

## APPENDIX A

### Priority At-Risk Species, ESA, and NFWF Business Plan Species

Proposals addressing priority At-Risk Species (ARS), Endangered Species Act (ESA) listed species, or NFWF business plan priority species listed below will be considered most competitive if they incorporate the eligible high-priority actions identified in Table A1 and are consistent with conservation or [recovery plans](#), where applicable, or with actions listed for the species within [state wildlife action plans](#), and [NFWF’s Delaware River Watershed Business Plan](#). Please note the linked update of the 2017 Delaware River Watershed Business Plan is preliminary, contingent upon approval by NFWF’s Board of Directors in March 2023.

Applications should provide narrative, with citations, as to how the proposed activities will contribute toward the improved conservation of the priority species, how efficacy will be measured or monitored, and how any potential adverse impacts will be addressed and mitigated. Letters of support from state wildlife agencies and prior coordination with agency contacts for state-listed species are highly encouraged.

To identify the potential for rare species or ecosystems on project sites, applicants may find the following tools useful for planning purposes (note that formal environmental review may also be required): [U.S. Fish and Wildlife Service’s Information for Planning and Consultation \(IPaC\) tool](#), [New York State Environmental Resource Mapper](#), [Pennsylvania Conservation Explorer](#), [Pennsylvania Wildlife Action Plan Conservation Opportunity Area Tool](#), [New Jersey’s Landscape Project Mapper](#), [Connecting Habitat Across NJ \(CHANJ\)](#), and [information about Environmental Review in Delaware](#).

**Table 1.** Priority actions, conservation plans, and other prioritization tools available for priority species. The \* notes a focal species in NFWF’s Delaware River Watershed Business Plan.

Species	High Priority Actions Eligible for Funding	Conservation or Recovery Plan Link (s), Designated Locations for Actions, and Other Resources or Prioritization Tools	State Wildlife Agency Contacts or other contacts
<b>Alosine species*</b> (American Shad, Alewife, and Blueback Herring)	Within 13 identified high priority tributaries (see Fig. ES-2 and Table ES-1 on pages 9 and 10 of the <a href="#">Restoration Roadmap</a> ), and additional focal and prospective tributaries identified in <a href="#">NFWF’s Delaware River Watershed Business Plan</a> : provide alternative fish passage, undertake barrier removal for fish passage, conduct population monitoring, or engage dam owners/operators and communities to increase awareness of fish passage needs and the importance of native fish populations and habitat connections.	<a href="#">TNC Delaware River Basin Restoration Roadmap</a>  Locations: <a href="#">Delaware River Basin Fish Passage Prioritization Tool</a>  Atlantic States Marine Fisheries Commission <a href="#">Amendment 2</a> and <a href="#">State-specific Stock Assessment</a>	Delaware: <a href="mailto:michael.stangl@delaware.gov">michael.stangl@delaware.gov</a> <a href="mailto:johnny.moore@delaware.gov">johnny.moore@delaware.gov</a> New Jersey: <a href="mailto:brian.neilan@dep.nj.gov">brian.neilan@dep.nj.gov</a> <a href="mailto:Eric.Boehm@dep.nj.gov">Eric.Boehm@dep.nj.gov</a> New York: <a href="mailto:william.eakin@dec.ny.gov">william.eakin@dec.ny.gov</a>



			<p>Pennsylvania:  <a href="mailto:ddippold@pa.gov">Dave Dippold</a> -  <a href="mailto:ddippold@pa.gov">ddippold@pa.gov</a>  <a href="mailto:dapierce@pa.gov">Daryl Pierce</a> -  <a href="mailto:dapierce@pa.gov">dapierce@pa.gov</a></p>
<p><b>Forest Songbirds*</b>          (Golden-winged Warbler, Cerulean Warbler, Wood Thrush)</p>	<p>Implement forest management projects within designated focal areas (upper Delaware River watershed) that improve breeding habitat suitability for one or more of the target species (golden-winged warbler, cerulean warbler, wood thrush). Successful proposals will follow forest management guidelines for these species, thereby creating healthy and dynamic forest landscapes that sustain a diversity of all forest age classes and maintain structural diversity within forest stands.</p>	<p><a href="#">Golden-winged Warbler Conservation Plan</a> (See Ch. 3)</p> <p>Locations: Forested areas of the upper Delaware River watershed.</p> <p><a href="#">Breeding habitat management guidelines for Cerulean Warblers</a></p> <p><a href="#">Breeding habitat management guidelines for Wood Thrush</a></p>	<p>Pennsylvania:  <a href="mailto:semurphy@pa.gov">Sean Murphy</a> -  <a href="mailto:semurphy@pa.gov">semurphy@pa.gov</a>          New Jersey:  <a href="mailto:sharon.petzinger@dep.nj.gov">sharon.petzinger@dep.nj.gov</a>          New York:  <a href="mailto:matthew.palumbo@dec.ny.gov">matthew.palumbo@dec.ny.gov</a>  <a href="mailto:katherine.yard@dec.ny.gov">Katherine Yard</a> -  <a href="mailto:katherine.yard@dec.ny.gov">katherine.yard@dec.ny.gov</a></p>
<p><b>Northeast Turtles</b>          (Spotted Turtle and Wood Turtle)</p>	<p>Land acquisition in “focal areas” and habitat management/restoration in “management opportunity areas” as defined in the <a href="#">2018</a> and <a href="#">2022</a> Conservation Plans developed for the species, or other priority actions identified in the Plans (<a href="#">Spotted Turtle</a>: Part VI, pp. 210-219; <a href="#">Wood Turtle</a>: Part V, pp. 142-187), including additional sampling and monitoring in focal core areas and sampling landscapes for Spotted Turtles, reducing threats, and research addressing data gaps outlined in the Plans.</p>	<p><a href="#">Eastern Spotted Turtle Working Group 2022 Conservation Plan</a></p> <p><a href="#">NE Wood Turtle Working Group 2018 Conservation Plan</a></p> <p>Locations: Contact state wildlife agency biologists for specific location information</p> <p><a href="#">Wood Turtle habitat management brochure</a></p>	<p>Delaware:  <a href="mailto:nathan.nazdrowicz@delaware.gov">nathan.nazdrowicz@delaware.gov</a>          New Jersey:  <a href="mailto:brian.zarate@dep.nj.gov">brian.zarate@dep.nj.gov</a>          New York:  <a href="mailto:lisa.pipino@dec.ny.gov">lisa.pipino@dec.ny.gov</a>          Pennsylvania:  <a href="mailto:kgipe@pa.gov">Kathy Gipe</a> -  <a href="mailto:kgipe@pa.gov">kgipe@pa.gov</a></p>



<p><b>Pine Barrens Species</b> (Frosted Elfin and Whip-poor-will)</p>	<p>Frosted Elfin:</p> <ul style="list-style-type: none"> <li>• Develop site-specific habitat restoration and management methods for current and future frosted elfin populations.</li> <li>• Implement management to maintain and expand existing host plant patches of native blue lupine (<i>Lupinus perennis</i>) and wild indigo (<i>Baptisia tinctoria</i>). Successful proposals will utilize forestry and/or fire to reduce canopy over and adjacent to host plant populations.</li> <li>• Create new habitat within 0.5 km of habitat currently or historically occupied by frosted elfin (reference State occurrence data), or within 0.5 km of habitat under active restoration with long-term management potential for frosted elfin.</li> <li>• Develop capabilities and capacity for host plant propagation and/or captive breeding. Successful proposals will be developed in close coordination with state partners.</li> </ul> <p>Design and implement population studies for the frosted elfin butterfly and/or eastern whip-poor-will on sites currently or historically occupied by frosted elfin within the watershed (reference State occurrence data).</p> <ul style="list-style-type: none"> <li>• <u>Frosted elfin</u>: Conduct population studies that focus on inter-patch movements and estimation of abundance using mark-release-recapture.</li> <li>• <u>Whip-poor-will</u>: Conduct studies that confirm nest locations and estimate reproductive parameters including clutch size, nest success, and number of young fledged.</li> <li>• For both species, the studies should document habitat conditions, including ground cover, vegetation, and host plant abundance (for frosted elfin).</li> </ul>	<p><a href="#">Partner in Flight, Species Conservation Profile: Eastern Whip-Poor Will</a></p> <p><a href="#">Species Status Assessment Report for the Frosted Elfin</a></p>	<p>Delaware: <a href="mailto:jason.davis@delaware.gov">jason.davis@delaware.gov</a></p> <p>New Jersey: <a href="mailto:robert.somes@dep.nj.gov">robert.somes@dep.nj.gov</a></p> <p>Pennsylvania: <a href="mailto:bleppo@paconservation.org">bleppo@paconservation.org</a></p> <p>Sean Murphy - <a href="mailto:semurphy@pa.gov">semurphy@pa.gov</a></p>
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<p><b>Shorebirds</b> (Ruddy Turnstone, American Oystercatcher, and Whimbrel)</p>	<p><u>Ruddy Turnstone &amp; Whimbrel</u>: Identify migration routes and key stopover and wintering areas using tracking technologies, eBird, surveys, and band resight data (including compiling &amp; analyzing existing data and collecting new data).</p> <p><u>American Oystercatcher</u>:</p> <ul style="list-style-type: none"> <li>● Better identify importance of marsh habitat for breeding and non-breeding to prioritize acquisition, restoration, and management activities including:             <ul style="list-style-type: none"> <li>○ Testing management actions and identifying overlap with other priority species that benefit American Oystercatchers and other shorebird species (e.g., Saltmarsh Sparrow).</li> </ul> </li> <li>● Increase efficacy and stability of predation management on managed lands experiencing poor outcomes using the Atlantic Flyway Shorebird Initiative. Develop improved management tools (e.g., risk-based decision support; guidance on camera use) and coordinated management across sites/managers.</li> </ul> <p><u>All Focal Species</u>:</p> <ul style="list-style-type: none"> <li>● Address threats and coordinate human disturbance management at priority managed lands during all seasons. Proposals should be modelled after existing efforts by the Atlantic Flyway Shorebird Initiative Human Disturbance group and/or Northeast Region Wildlife Refuge system.</li> <li>● Plan and pursue opportunities for habitat acquisition, restoration, &amp; enhancement that incorporate best available knowledge of shorebird habitat needs including:             <ul style="list-style-type: none"> <li>○ Identify and initiate restoration and enhancement opportunities on priority managed lands</li> <li>○ Identify and institute best management practices for coastal engineering and dredge management.</li> </ul> </li> </ul>	<p><a href="#">2010 AMOY Hemispheric Plan</a></p> <p><a href="#">2010 WHIM Hemispheric Plan</a></p> <p><a href="#">Atlantic Flyway Shorebird Initiative (AFSI) Business Plan (2015; rev 2017)</a></p> <p><a href="#">NFWF Atlantic Flyway Shorebird Business Plan (2018)</a></p> <p><a href="#">NFWF American Oystercatcher Business Plan (2008; rev 2018)</a></p> <p><a href="#">AFSI Best Practices for predation management</a></p> <p><a href="#">AFSI Best Practices and resources for human disturbance management</a></p> <p>UFSWS National Wildlife Refuges also have refuge-specific plans that highlight shorebird resources</p>	<p>Delaware:  <a href="mailto:samantha.robinson@delaware.gov">samantha.robinson@delaware.gov</a>  <a href="mailto:henrietta.bellman@delaware.gov">henrietta.bellman@delaware.gov</a></p> <p>New Jersey:  <a href="mailto:christina.davis@dep.nj.gov">christina.davis@dep.nj.gov</a></p>
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<p><b>Freshwater Mussels</b> (Brook Floater, Green Floater, Tidewater Mucket, Yellow Lampmussel)</p>	<ul style="list-style-type: none"> <li>● Plan and pursue opportunities for habitat acquisition, restoration, enhancement, and propagation and stocking species into suitable habitats in the watershed.             <ul style="list-style-type: none"> <li>○ Restore mussels in urban corridors and where habitats will realize the greatest lift from restoring species that are not federally listed.</li> <li>○ Tidewater mucket: Restore tidal fresh zones of the Delaware River, focusing on submerged vegetation / grasses and living shorelines.</li> <li>○ Yellow lampmussel: Restore habitats and protect lands in the upper freshwater tidal zone and the lower Delaware River nontidal zones.</li> <li>○ Brook floater &amp; host fish: Restore riparian habitats in the upper Delaware River.</li> </ul> </li> <li>● Research and Monitoring:             <ul style="list-style-type: none"> <li>○ Develop BMPs to address threats associated with continued development changing water chemistry, acidification, and encroaching salinity from climate change.</li> <li>○ Advance understanding of at-risk mussel declines.</li> <li>○ Conduct surveys for all species, throughout NJ and the upper Delaware River basin.</li> </ul> </li> </ul>	<p><a href="#">TNC Delaware River Basin Restoration Roadmap</a></p> <p>Partnership for the Delaware Estuary Freshwater Mussel Scientific Studies and Reports</p> <p><a href="#">Freshwater Mussel Recovery Strategy, Delaware Estuary and River Basin</a></p>	<p>USFWS contact: <a href="mailto:catherine_gatenby@fws.gov">catherine_gatenby@fws.gov</a></p> <p>New Jersey: <a href="mailto:robert.somes@dep.nj.gov">robert.somes@dep.nj.gov</a></p>
<p><b>Pollinators</b> (Native Bumblebees and Monarch Butterflies)</p>	<p>Provide food and shelter for pollinators throughout the watershed. The larvae of many insect pollinator species have a very narrow range of foods (plants) they can eat—like the monarch butterfly larvae and milkweeds. All pollinators (including birds, bats, and insects) need appropriate nesting sites whether they're located on the ground or in a cavity, like a tree. Migratory pollinators also require overwintering sites. Actions that can benefit pollinators include: considering pollinator conservation in project planning, installation of pollinator gardens that incorporate a diverse suite of native plants, providing nesting sites and avoiding or limiting pesticide use. Proposed actions should be consistent with plans and management guidelines listed to the right. Distributions and population status for many bumble bee species remains largely unknown, highlighting the need for additional surveys.</p>	<p><a href="#">USFS Plan</a> for Monarch Butterflies</p> <p><a href="#">Management Guidelines</a> for Bumblebees</p>	<p>Delaware: <a href="mailto:flavia_rutkosky@fws.gov">flavia_rutkosky@fws.gov</a></p> <p>New Jersey: <a href="mailto:elizabeth_freiday@fws.gov">elizabeth_freiday@fws.gov</a></p> <p><a href="mailto:robert.somes@dep.nj.gov">robert.somes@dep.nj.gov</a></p> <p>Pennsylvania: Betsy Leppo <a href="mailto:bleppo@paconserve.org">bleppo@paconserve.org</a></p> <p>New York: <a href="mailto:tim_r_sullivan@fws.gov">tim_r_sullivan@fws.gov</a></p>



<p><b>Saltmarsh Sparrow*</b></p>	<p>Actions consistent with <a href="#">Atlantic Coast Joint Venture (ACJV) restoration priorities</a> using practices outlined in the <a href="#">Saltmarsh Sparrow Conservation Plan</a>. Highest priority projects will include practices that build marsh elevation and restore hydrological function (e.g., ditch remediation, runnelling, beneficial use of sediment, microtopography) while minimizing impacts to existing populations, and that evaluate these practices for efficacy through monitoring.</p>	<p><a href="#">Restoration Priorities - Atlantic Coast Joint Venture (acjv.org)</a></p> <p>Mapper: <a href="#">ACJV priority marshes</a></p>	<p>USFWS contact: <a href="mailto:maureen_correll@fws.gov">maureen_correll@fws.gov</a></p> <p>Delaware: <a href="mailto:Erin.Dorset@delaware.gov">Erin.Dorset@delaware.gov</a></p> <p>New Jersey: <a href="mailto:christina.davis@dep.nj.gov">christina.davis@dep.nj.gov</a></p>
<p><b>Eastern Brook Trout*</b></p>	<p>Actions consistent with <a href="#">NFWF business plan</a> and other planning resources listed to the right</p>	<p><a href="#">2018 EBTJV Plan</a></p> <p><a href="#">Trout Unlimited Conservation Portfolio</a></p>	<p>Watershed wide: Lori Maloney - <a href="mailto:lori.maloney@cananvi.org">lori.maloney@cananvi.org</a></p> <p>New Jersey: <a href="mailto:Ross.Shramko@dep.nj.gov">Ross.Shramko@dep.nj.gov</a></p>
<p><b>ESA listed species</b> (Red Knot*, Bog Turtle, Black Rail, Dwarf Wedgemussel, Northern Long-eared Bat, Atlantic Sturgeon, Shortnose Sturgeon)</p>	<p>Actions consistent with species recovery plans.</p>	<p>Red Knot <a href="#">Recovery Plan</a></p> <p>Bog Turtle <a href="#">Recovery Plan</a></p> <p>Dwarf Wedgemussel <a href="#">Recovery Plan</a></p> <p>Black Rail <a href="#">ACJV 2020 Plan</a></p> <p>Atlantic Sturgeon <a href="#">Recovery Outline</a></p> <p>Shortnose Sturgeon <a href="#">Recovery Plan</a></p>	<p>USFWS contacts: Delaware: <a href="mailto:julie_thompson-slacum@fws.gov">julie_thompson-slacum@fws.gov</a></p> <p>New Jersey: <a href="mailto:wendy_walsh@fws.gov">wendy_walsh@fws.gov</a></p> <p>New York: <a href="mailto:sandra_doran@fws.gov">sandra_doran@fws.gov</a></p> <p>Pennsylvania: <a href="mailto:robert_m_anderson@fws.gov">robert_m_anderson@fws.gov</a></p>