

# Connecticut River Aquatic Habitat Connectivity

## Fish Passage in the White River Watershed

Howe Brook at Oak Lodge Rd, Rochester Vermont



Before



After

**Left:** A view of the Howe Brook culvert outlet on Oak Lodge road showing the emergency replacement culvert with minimal fish or aquatic organism passage. **Right:** New Howe Brook culvert at the Oak Lodge road crossing designed for fish and aquatic organism passage as well as flood resiliency.

**Site description:** Howe Brook in Rochester Vermont is a headwater tributary to the White River and supports a thriving fishery including Atlantic salmon and a wild brook trout population. In combination with the repairs to another road crossing structure downstream on Howe Brook, this new culvert will eventually allow native brook trout to access 2.4 miles of critical thermal refugia and spawning habitat.

**Problems / history:** Multiple culverts in Rochester Vermont were in need of emergency repair following the flooding from tropical storm Irene in August of 2011. Following tropical storm Irene many of the emergency fixes were designed to quickly open roads for vehicle traffic, but not always allow for fish and aquatic organism passage. Working closely with FEMA and the town of Rochester the US Fish and Wildlife Service has provided technical assistance, engineering designs, and project over site to ensure projects allow both fish and aquatic organism passage.

**Partners and Funding:** Funding and support for this project came from the US Forest Service, FEMA, Town of Rochester, White River Partnership, and the US Fish and Wildlife Service.

<u>Cost:</u>	<u>USFWS</u>	<u>FEMA</u>	<u>USFS</u>	<u>TOTAL</u>
	\$5000 (in-kind)	\$8000	\$39,950	\$52,950

**Fish and AOP Passage:** Before culvert replacement began fish biologists from the US Fish and Wildlife Service captured and marked fish downstream from the culvert with a fin clip. After the new culvert was installed, biologists returned and collected fish above the new structure and found fish that had a fin clip showing that they had passed through the culvert.

Pre-construction: 15-Aug
41 Brook Trout collected
Adipose clipped
Capture/Release within 100ft downstream

Post-construction: 11-Sept
20 Brook Trout collected
1 Adipose clipped: 135 mm
Collected within 100ft upstream