

Interim Core Map Documentation for Purple Bankclimber (mussel)

Version 1

Review Completed: April 2026

Core Map Developer: U.S. Environmental Protection Agency (EPA) Office of Pesticide Programs (OPP)

Species Summary

The purple bankclimber (*Elliptoideus sloatianus*; Entity ID # 366) is a threatened mussel listed in 1998. This species inhabits medium to large river channels in substrates of sand or sand mixed with mud or fine gravel, often near limestone outcrops. Critical habitat was designated for this species in 2007. Additional information is provided in **Appendix 1**.

Description of Core Map

The core map for the purple bankclimber is based on critical habitat. The range of the species is not highly refined, including 6,688,084 acres occurring in the Upper Flint, Middle Flint, Lower Flint, Ichawaynochaway, Apalachicola, Chipola, Upper Ochlockonee, and Lower Ochlockonee sub-basins. The critical habitat is the Upper Flint River (GA), Middle Flint River (GA), Lower Flint River (GA), Apalachicola River (FL), Upper Ochlockonee River (FL, GA), and Lower Ochlockonee River (FL). The known occurrences of this species fall within the critical habitat. EPA did not find evidence that any key areas for this species exist outside of the designated critical habitat. The U.S. Fish and Wildlife Service (FWS) recovery goals for this species include: at least seven (7) populations exhibit a stable or increasing trend; at least one (1) population in each of the Chipola, Flint, Apalachicola, and Ochlockonee River systems; and threats have been addressed and/or managed to the extent that the species will remain viable into the foreseeable future. **Figure 1** depicts the interim core map. The core map represents approximately 11,015 acres.

The purple bankclimber inhabits medium to large river channels in substrates of sand or sand mixed with mud or fine gravel, often near limestone outcrops, which is captured in the species' designated critical habitat. The species has a period of gravidity from late-March through mid-June with water temperatures ranging from 15°C (59°F) to 25°C (77°F). Fishes that have effectively transformed glochidia of the purple bankclimber in laboratory trials include the blackbanded darter (*Percina nigrofasciata*), halloween darter (*Percina crypta*), holiday darter (*Etheostoma brevirostrum*), lake sturgeon (*Acipenser fluvescens*), shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), and Gulf sturgeon (*Acipenser oxyrinchus desotoi*). Landcover categories within the core map area are included in **Table 1**. Landcover within the core map is predominantly woody wetlands and open water, which is consistent with the habitat of this species.

The core map developed for the purple bankclimber is considered interim. This core map will be used to develop pesticide use limitation areas (PULAs) that include the purple bankclimber. This core map incorporates information developed by FWS and made available to the public; however, the core map has not been formally reviewed by FWS. This interim core map may be revised in the future to incorporate expert feedback from FWS. This interim core map has a "limited" (2) best professional judgment classification because the core map is based on the species designated critical habitat with no

additions or subtractions, although areas of the species range are not included based on interpretation of FWS information. This core map does not replace or revise any range or designated critical habitat developed by FWS for this species.

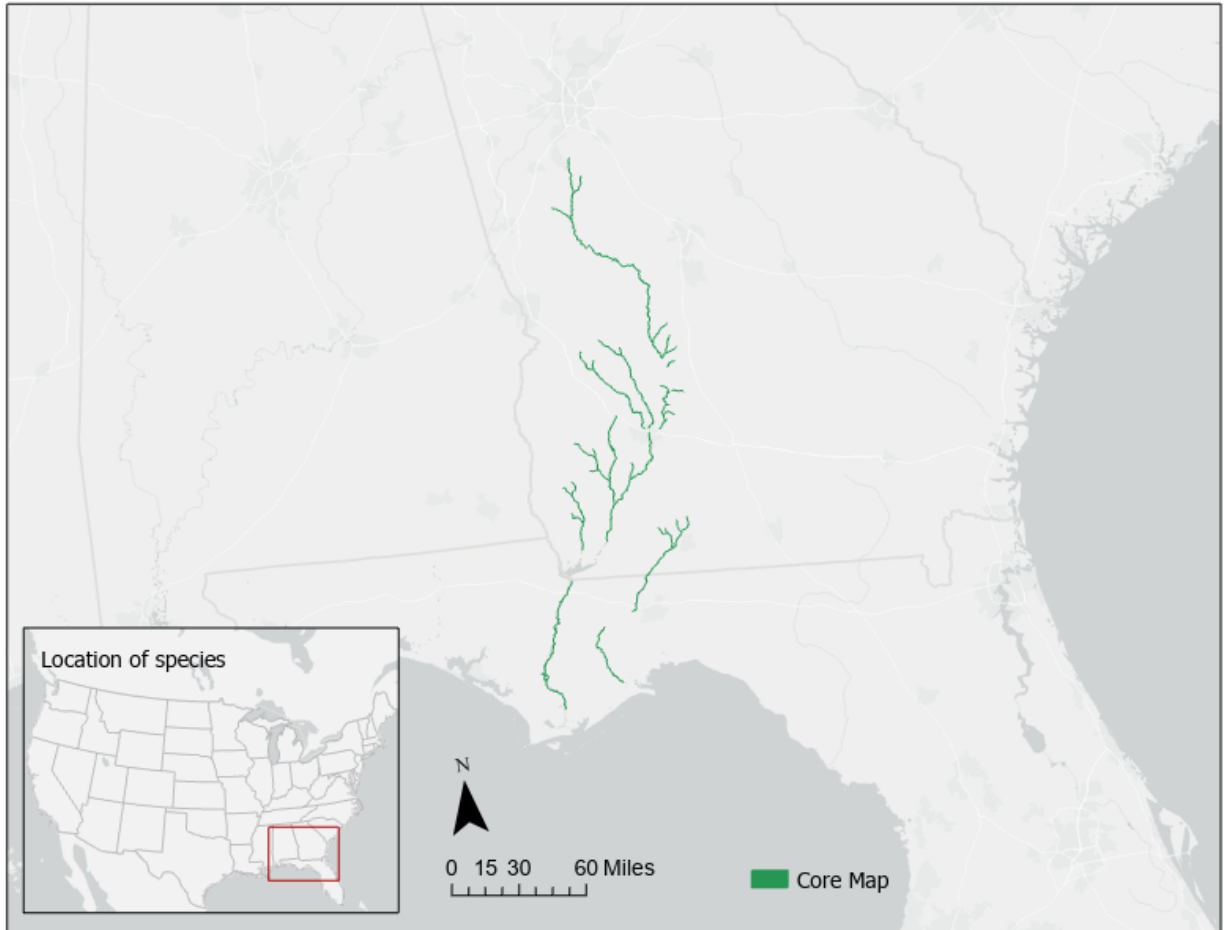


Figure 1. Interim core map for the purple bankclimber. The total acreage of the core map is approximately 11,015 acres.

Table 1. Percentage of Interim Core Map Represented by NLCD¹ Land Covers and Associated Example Pesticide Use Sites/Types.

Example pesticide use sites/types	NLCD Landcover (Value)	% of core map represented by landcover
Forestry	Deciduous Forest (41)	1%
Forestry	Evergreen Forest (42)	1%
Forestry	Mixed Forest (43)	1%
Agriculture	Pasture/Hay (81)	0%
Agriculture	Cultivated Crops (82)	0%
Mosquito adulticide, residential	Open space, developed (21)	0%
Mosquito adulticide, residential	Developed, Low intensity (22)	0%
Mosquito adulticide, residential	Developed, Medium intensity (23)	0%
Mosquito adulticide, residential	Developed, High intensity (24)	0%
Invasive species control	Woody Wetlands (90)	62%
Invasive species control	Emergent Herbaceous Wetlands (95)	2%
Invasive species control	Open water (11)	32%
Invasive species control	Grassland/herbaceous (71)	0%
Invasive species control	Scrub/shrub (52)	0%
Invasive species control	Barren land (rock/sand/clay; 31)	1%
Total Acres	Interim Core Map Acres	~ 11,015Error! Reference source not found.

Evaluation of Known Location Information

There are four datasets with known location information for this species:

- Descriptions of locations provided by FWS
- Occurrence locations in iNaturalist
- Occurrence locations in Global Biodiversity Information Facility (GBIF)
- Occurrence locations in NatureServe

EPA evaluated these four sets of data before selecting the type of and developing the core map. FWS appeared to have the best available occurrence information, providing a map that depicted the current known locations and names and descriptions of current land ownership. The FWS known occurrences are in the Upper Flint River (GA), Middle Flint River (GA), Lower Flint River (GA), Apalachicola River (FL), Upper Ochlocknee River (FL, GA), and Lower Ochlocknee River (FL) (**Figure A1-3** in **Appendix 1**). The range of the species is from location (**Figure A1-1** in **Appendix 1**). Occurrences in iNaturalist, GBIF, and NatureServe did not support further expanding the core map outside of the FWS range and known occurrences. **Appendix 1** includes more information on the available known location information.

¹ Dewitz, J., 2023, National Land Cover Database (NLCD) 2021 Products: U.S. Geological Survey data release, <https://doi.org/10.5066/P9JZ7AO3>

Approach Used to Create Core Map

The core map was developed using the “Process EPA Uses to Develop Core Maps for Draft Pesticide Use Limitation Areas for Species Listed by the U.S. Fish & Wildlife Service (FWS) and their Designated Critical Habitats”² (referred to as “the process”). This core map was developed by EPA and was developed using the four steps described in the process document:

1. Compile available information for a species
2. Identify core map type
3. Develop the core map for the species
4. Document the core map

For step 1, EPA compiled available information for the The purple bankclimber from FWS. The information compiled for the The purple bankclimber is included in **Appendix 1**. Influential information that impacted the development of the core map included:

- The range is not highly refined.
- The species has a FWS designated critical habitat that represents key locations for this species’ conservation.

For step 2, EPA used the compiled information to identify the core map type, including the FWS designated critical habitat for the species. Based on this information, EPA identified critical habitat for the The purple bankclimber interim core map.

For step 3, EPA used the designated critical habitat data from FWS.

Discussion of Approaches and Data that were Considered but not Included in Core Map

EPA did not explore approaches other than those described in this documentation.

² Dated 2024, available online at: <https://www.epa.gov/endangered-species/process-epa-uses-develop-core-maps-pesticide-use-limitation-areas>

Appendix 1. Information Compiled for Species

1. Recent FWS Documents/Links

- [Five Year Review 2020](#) – (05/01/2020)
- [Five Year Review 2007](#) – (09/17/2007)
- [Critical Habitat 2007](#) – (11/15/2007)
- [Recovery Plan 2019](#) – (09/27/2019)
- [Recovery Plan 2003](#) – (09/19/2003)

2. Background information

- Status: threatened in 1998
- Resiliency, redundancy, and representation (the 3Rs)
 - There is no species status assessment for this species
- **Habitat, Life History, and Ecology**
 - **Habitat:**
 - the Upper Flint, Middle Flint, Lower Flint, Ichawaynochaway, Apalachicola, Chipola, Upper Ochlockonee, and Lower Ochlockonee sub-basins (2020 Five Year Review).
 - inhabits medium to large river channels in substrates of sand or sand mixed with mud or fine gravel, often near limestone outcrops (2020 Five Year Review).
 - **Reproduction/pollinators:**
 - has a period of gravidity from late-March through mid-June with water temperatures ranging from 15°C (59°F) to 25°C (77°F). Fishes that have effectively transformed glochidia of the purple bankclimber in laboratory trials include the blackbanded darter (*Percina nigrofasciata*), halloween darter (*Percina crypta*), holiday darter (*Etheostoma brevirostrum*), lake sturgeon (*Acipenser fluvescens*), shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), and Gulf sturgeon (*Acipenser oxyrinchus desotoi*) (2020 five Year Review).
- **Taxonomy**
 - Freshwater mussel
 - **Essential Physical Biological Features (PBFs) for Designated Critical Habitat:**
 - Large contiguous streams and rivers to allow for the movement of fish hosts dispersing the larval life stages (2007 Critical Habitat).
 - Medium to large river channels with substrates of sand or sand mixed with mud or fine gravel, often near limestone outcrops (2020 Five Year Review).
- **Relevant Pesticide Use Sites in FWS Documents**
 - No specific pesticide use sites were noted. **Error! Reference source not found.** were noted as potential threats (2020 five Year Review).
- **Relevant Recovery Criteria and Actions (2019 Recovery Plan)**
 - At least seven (7) populations exhibit a stable or increasing trend, evidenced by natural recruitment, and multiple age classes.
 - At least one (1) population in each of the Chipola, Flint, Apalachicola, and Ochlocknee River systems.

- Threats have been addressed and/or managed to the extent that the species will remain viable into the foreseeable future.

3. Description of the species range

- The range was last updated 01/02/2024
- The range is 6,688, 084 acres.
- the Upper Flint, Middle Flint, Lower Flint, Ichawaynochaway, Apalachicola, Chipola, Upper Ochlockonee, and Lower Ochlockonee sub-basins.

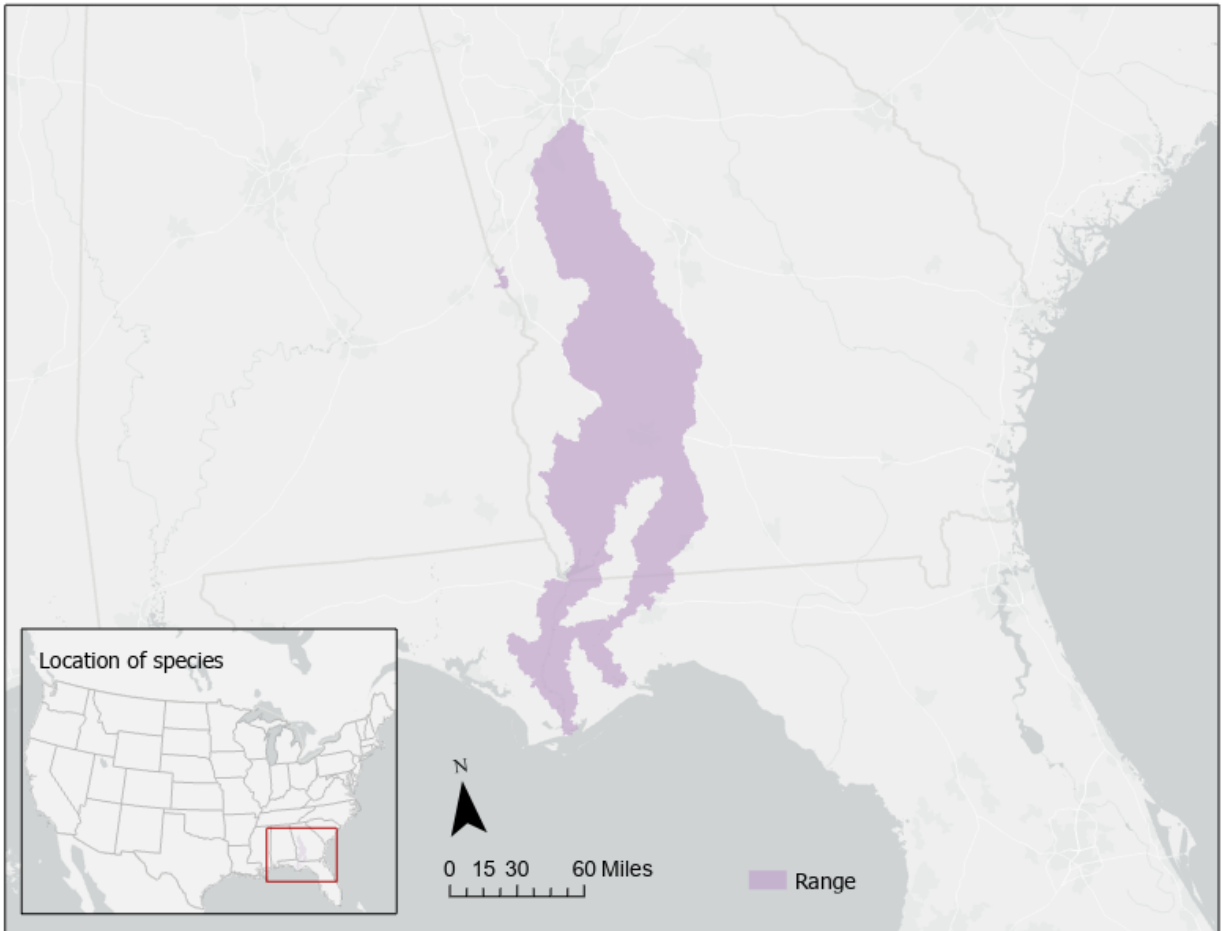


Figure A1-1. FWS Range of the The purple bankclimber.

4. Critical Habitat

- The critical habitat was designated in 2007
- is the Upper Flint River (GA), Middle Flint River (GA), Lower Flint River (GA), Apalachicola River (FL), Upper Ochlockonee River (FL, GA), and Lower Ochlockonee River (FL) (2007 Critical Habitat)
- **Figure A1-2** depicts the current critical habitat.

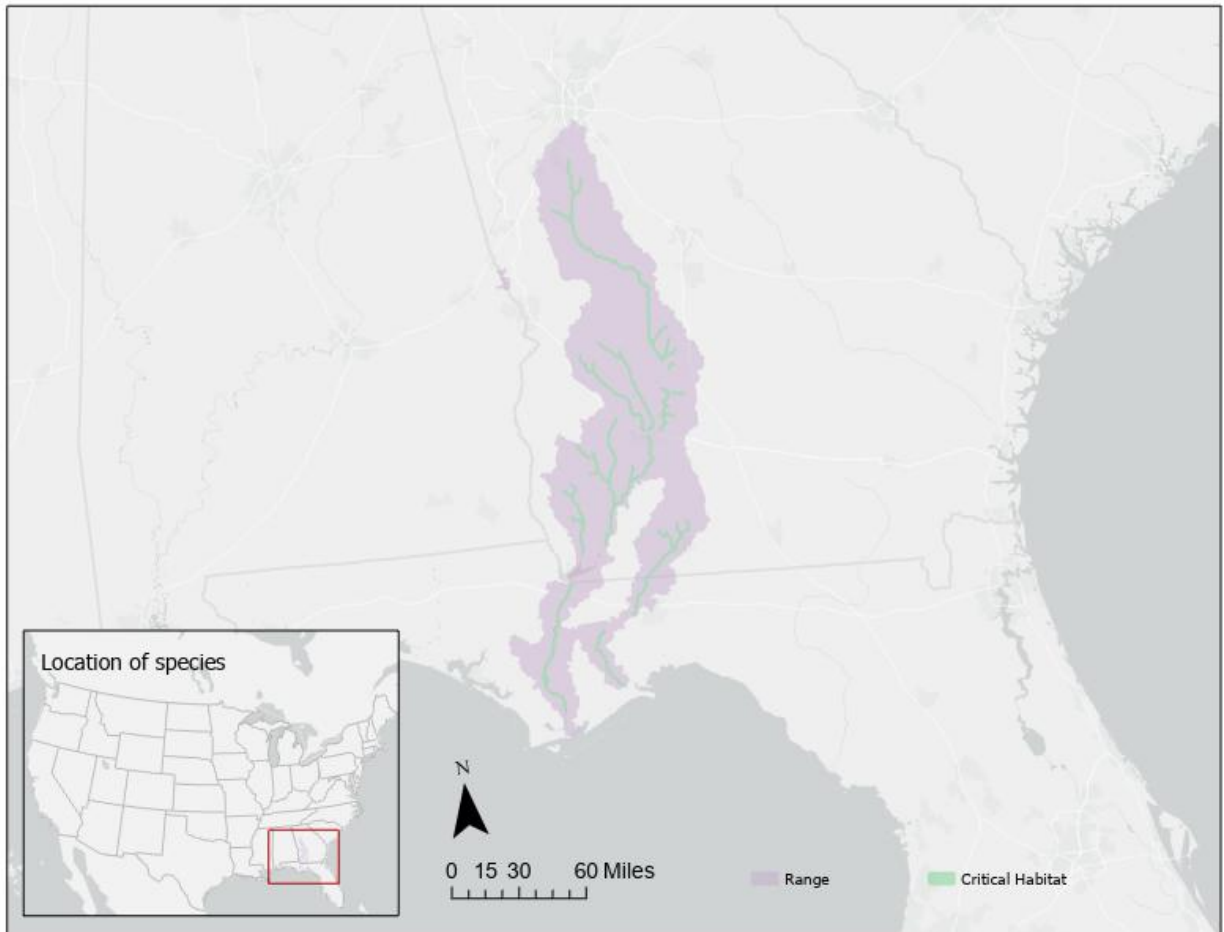


Figure A1-2. FWS critical habitat of The purple bankclimber. Range also included for reference.

5. Known Locations

- **Known Locations Described in FWS Recovery Documents**
 - the Upper Flint River (GA), Middle Flint River (GA), Lower Flint River (GA), Apalachicola River (FL), Upper Ochlocknee River (FL, GA), and Lower Ochlocknee River (FL)
 - **Figure A1-4** depicts the known location data reproduced from FWS' Five Year Review (2020).
 - When considering the locations of the current extant populations (**Figure A1-3**), they are consistent with the location of the critical habitat (**Figure A1-2**).

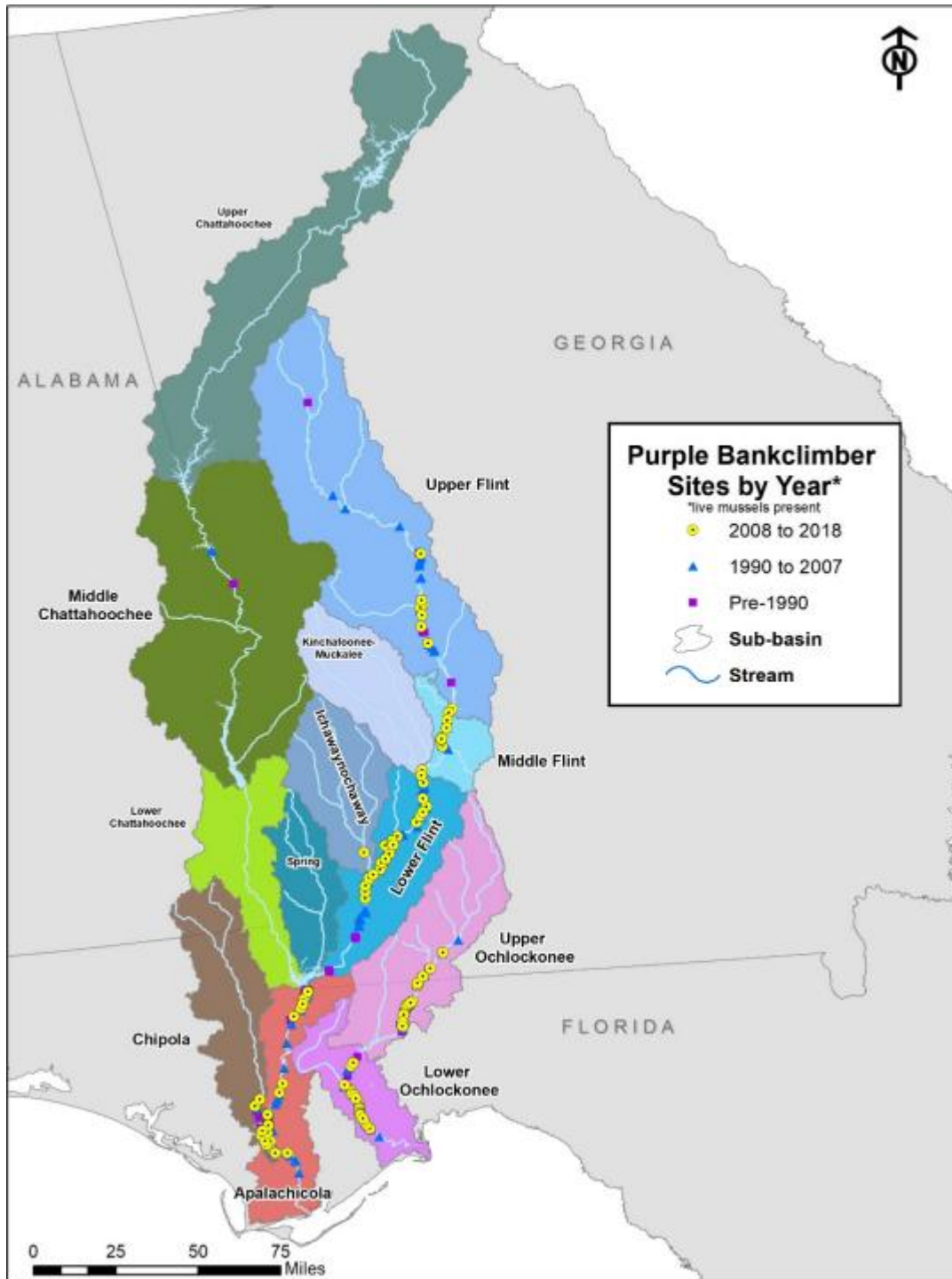


Figure A1-3. Known locations of The purple bankclimber. Reproduced from FWS Five Year Review (2020).

- Occurrences Described in Public Datasets
 - iNaturalist
 - Accessed [here](#) on 11/04/2025
 - There are 6 research grade observations available from 2024-2025.

- Coordinates are obscured due to the species status but appear to be within the critical habitat
- Due to the coarse resolution of these data, many of the observations are mapped on the land near the rivers that are a part of the critical habitat and range. Therefore, it is unclear if these observations are in the core map area or not, but these locations are generally consistent with the location of the range and critical habitat.
- **Occurrences in NatureServe**
 - Accessed [here](#) on 11/04/2025
 - The number of research grade observations was not available.
 - Coordinates are obscured due to the species status but appear to be within critical habitat
 - These locations are generally consistent with the location of the range and critical habitat
- **Occurrences in GBIF**
 - Accessed [here](#) on 11/04/2025
 - There are 34 observations available from 2000-2025.
 - Coordinates are obscured due to the species status but appear to be within critical habitat
 - These locations are generally consistent with the location of the range and critical habitat.

Collectively, the occurrence data from iNaturalist, GBIF, and NatureServe do not support expanding the core map beyond the critical habitat.

Appendix 2. Geographic Information System (GIS) Data Review and Method to Develop Core Map

This core map (“purple bankclimber-core map.ppkx”) was created based on critical habitat. The critical habitat data was downloaded from FWS and used to create this core map.

1. Dataset References and Software

- Software used: ArcGIS Pro
- National Land Cover Database (NLCD) 2021 Products: U.S. Geological Survey data release, <https://doi.org/10.5066/P9JZ7AO330>
- FWS The purple bankclimber Range – last updated on 01/02/2024
- FWS The purple bankclimber Critical Habitat – last updated on 11/15/2007

2. Datasets Used in Core Map Development

All datasets used in core map development are described in EPA’s process document.

3. Core Map Development

To develop the core map, the critical habitat data was downloaded from FWS and opened using ArcGIS Pro. Then, the critical habitat map was filtered in ArcGIS Pro by the Entity ID # for the purple bankclimber (366) so that only the purple bankclimber critical habitat remained.