Whitewater Paddling Releases on the West River

Vermont Fish and Wildlife Department; September 2004

What is the concern associated with the whitewater paddling release?

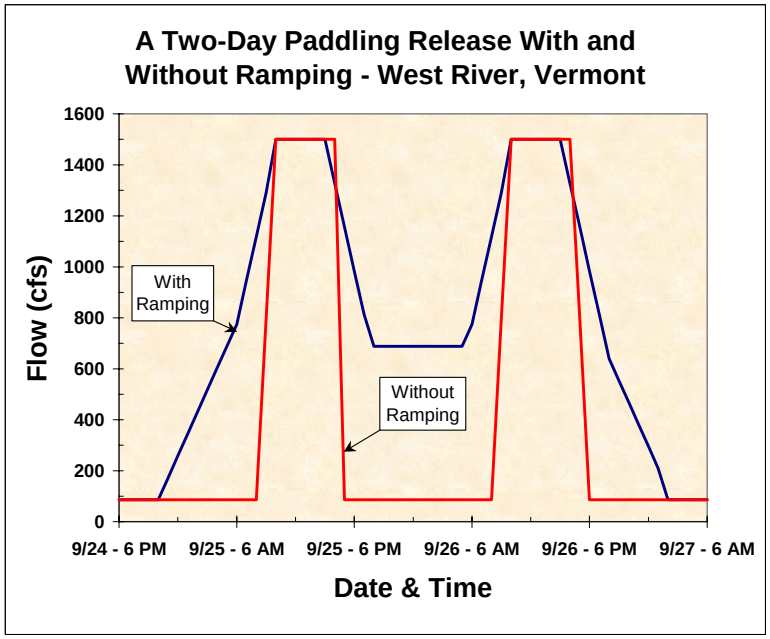
In the past, the paddling release has been turned on and off like a faucet, resulting in very rapid increases and decreases in the river flow. These abnormally rapid changes create problems for fish and other aquatic life in the river because they cannot react quickly enough to the changing conditions. Perhaps the most obvious impact is stranding. Fish get stuck in the rocks and left high and dry when the water levels drop rapidly (such as upon completion of the paddling release). The rapid increase in flow associated with the beginning of the paddling release is also a concern. Aquatic insects and mussels living on the bottom become dislodged, and along with smaller fish, are dislocated. This situation is not unlike the difficulty a paddler experiences when faced with an unexpected swim down a rapid. It's hard to find and get to shelter, and it saps your energy.

What characteristics of the release are of concern?

The magnitude of the 1500 cfs paddling release is acceptable. Natural river flows of this amount are not unusual during the spring and fall. The concern is with how fast the river flow is increased and then decreased again. To lessen the extent of the disturbance to aquatic organisms caused by a two-day release (a rapid flow drop at the end of day 1 followed by a rapid increase just hours later), the overnight flow should not be lowered beyond a certain point.

What is ramping?

In order to address the problems associated with overly rapid transitions on each end of the paddling release, the release can be changed in small steps over a specified period of time. This is called "ramping," because the flow is ramped up to the paddling release and then ramped down afterward.



Has the Agency of Natural Resources recommended ramping protocols to minimize the negative impacts of the paddling release on aquatic organisms?

Yes, ANR developed ramping rates that mimic the rates at which flows change naturally before and after a heavy rain. Flow data from a gage on the nearby, unregulated Williams River were used to develop the protocol. The logic is simple: aquatic organisms have become adapted to the dynamic character of the natural flow regime, so ramping that is similar to what occurs in nature should be fine.

Why is a two-day release in September no longer assured?

The second day has always been weather-dependent, although the need for ramping means that enough water will only be available in years when a lot of rain falls within a few days prior to the release. It takes more water to change flows at a slower, environmentally sound rate, and that means less water is available for

paddling releases. Ball Mountain Reservoir is much smaller in size than Army Corps reservoirs that support famous paddling releases in other parts of the country, such as the Gauley River in West Virginia.

If there isn't enough water for the release with ramping, why can't more water simply be stored in the reservoir?

There are a couple problems with trying to fill the reservoir up more. The reservoir is lowered in the spring to provide the spring paddling release. Refilling the reservoir is problematic when natural flows into the reservoir are low. The second problem is that filling the reservoir to higher levels floods out more of the river upstream, as well as upland areas, negatively affecting those resources.

Doesn't the U.S. Army Corps of Engineers manipulate river flows year around to such an extent that the whitewater paddling release represents little additional impact?

There have been a number of flow-related problems associated with Ball Mountain and other Vermont dams operated by the U.S. Army Corps of Engineers. However, the Corps, Vermont Fish and Wildlife Department, Vermont Department of Environmental Conservation and U.S. Fish and Wildlife Service are working cooperatively to resolve them. The paddling release is only one of a number of areas being worked on. For example, the same ramping protocol used during the paddling release will now be applied at all times, unless the project is in flood control mode, which generally happens a few times a year and is still under discussion. Other issues include low flow management, flow maintenance during conduit inspections and more.

Have site-specific studies been done that document environmental damage to the West River?

These studies have not been conducted, because they would be very expensive, requiring considerable field work to be done over a period of years. But, we are not inventing the wheel here. Many studies have been done elsewhere in the U.S. and in other countries. There is a large body of scientific evidence about the relationship between flows and aquatic resources. The effects of rapid changes in stream flows are known. An expensive study could be done but it is unrealistic to expect that it would show "no impact." Typically, the burden of proof is on a water user to demonstrate that the proposed activity will not harm the public resources.

Is there a concern about the spring release too?

The concerns are the same but because the river flow is much higher in the spring, there is almost always enough water for a two-day release with proper ramping.

Is this a choice between the paddling release and the environment?

It must be recognized that special releases are not without their harmful effects. However, an attempt has been made to enable the paddling releases to occur in a way that reduces their environmental impacts. This means that in most cases the spring paddling release will be a two-day event and the fall paddling release will be a one-day event. In addition to enjoying their sport, most paddlers are river stewards and support natural resource conservation.