

## **Dams in the Champlain Valley Speaker Series 2021 Curriculum Guide: Introduction**

### **Curriculum Guide:**

This material is meant to help guide students through the four presentations being put on by the Lake Champlain Maritime Museum between March and May. The talks will focus on watershed science as it relates to dams in our region. As a subject, dams offer many opportunities for individualized learning and personalized research about watershed science in a student's local area. This document is designed to help generate questions about the topic as well as suggest other related topics and sources of information. We hope that you will be able to join us for these four presentations to learn about a complex and multi-faceted topic directly from those who work in the field!

#### **1. Thurs March 25<sup>th</sup>, 4-5pm, Roy Schiff, Water Resource Engineer**

*Removing Obsolete Dams in the Lake Champlain Basin – VT and NY Case Studies on Past Uses and How to Remove Failing Structures*

#### **2. Thurs April 8<sup>th</sup>, 4-5pm, Karina Dailey, Restoration Ecologist**

*A Collaborative Approach to Reconnecting Rivers and Restoring Ecosystems*

#### **3. April 22<sup>nd</sup>, 4-5pm, Jacob Fetterman, Trout Unlimited Project Coordinator for Battenkill Home Rivers Initiative**

*Citizen science and recreational connection to dams and river obstruction - Trout Unlimited's digital mapping effort and why it's important*

#### **4. May 6<sup>th</sup>, 4-5pm, Julie Butler, Fish Biologist with the Fisheries and Aquatic Conservation branch of the USFWS**

*Free Range Rivers for Aquatic Wildlife: Why is aquatic organism passage important and how do we get there?*

### **Introduction: What is a dam?**

Dams are large constructions that alter and hold water along a stream or river, created with timber, concrete, cement, or other materials. A dam creates a reservoir of water upstream and allows for the controlled release of water below the dam. Beavers naturally construct dams along smaller waterways in order to augment their environments, and human communities have constructed obstructions in waterways since ancient times. By controlling water in streams and rivers, dams allow people to generate cheap and renewable energy for electricity or carry out other types of mechanical work.

Dams can provide valuable services to communities in the Champlain Valley, including providing cheap and efficient power generation, flood control along some waterways, irrigation and water supply services, and navigation or recreational opportunities. But because dams are designed to substantially alter the waterways on which they are constructed, they can have large and complex impacts on their surrounding landscape. These positive and negative impacts have been recognized as long as dams have been built and can make dams a controversial subject of discussion for many communities.

For more information about dam uses and types see:  
"Dams, engineering, and Technology."  
National Geographic.com.  
<https://www.nationalgeographic.com/environment/article/dams-engineering>  
"Benefits of Dams & Levees." USSDams.org.  
<https://www.usstdams.org/dam-levee-education/overview/benefits-of-dams-levees/>

The Champlain Valley contains a multitude of dams, of different types, ages, sizes, and conditions, and each can affect the watershed in a different way. Careful examination is needed to decide how to treat an individual dam. Some dams continue to provide valuable services to communities in the valley, while others present strong arguments for removal, either because of their age and expense to keep up, or because they now pose environmental challenges.

The watershed professionals and scientists speaking in this series will offer their expertise about dams and discuss how dams affect and can be made to function better within our watershed. In many cases, where dams have been removed or have been deemed necessary to remove, the work of watershed professionals revolves around restoring habitat connectivity and ecosystems. The work of monitoring and maintaining dams is also costly, complicated, and requires a diverse set of skills and expertise.

See this for some introductory information historical dams:  
Dams. Lake Champlain Basin Atlas.  
<https://atlas.lcbp.org/people-economy/transportation/dams/>

See these links for some introductory information historical dams:  
Tim Rowland, "Historic Dam in Danger." <https://www.adirondackexplorer.org/stories/historic-dam-in-danger>  
"Waterbury Dam." VermontHistory.org. <https://vermonthistory.org/waterbury-dam>

## **Bibliography**

Intro: information about dam uses and types

- "Dams, engineering, and Technology." National Geographic.com. National Geographic, 2021. Accessed 3/22/21. <https://www.nationalgeographic.com/environment/article/dams-engineering>
- "Benefits of Dams & Levees." Dams and Levees Education, USSDams.org. USSD, U.S. National Committee of ICOLD, 2021. Accessed 3/13/21. <https://www.usdams.org/dam-levee-education/overview/benefits-of-dams-levees/>

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- Dams." Lake Champlain Basin Atlas. Lake Champlain Basin Program, 2021. Accessed 3/22/21. <https://atlas.lcbp.org/people-economy/transportation/dams/>

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- Rowland, Tim. "Historic Dam in Danger." AdirondackExplorer.org, March 24, 2020. Adirondack Explorer, 2021. Accessed 3/22/21. <https://www.adirondackexplorer.org/stories/historic-dam-in-danger>
- "Waterbury Dam." VermontHistory.org, Video Date 9/10/2020. Vermont History. Accessed 3/22/21. <https://vermonthistory.org/waterbury-dam>