

Revised Missing Addendum!

The following section is missing from the draft Poultney Mettowie Basin Plan. This section belongs between the bottom of column two on page 50 and the top of column three on page 50.

GOAL: Continue to identify ways to minimize thermal modification of the Mettowie by increasing shading that will improve the aquatic habitat of the cold-water fishery.

| <u>Objectives</u> |
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| Listed from highest priority |
| ① Increase shading in critical areas to help lower water temperatures. |
| ② Manage the River to Promote Geomorphic and Streambank Stability. |
| ③ Reduce water temperatures entering the mainstem from Flower Brook. |

OBJECTIVE ①: Increase shading in critical areas to help lower water temperatures.

STRATEGIES:

When trees and shrubs are removed along the banks of a stream, the new exposure to sunlight can cause significant increases in water temperature, especially during periods of low flow. Riparian plantings are expected to provide additional shading in critical areas to help lower water temperature in the Mettowie River Basin.

- 1 Re-establish riparian vegetation along the banks of the Mettowie.
Lead Agency/Organization: PMNRCD
Partners: USDA-NRCS, USFW, PMWP, VTDEC, GMC, VYCC, riparian landowners.
Potential funding sources: State (319) and federal (CREP) cost-share programs.
Time frame: Ongoing
Benchmark: Increase in linear riparian buffer planting of 5,000 feet along the Mettowie riparian corridor (and/or Flower Brook) by 2005.
- 2 Work with landowners and state and federal programs to install fencing along the river to keep livestock out of surface waters and stabilize streambanks. A riparian buffer will be re-established to reduce elevated water temperatures in the Mettowie River (and its tributaries) from increased shading. In order to implement this objective, the buffer outreach project seeks to provide information and outreach to all riparian landowners within the Mettowie watershed.
Lead Agency/Organization: PMNRCD, PMWP
Partners: VTFWD, VTDEC, AAFM, Towns, and riparian landowners
Potential funding sources: EPA 319, LCBP WAGs, PMWP grants.
Time frame: Ongoing
Benchmark: Increase awareness of the benefits of buffers for riparian landowners over the next 5 years.

OBJECTIVE ②: Modify the river channel to promote bank stability.

STRATEGIES:

The Vermont Rivers Management Program has recently established river and stream geomorphic assessment protocols to be used throughout the state in assessing the stability of rivers and streams. The value of conducting geomorphic assessments to prioritize potential areas for restoration is becoming well known and widely adopted by river managers. Ultimately, the overarching goal of conducting geomorphic assessments is to resolve conflicts between human structures and activity and river dynamics in the most economically and ecologically sustainable manner.

- 3 Following completion of Phase 2 geomorphic assessment of the Poultney Mettowie River Watersheds, conduct Phase 3 Geomorphic Assessment of Mettowie and tributaries, especially Flower Brook.
 - Lead Agency/Organization: VTDEC – Rivers Management Program
 - Partners: Rutland Regional Planning Commission, Castleton State College, PMWP, PMNRCD, Towns, riparian landowners, and other technical resource agencies.
 - Potential funding sources: Better Backroads Program, DEC grant programs
 - Time frame: Ongoing
 - Benchmark: The completion of geomorphic assessment workshops in the basin for natural resource managers, town officials, academics, and riparian landowners.

- 4 Based on geomorphic assessments and alternatives analysis, undertake channel adjustment and/or restoration projects. Narrowing the Mettowie River channel is predicted to be effective in reducing maximum water temperatures. In addition, channel modifications could provide deeper, cooler pools in which fish could seek refuge during temperature events.
 - Lead Agency/Organization: PMNRCD
 - Partners: VTDEC, USFW, USDA-NRCS, PMWP, riparian landowners.
 - Potential funding sources: State (319) and federal cost-share programs and grants.
 - Time frame: Ongoing
 - Benchmark: Where possible, install natural channel design treatments to over-widened reaches of the Mettowie River to stabilize riverbanks and enhance cooler water temperatures and flow.

OBJECTIVE ③: Reduce water temperatures entering the mainstem from Flower Brook.

STRATEGY:

The water temperature of Flower Brook is higher than that of the Mettowie River. As plans to cool the waters of the Mettowie are implemented, the increased heat load contributed by this tributary will become significant. Therefore, possible management scenarios that could reduce water temperature in Flower Brook should be designed, evaluated, and implemented. Possible management actions include increased riparian shading and stabilizing eroding streambanks.

- 5 Reduce the water temperature entering the Mettowie River from Flower Brook through enhanced riparian buffer vegetation (shading) and managing toward channel geometry and stability that will support deeper channel cross-sections.
 - Lead Agency/Organization: DEC

Partners: PMNRCD, USFW, USDA-NRCS, RRPC, Poultney Mettowee Watershed Partnership, towns, and landowners along the Flower Brook sub-basin.
Potential funding sources: EPA 319, LCBP WAGs, USFW, USDA-NRCS cost-share, PMWP
Time frame: Ongoing
Benchmark: Reduce mean summer water temperatures in Flower Brook by 5°F over the next 5 years.

FISHERIES

Several fishery concerns have recently emerged over the last few years. Perhaps of greatest concern for the health of trout fisheries is the appearance of whirling disease in the Batten Kill. The New York Department of Environmental Conservation informed Vermont Fish and Wildlife Department biologists in June of 2002 that whirling disease was found in trout captured in the New York section of the river. According to the Whirling Disease Foundation in Montana, the disease is a parasitic infection that attacks juvenile trout and salmon. The parasite, *Myxobolus cerebralis*, embeds in the head and spinal cartilage of fingerling trout and multiplies rapidly, putting pressure on an organ in fish that regulates equilibrium. The diseased organ causes fish to swim erratically -- or whirl -- and have difficulty feeding and avoiding predators. In severe infections, the disease can cause high rates of mortality in young-of-year fish.

One additional concern regarding fisheries that continues to pose a long-term challenge has been the introduction of an invasive baitfish species, alewife to Lake St. Catherine. First discovered in July 1997, the population in Lake St. Catherine is likely a result of an illegal stocking (Good, personal communication). Based on the impacts that exotic alewives have had on native ecosystems in other lakes, we can predict the specific impacts they are likely to have in Lake St. Catherine. The main impacts of alewives will likely result from competition for zooplankton and predation on eggs and larvae of other fish. As long as alewives remain contained within Lake St. Catherine, some form of management to deal with them is available. However, if alewives were to spread to Lake Champlain and other Vermont waters, there are few options other than living with them. The Vermont Fish and Wildlife Department has been stocking the lake with brown trout, which are aggressive feeders on alewives.