Risk Species (SEARS) working group of the Southeastern Association of Fish and Wildlife Agencies' (SEAFWA) Wildlife Diversity Committee has developed draft recommendations on how southeastern states can share data across political boundaries. Data sharing has been a significant hurdle to the development of range wide status assessments. The data team recommends that states continue to manage their own databases, utilize the GIS algorithm to develop status assessment maps within their own boundaries, and share generalized status assessment map data for the creation of region wide status assessment maps. In this project, Georgia would receive map data from participating states to create regional status assessment maps. Georgia would also provide training, written documentation, and technical support to

participating states so they can utilize the algorithm for this and other projects. Our training would be publicly available so that other groups such could potentially utilize our algorithm on their own data sets.

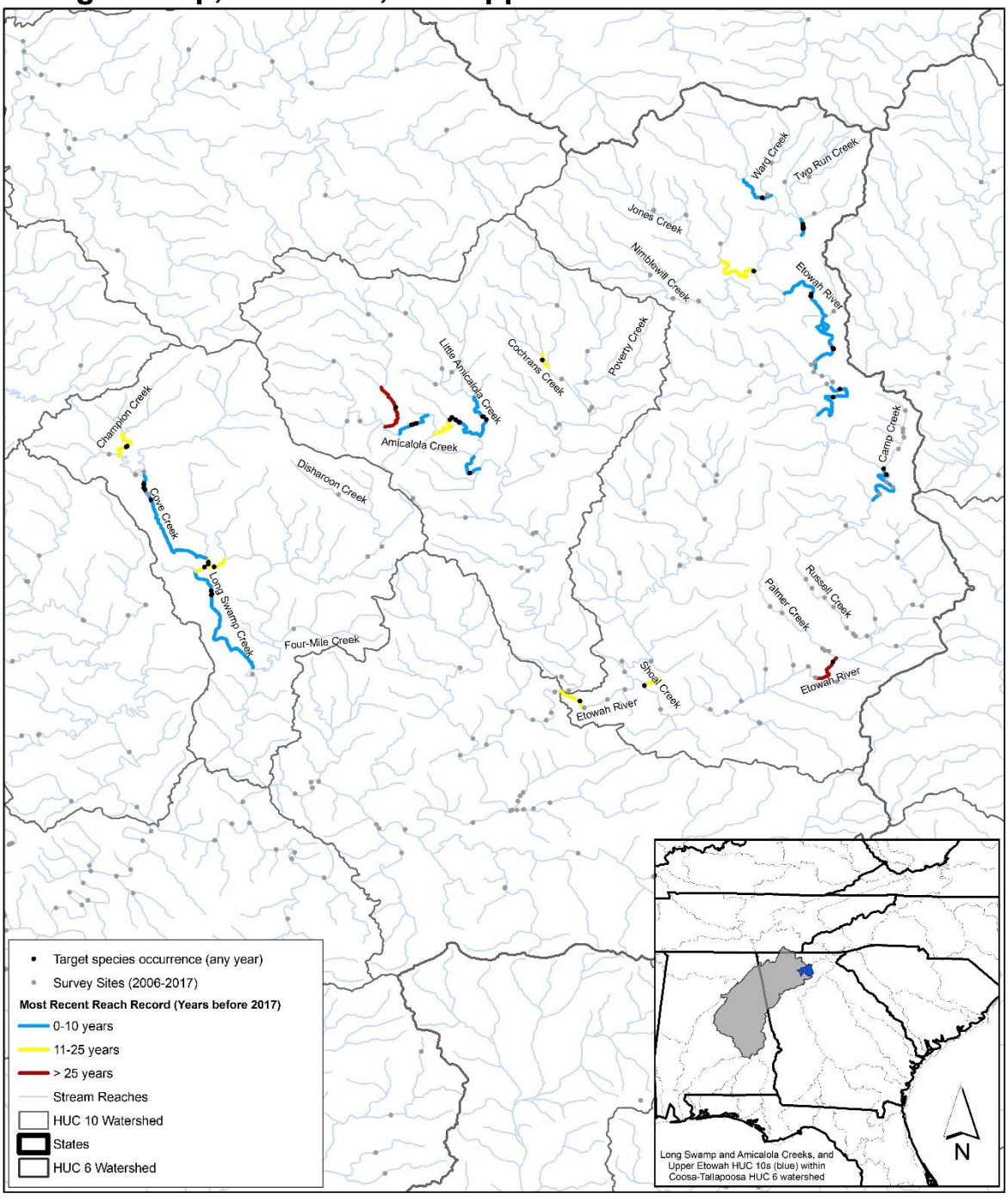
We will provide each state the **option** of sending us unprocessed species occurrence data for the creation of status assessment maps. This latter option may be desirable for states with limited capacity to invest in algorithm processing. Finally, Georgia will share final status assessment maps with each state and species status assessment teams by posting the maps on a website.

Conservation Status Assessment Map
Bridled Darter (Percina kusha)



Map created April 21, 2017 by Georgia Department of Natural Resources.
See map documentation for complete list of data contributors.

Conservation Status Assessment Map
Bridled Darter (Percina kusha)
Long Swamp, Amicalola, and Upper Etowah HUC 10 Watersheds



Map created March 21, 2017 by Georgia Department of Natural Resources.
See map documentation for complete list of data contributors.

Target Species for Mapping

Target species were selected to provide timely information to FWS as they develop status assessments for petitioned species identified in their 7 year work plan. We have focused on species with 12 month findings due in FY 19 and FY 20, which means that status review teams will have access to final maps at least 8 months before the end of FY 19 and 20 months before the end of FY 20. We have also focused on species that have all or significant portion of their range in the southeastern United States. Although our project is limited to 10 species, the training provided during this project will allow other states to create status assessment maps for many at-risk species that occur soley within their boundaries.

Species	12M Due	Mapping Level*	States
Carolina Pygmy Sunfish	FY 19	HUC10, NHD	NC, SC
Purpledisk Honeycomb Head	FY 19	HEX24, HUC10	FL, GA, SC
Ocmulgee Skullcap	FY 19	HEX24, HUC10	GA, SC
Cumberland Moccasinshell	FY 20	HUC10	AL, GA, KY, NC, TN, VA
Southern Elktoe	FY 20	HUC10, NHD	AL, FL, GA
Tennessee Pigtoe	FY 20	HUC10	AL, GA, MS, NC, TN, VA
Robust Redhorse	FY 20	HUC10, NHD	NC, SC, GA
Hiwassee Headwaters Crayfish	FY 21	HUC10, NHD	GA, NC
Tennessee Heelsplitter	FY 22	HUC10, NHD	AL, GA, NC, VA, TN
Little Tennessee Crayfish	FY 23	HUC10, NHD	GA, NC

Project Steps and Timeline

Project Start Date: April 1st 2018

1. April-May 2018: Georgia prepares regional mapping data necessary for creation of status assessment maps.
2. June 2018: GA provides templates for data collection and mapping unit data (e.g., southeastern HUC 10 data, 24 km Hexagon data, etc.) to all states within the range of target species. States begin process of assembling species occurrence data.
3. July 2018: GA provides algorithm, written documentation, and an instructional webinar for states that want to aggregate their data by spatial mapping unit.
4. September 2018: States and any member of the status assessment team submit raw occurrence or spatially aggregated data to GA for development of range wide status assessment maps.
5. October 2018: Maps are submitted to each state and members of the species status assessment team for a 2 month peer-review period. Map edits are returned to Georgia for map updating. Map edits are also returned to individual states so they can correct their databases.
6. December 2018: Updated maps are shared with species review team for final verification and additional updating as necessary.

7. January 2019: Final status assessment maps are submitted to species review team for incorporation into Species Status Assessment.

8. January 2020: If requested by the status assessment team, Georgia DNR can do an additional update of any status assessment map. This may be necessary if new populations were discovered or re-discovered within 2019.

Project End Date: March 1st 2020

5. **Location:** Maps will be created for species occurring in 9 southeastern states. The project will be carried out at the Wildlife Resources Conservation Center in Social Circle, Georgia.

6. **Estimated Cost**

1) **Budget**:

Category	Federal	Non-Federal	Totals
Personnel	$30,600	$3,400	$34,000
Travel	$1,800	$200	$2,000
Total	$32,400	$3,600	$36,000

Funds are requested to support 1 month of a Program Manager for overall project coordination, 2 months of salary for our Data Manager who will conduct training and technical support related to the GIS algorithm, and 2 months of salary for our Wildlife Tech 2 that will manage data and create status assessment maps. We also request travel funds to promote the project at one or two regional or national professional conferences during the project period.