Testimony of Jared Carpenter
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Before the House Natural Resources, Fish, and Wildlife Committee
On H.92 An act relating to the registration of dams
February 14, 2017

Mr. Chairman and Members of the Committee, thank you for the invitation to testify on an issue of importance to the members of Vermont Trout Unlimited. My name is Jared Carpenter and I testify today in my capacity as the National Leadership Committee Representative of the Vermont Council of Trout Unlimited. The mission of Trout Unlimited is to conserve, protect, restore, and reconnect North America's coldwater fisheries, particularly protection of native coldwater fish species.

Vermont Trout Unlimited consists of approximately 1,200 members in five chapters throughout the state, in all counties and touching all corners of Vermont, including the Central Vermont Chapter, the Southwestern Vermont Chapter, the Connecticut River Valley Chapter, the Greater Upper Valley Chapter, and the MadDog Chapter. The Vermont Council is the statewide organization that assists the Chapters and advocates for specific policies to protect coldwater fisheries. The National Office is based in Arlington, VA.

I testify today in support of H.92, an act relating to the registration of dams. It is important for public safety and environmental restoration to have all dams in the state registered and inventoried so they can receive regular inspections, get proper maintenance and repair, and if need be, removed, to protect public safety and restore Vermont's streams and rivers.

A key part of TU's mission is the reconnection of coldwater fisheries, namely working to ensure continuous rivers and streams devoid of barriers that impede aquatic habitat. Restoring and protecting water quality will not ensure a healthy population on its own; fish species need to be able to migrate and spawn to produce a healthy, sustainable population. The protection of coldwater fisheries, particularly smaller streams and headwaters, is only as effective as the passage and migration of aquatic species.

A brief dam history: New England was of course one of the first regions of the United States to be extensively settled by Europeans. It was a largely agrarian society and the inland

areas of the region consisted initially of subsistence farmers.[1] These hill communities utilized the many rivers and smaller streams in the region, including damming them for power generation and other commercial uses, particularly as a market grew in the more populated urban centers of New England for rural products and commodities in the early 19th century.[2] But this demand did not last long, as industrialization and the expansion westward virtually eliminated the need for rural New England goods by the late 1800s.[3] The people left, but the infrastructure remained, including thousands of small dams across New England.

Many dams certainly serve useful purposes, including power generation, flood control and recreation. But even these dams that have a beneficial use cause environmental harm. The most obvious impact on aquatic habitat is that the dam acts as a physical barrier to migrating fish, preventing passage both up and down stream. Dams also alter the chemical makeup of the waterway, changing water temperature, dissolved oxygen, and turbidity due to sedimentation. The reservoirs behind larger dams are often a source of cold water in the summer as water is discharged from the bottom of the reservoir. However, a common impact with smaller dams is an increase water temperature, which directly impacts the coldwater fishery in the river below the dam. Often, these older dams have years of sedimentation built up behind the dam, raising the bed of the stream until the pool behind the dam could be less than a foot deep. During the summer, this pool can warm considerably and cause significant harm to the fishery below due to this warmer water spilling over the dam.

But the biggest impact of dams on river ecosystems is fragmentation. Dams are the primary reason for the disconnection of rivers, streams and headwaters. And this is not just large dams, but literally hundreds of old mill dams, ice ponds dams and other small structures that have clogged the smaller streams and headwaters that are important for healthy fish species and aquatic ecosystems. It is estimated that there are approximately 1,000 dams of all sizes on Vermont waterways. The sheer number of these dams causes long-term impacts on Vermont water quality and harm local fisheries. On average, it is estimated that there are 14 dams per 100 stream miles in the New England and New York.[4]

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[1] Peter Thorbahn and Stephen Mrozowski, *Ecological Dynamics and Rural New England*, Anthropology Research Reports series, University of Massachusetts – Amherst (1979) 130.
[2] *Id.*
[3] *Id.*
[4] Anderson, M.G. and A. Olivero Sheldon. 2011. *Conservation Status of Fish, Wildlife, and Natural*

All dams in Vermont need to be registered and inventoried. This will allow the state to categorize them, know who owns the dam, and get all dams on a regular inspection schedule. As a matter of public safety and to protect and reconnect our waterways, we need to have a better understanding of the scope of the issue. With this, we will also have a sense of who owns the dams and therefore who is responsible for their maintenance and any damage that occurs if the structure fails. Some landowners don't even realize the dam is their responsibility. The person that derives the benefit of the dam should pay the maintenance and repair costs, not the general taxpayers. The shift to owner responsibility may lead to removal of the dam and reconnection of our streams and headwaters, as it will then be up to the owner to see if the benefits the dam provides are worth the cost.

In conclusion, while many dams have a public benefit, such as power generation, flood control, or recreation, there are many old crumbling dams in need of repair or removal. These may be threats to the public safety of those downstream and cause harm to the environment by fragmenting aquatic habitat. Registration and inventory of all the dams in the state will aid in inspection and will identify owners that can then decide if the costs of repair and maintenance are worth the benefits.

Habitats in the Northeast Landscape: Implementation of the Northeast Monitoring Framework. The Nature Conservancy, Eastern Conservation Science. 7-17.