

The yellow lance mussel listing proposal

Questions and Answers:

Q: What action is the U.S. Fish and Wildlife Service (Service) taking?

The Service is proposing to protect the [yellow lance](#), a freshwater mussel native to rivers of the Atlantic seaboard, as a threatened species under the Endangered Species Act (ESA).

Q: Why is the Service proposing to list the yellow lance as threatened?

The Service is proposing to list the yellow lance because the population's downward trend is compromising the species' ability to respond to disturbances. A recent Species Status Assessment report confirm that the yellow lance could face extinction in the foreseeable future unless the Service and its partners collaborate to conserve and bring back this aquatic species.

The proposed listing for the yellow lance is part of the Service's efforts to complete the review of more than 250 species included in a court-approved work plan under a Multi-District Litigation Agreement aimed at addressing a series of lawsuits concerning the agency's ESA listing program. The intent of the agreement was to significantly reduce a litigation-driven workload.

Q: What is the difference between threatened and endangered species?

The ESA describes two categories of declining species of plants and animals that need protection: endangered and threatened. Under the ESA, an endangered species is currently in danger of becoming extinct throughout all or a significant portion of its range, while a threatened species is likely to become endangered in the foreseeable future. After careful examination of the yellow lance's past, present and future conditions, the Service determined the species meets the ESA's definition of threatened.

Q: What is the yellow lance mussel?

The yellow lance is a freshwater mussel species native to the Atlantic Slope drainages in Maryland, Virginia, and North Carolina. The yellow lance occurs in streams and rivers, generally in clean, coarse to medium sands and sometimes in gravel substrates. It is a bright yellow mussel with a shell over twice as long as it is tall, that reaches just over three inches in length. The lustrous inner layer is

usually an iridescent blue color and sometimes has white or salmon color on the shorter end of the shell from where the foot extends (the anterior).

Q: Where is the yellow lance found?

The yellow lance exists in the Patuxent, Rappahannock, York, James, Chowan, Tar, and Neuse River basins in Maryland, Virginia, and North Carolina. It hasn't been reported from the Potomac River in recent years. Number and distribution of populations occupying the remaining seven rivers have declined over the past 60 years.

It is a sand-loving mussel often found buried deep in clean, coarse to medium sand, although it can sometimes be found in gravel substrates. Yellow lances often are moved with shifting sand and eventually settle in the sand at the downstream end of stable sand and gravel bars. This mussel depends on clean, moderate flowing water with high dissolved oxygen. It is found in medium-sized rivers to smaller streams.

Q: What are the threats or stressors to the yellow lance?

It is often found in stable silt-free and detritus free sand and gravel bars; and depends on clean, moderate flowing water with high dissolved oxygen. Threats include:

Fragmented habitat: Dams or culverts limit mussel ability to distribute throughout a stream to occupy quality habitat. Impoundments slow down water and limit the amount of dissolved oxygen.

Development: Paved roads, parking lots, roofs, and even highly compacted soils like sports fields prevent the natural soaking of rainwater into the ground and slowly seeping into streams and alter streams in the following ways:

Increased water quantity: Storm drains deliver large volumes of water to streams much faster than would occur naturally, resulting in flooding and bank erosion. Species living in the streams become stressed, displaced, or killed by the fast moving water and the debris and sediment carried in it.

Decreased water quality: Pollutants (gasoline or oil drips, fertilizers, etc.) accumulate on impervious surfaces and are washed directly into the streams.

Increased water temperature: During warm weather, rain that falls on impervious surfaces becomes superheated and when it enters streams, can stress or kill species living in the stream.

Q: Why don't we have population numbers for the yellow lance?

A wide-ranging distribution and challenges in mussel detection make census or population estimates unattainable for the yellow lance. Instead of using population numbers, experts defined populations by grouping individuals based on watersheds using physical barriers that prevent movement as the boundaries. To assess the status of mussel populations, experts compared occurrences over the landscape over time and found that the yellow lance has lost 57 percent of its historical range.

Q: What conservation efforts are currently being undertaken for the yellow lance?

The Service and state wildlife agencies are working with numerous partners to make ecosystem management a reality, primarily by providing technical guidance and offering development of conservation tools to meet both species and habitat needs in aquatic systems. Land Trusts are targeting key parcels for acquisition, federal and state biologists are surveying and monitoring species occurrences, and recently there has been a concerted effort to ramp up captive propagation and species population restoration via augmentation, expansion, and reintroduction efforts.

In 2014, North Carolina Wildlife Resources Commission staff and partners began a concerted effort to propagate the yellow lance in hopes of augmenting existing populations in the Tar and Neuse River basins. In July 2015, 250 yellow lance mussels were stocked into Sandy Creek, a tributary of the Tar River. Annual monitoring to evaluate growth and survival is planned, and additional propagation and stocking efforts will continue in upcoming years.

Q: How would yellow lance benefit from an ESA listing?

Species listed as threatened or endangered under the ESA benefit from conservation measures that include recognition of threats to the species, implementation of recovery actions, and federal protection from harmful practices. Recognition under the ESA results in public awareness and conservation by federal, state, tribal, and local agencies, as well as private organizations and individuals. The ESA encourages cooperation with the states and other partners to conserve listed species.

The ESA also requires the Service to develop and implement recovery plans for the conservation of threatened and endangered species. Recovery plans outline actions that are needed to improve the species' status such that it no longer requires protection under the ESA. The Service develops and implements these plans in partnership with the species experts; other federal, state, and local agencies; tribes; non-governmental organizations; academia; and other stakeholders. Recovery plans also establish a framework for recovery partners to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Examples of typical recovery actions include habitat protection, habitat restoration, research, captive propagation and reintroduction, outreach and education.

Under the ESA, federal agencies must ensure that actions they approve, fund, or carry out do not jeopardize the continued existence of a listed species or destroy its critical habitat. In addition, under the ESA, threatened and endangered animal species cannot be killed, hunted, collected, injured, or otherwise subjected to "harm." Protected species cannot be purchased or sold in interstate or foreign commerce without a federal permit.

Q: Would water management, grazing, or oil and gas activities in the rivers and streams where the yellow lance is found be affected by the proposed listing?

At this time the Service has only published a proposal to list the yellow lance and the states remain the lead for managing the species. If after reviewing the best available science the Service were to list the yellow lance, it is possible some water management (reservoir release strategies, water conservation measures, avoidance of further habitat fragmentation, etc.) could be needed to ensure the long-term survival of the species. The Service does not expect that livestock grazing or oil and gas development would be impacted.

Q: Why should people care if mussels go extinct?

The disappearance of key species in aquatic food webs can cause unpredictable changes that affect fish, wildlife and people up and down the food chain. When a plant or animal goes extinct, it is like losing a page out of a book. We can never get that page back.

Q: Why are freshwater mussels important?

Mussels are monitors of aquatic health; the presence of diverse and reproducing populations of mussels indicates a healthy aquatic system, which means good fishing, good water quality for

waterfowl and other wildlife species, as well as assurance that our water is safe. When mussel populations are at risk, it indicates problems for other fish and wildlife species, and people too.

Mussels perform important ecological functions. They are natural filters, and by feeding on algae, plankton, and silts, they help purify the aquatic system. Mussels also are an important food source for many species of wildlife including otters, raccoon, muskrat, herons, egrets and some fish. Mussels depend on the same waterways that people value, whether as a water source, favorite fishing spot, recreation area, or for their scenic qualities. Maintaining a healthy environment for mussels helps ensure these areas are available to people as well.

Q: What can I do to help conserve the yellow lance?

Individuals can do a number of things to help protect freshwater species, including:

- Conserving water to allow more water to remain in streams.
- Using pesticides and herbicides responsibly, especially around streams and lakes, to prevent runoff into mussel habitats. Most street drainage flows to nearby streams.
- Controlling soil erosion by planting trees and plants to avoid runoff of sediments into freshwater areas.
- If you live near a stream, be careful not to disturb the stream bottom; you may be damaging freshwater mussel habitat.
- Don't pick up any mussels that you may see in a stream. It may be one of the last few members of its species on the planet.
- Help your family find ways to reduce the number of chemicals that you pour down the drain in your home or use on your lawn or garden.
- Check to see if the water draining off your roof or driveway flushes directly into a stream. Plant a garden to catch the water before it enters the stream. The garden will act as a filter and help purify the water.
- Recycle as much as you can to reduce the amount of waste you place in the garbage.
- Support conservation efforts that protect these unique animals and the habitats they live in.
- Become a biologist and discover new ways to help protect freshwater mussels and other wildlife.
- Learn more about how the destruction of habitat leads to loss of endangered and threatened species and our nation's plant and animal diversity. Discuss with others what you have learned.

- Support local and state initiatives for watershed and water quality protection and improvement.

Q: How can the public submit information on the proposal?

Written comments and information concerning the proposed listing rule will be accepted until June 4, 2017, and may be submitted by one of the following methods:

Electronically: Go to the Federal eRulemaking Portal: <http://www.regulations.gov>. In the Search box, enter FWS-R4-ES-2017-0017, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on “Comment Now!”

By hard copy: Submit by U.S. mail or hand-delivery to Public Comments Processing, Attn: FWS-R4-ES-2017-0017; U.S. Fish & Wildlife Headquarters, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041-3803.

The Service will post all comments on <http://www.regulations.gov>. This generally means the agency will post any personal information provided through the process. The Service is not able to accept e-mails or faxes.

Q: Who can I contact if I need more information?

For additional information, contact Pete Benjamin, U.S. Fish, and Wildlife Service, Raleigh Ecological Services Field Office, 551 Pylon Drive, Raleigh, NC 27636-3726, by telephone 919-856-4520 extension 11. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.