



Conservation Practice Overview

November 2022

Aquatic Organism Passage (Code 396)

Aquatic organism passage (AOP) is the modification or removal of barriers that restrict or impede movement of aquatic organisms.

Practice Information

Aquatic organism passage (AOP) projects include a range of actions and structures that remove or modify barriers impeding the movements of aquatic species. The AOP standard addresses the functional and physical conditions of a stream corridor to enhance habitat, provide management options that enhance long-term stream function, and improve aquatic organism populations by restoring access to habitat. Successful planning and completion of an AOP project is made possible by an interdisciplinary team of biologists, engineers, and other specialists. The AOP standard applies in all aquatic habitats where barriers prevent migration or movement, including streams and rivers as well as tidally influenced settings. Barrier removal often provides the best mix of passage quality and geomorphic function.



Passage solutions are designed after site investigations to determine variations in stage and discharge, tidal influence, hydraulics, geomorphic impacts, sediment transport and continuity, and organic debris movement. A key element is designing the structure to fit within the context of the site.

Additional measures to mitigate undesirable channel plan or profile shifts resulting from the modification or removal of a passage barrier may be necessary. Further, working in and around water can involve a number of different regulatory agencies, and work windows to protect sensitive life stages that may govern construction timing.

Applications covered by this practice may include but are not limited to culverts (pipe, bottomless, and concrete), low water crossings, bridges, fish ladders, dam removals, nature-like fishways, tide gates, and screens at irrigation diversions.

Operation and maintenance requirements include sediment and debris removal, gate adjustments to control flow, periodic inspections with prompt repair of damaged components, and monitoring to ensure the continued success of the practice.

Common Associated Practices

Aquatic Organism Passage (396) is commonly applied with conservation practices such as Stream Habitat Improvement and Management (395), Stream Crossing (578), Streambank and Shoreline Protection (580), Channel Bed Stabilization (584), and Tree/Shrub Establishment (612).

For further information, contact your local NRCS field office.