

# RECOMMENDED ACTIONS TO REDUCE IMPACTS TO THE TOPEKA SHINER DURING EMERGENCY FLOOD-REPAIR ACTIVITIES

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South Dakota flood events can put human lives and property at risk and damage infrastructure. State, local, and private entities are challenged after these events to quickly address situations caused by flooding and must often use their own resources to do so. When an official “State of Emergency” or “Disaster” is declared, the cost of remedial actions may be reimbursed by federal agencies. Although other agencies may also play a role, the primary federal agency involved in assisting in the aftermath of such disasters is the Federal Emergency Management Agency (FEMA).

All federal agencies, including FEMA, must ensure their actions comply with federal laws, including the Endangered Species Act (ESA). The U.S. Fish and Wildlife Service (USFWS) administers the ESA and routinely coordinates with agencies to assist them in complying with the ESA. Emergency post-disaster actions require expedited measures so that necessary emergency response actions on the ground are not delayed by this federal process. The USFWS’s policy is to provide recommendations to be applied, whenever possible and appropriate under the emergency circumstances, to reduce the risk of adverse affects to species protected by the ESA.

When flood events occur, one species that may be impacted is the Topeka shiner (*Notropis topeka*). The Topeka shiner is a small minnow (see photo on next page) found in prairie streams within the James, Vermillion, and Big Sioux River watersheds of eastern South Dakota (see attached map). It is currently listed as endangered under the ESA. When flooding occurs in eastern prairie streams, Topeka shiners may be affected not only by the floodwaters, but also by the remedial actions taken after the flood event.

These remedial actions may be separated into two categories. The first is the emergency-phase, which typically occurs immediately following the disaster and encompasses actions that must be taken to address risks to human life and/or property. The second is the non-emergency phase, which is generally after the initial urgency and imminent risk to human life/property has passed, and more time is available to plan and design repair projects.

**The guidance provided below is intended to address emergency-phase projects only. The intention of these guidelines is to reduce short- and long-term impacts to Topeka shiners that may occur as a result of life- and property-saving actions required immediately after an event.**

To determine what may be required during non-emergency actions after a disaster, we recommend contacting FEMA prior to doing any work. In 2019, flood-related disaster declarations prompted FEMA to coordinate with the USFWS to develop a programmatic consultation that addresses impacts to the Topeka shiner. That consultation is specifically for non-emergency repair projects incurred during the 2019 disasters and applies to future disasters that may occur through 2024. Adherence to requirements in that consultation, and documentation of completion of those requirements, can help facilitate eligibility for federal assistance.

Note that any take of federally listed species that occurs during emergency actions will not necessarily be authorized or exempted via an after-the-fact ESA consultation with USFWS.

## RECOMMENDED CONSERVATION MEASURES FOR EMERGENCY-PHASE ACTIONS IN TOPEKA SHINER STREAMS

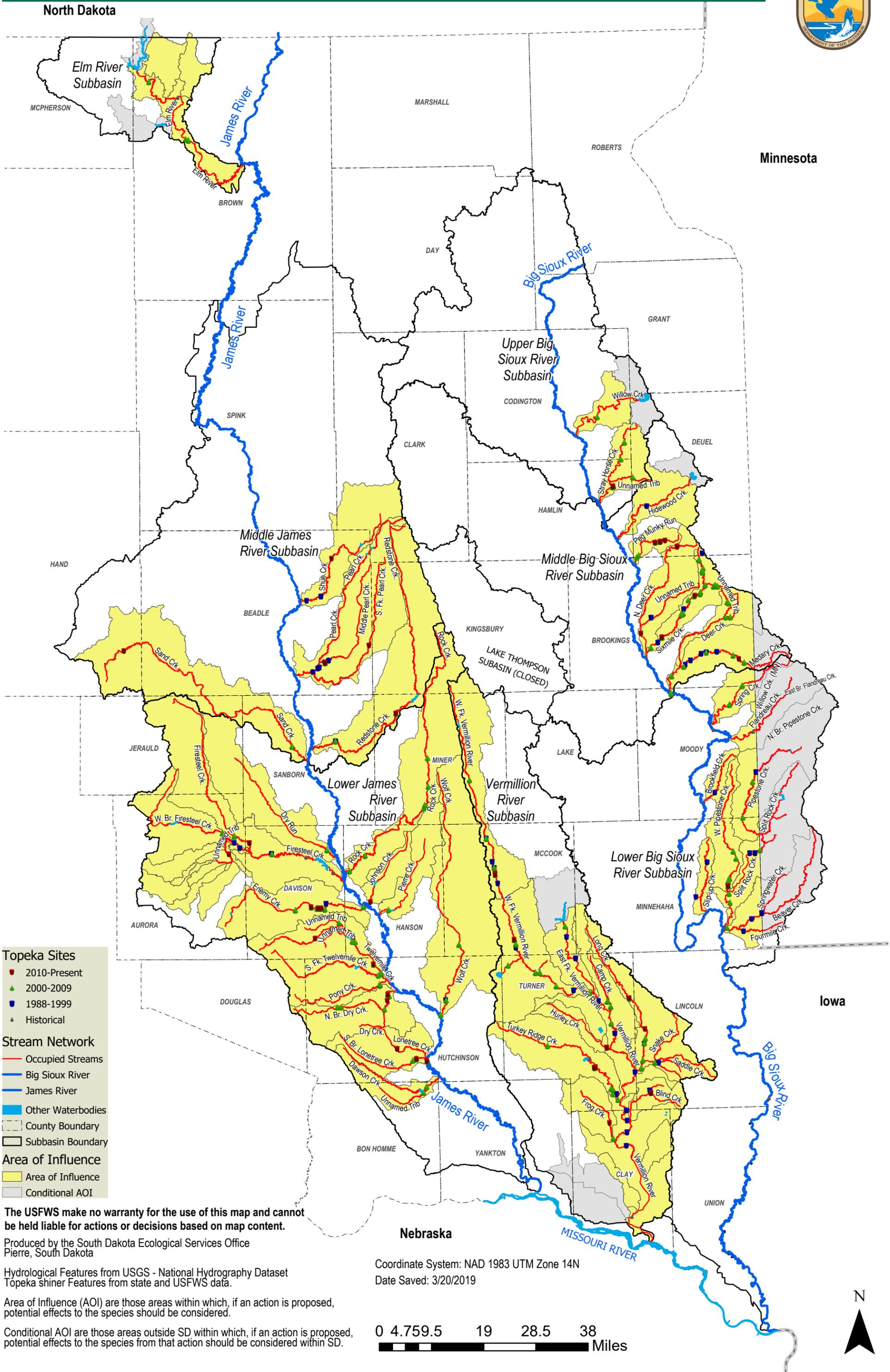


1. **Implement and maintain comprehensive and effective sediment/erosion controls to the greatest extent possible during and after the emergency action(s).** Heavy and prolonged instream sedimentation can be detrimental to the Topeka shiner, and emergency repair activities have the potential to worsen already degraded conditions. Sediment/erosion control measures reduce the risk of additional sediment input to Topeka shiner streams during construction, and similar post-construction measures ensure vulnerable work sites are protected from erosion. Silt fences, silt curtains, geotextile fabrics, and immediate post-construction vegetation seedings are examples of methods address the risk of further degradation. Monitoring and maintenance of these measures may be needed to ensure continued effectiveness, with the goal of keeping sediments from the stream.

2. **Avoid practices that may further and directly damage instream habitat.** In addition to sedimentation and erosion concerns, some instream activities such as driving machinery through streams, excavating streambed materials, channelizing streams, adding fill to streams, and similar direct habitat impacts can negatively affect Topeka shiners. These practices should be avoided. One caveat to excavating streambed materials involves the installation of culverts below grade to facilitate fish passage (see recommendation below); this countersinking measure can be beneficial to the species long-term. In those situations, sediment and erosion control measures mentioned above are needed to prevent further downstream sedimentation.

3. **Whenever possible, install adequately sized stream-crossing structures and repair existing damaged structures in a manner that will not result in long-term fish passage problems.** Topeka shiners have a small body size (usually under 3") and are not strong swimmers. Corrugated metal pipes in particular have the potential to become perched above the stream, blocking Topeka shiner passage and excluding the fish from miles of otherwise suitable habitat. Other factors such as rip-rap installed in the streambed or high water velocity through undersized pipes can have the same barrier effect. Installing structures greater than the bankfull width, and countersinking culverts below the streambed are recommended measures. Analysis of instream morphology may be needed on a case-by-case basis to determine the appropriate countersink depth to preclude structure perching. For many culverts/watersheds, 12" or more countersunk depth may be necessary. If emergency restrictions require that undersized structures be installed above-grade or at-grade level, we recommend revisiting these structures once the emergency has passed and replacing inadequate structures with appropriately designed/placed structures to facilitate fish passage. This will also reduce the risk of future flood damages to structures and subsequent repair/replacement costs.

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**Topeka Sites**

- 2010-Present
- ▲ 2000-2009
- 1988-1999
- ◆ Historical

**Stream Network**

- Occupied Streams
- Big Sioux River
- James River
- Other Waterbodies
- County Boundary
- Subbasin Boundary

**Area of Influence**

- Area of Influence
- Conditional AOI

The USFWS make no warranty for the use of this map and cannot be held liable for actions or decisions based on map content.

Produced by the South Dakota Ecological Services Office  
Pierre, South Dakota

Hydrological Features from USGS - National Hydrography Dataset  
Topeka shiner Features from state and USFWS data.

Area of Influence (AOI) are those areas within which, if an action is proposed, potential effects to the species should be considered.

Conditional AOI are those areas outside SD within which, if an action is proposed, potential effects to the species from that action should be considered within SD.

Coordinate System: NAD 1983 UTM Zone 14N  
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