

State of Vermont
Water Resources Board

RE: Batten Kill
Docket No. 89-02

Authority 10 V.S.A. § 1424a

Findings of Fact, Conclusions of Law and Order

The Vermont Natural Resources Council (VNRC) and Trout Unlimited petitioned the Water Resources Board (Board) to designate the Batten Kill and the West Branch of the Batten Kill (Batten Kill or Kill unless stated otherwise) as Outstanding Resource Waters (ORW).

Upon consideration of the evidence in the record the Board, on January 8, 1991, designated all portions of the main stem of the Batten Kill and the West Branch as ORWs, pursuant to 10 V.S.A. § 1424a, because of their exceptional natural, recreational, cultural, and scenic values.

Findings of Fact

1. The waters for which designation is sought are described in the applicant's petition as follows: "[T]he main stem of the Batten Kill from its headwaters in East Dorset and the West Branch."
2. On November 29, 1990, the Board conducted a hearing on the petition to designate the Batten Kill as an ORW. Upon motion at the hearing the petition itself was entered into the record as evidence.
3. No party at the hearing entered an appearance in opposition to designating the Batten Kill as an ORW. All prefiled testimony and all oral testimony at the hearing was entered in support of the designation.
4. By letter filed December 13, 1990, the Arlington Board of Selectmen, who were present at the hearing, requested that the Board not designate the Batten Kill as an ORW until certain listed problems have been corrected.

Natural Values

5. Both the Batten Kill and the West Branch have exceptional natural values that merit designation.
6. From its headwaters in East Dorset the Batten Kill runs approximately twenty-six miles to the New York border at Arlington, Vermont. The Kill runs through a variety of physiographic and geologic settings. Both the main stem and the West Branch flow in a series of pools and riffles through open fields and woodlands with much natural vegetation.

7. The waters of the Batten Kill flow through the Dorset marsh; one of four cold-water wetlands identified in the state.
8. The Batten Kill is an exceptional fishery because of its ability to provide high-quality habitat for brook trout and brown trout. This exceptional habitat is provided by the confluence of several natural features in the same river. These features include: comparatively high summer flows, limestone in the drainage, extensive gravel beds for spawning, good shade along the banks, stable banks only occasionally subject to serious erosion and sedimentation, consistently cold summer water temperatures, a well vegetated watershed with minimal nutrient and sediment pollution, and a naturally reproducing brook trout and brown trout fishery.
9. The comparatively high summer flows and correspondingly cool water temperatures are due to the numerous springs which contribute to the flow of tributaries and occur in the stream bed itself. The springs in Beebee's meadow at the headwaters of the main stem are complemented by the Big Allen spring across the West Road in Dorset and the McNamara spring at the head of McNamara Road feeding the West Branch.
10. While the water quality of the Batten Kill was characterized in general terms to establish its value for fish habitat, there was no specific evidence provided to establish the existing water quality of the river's waters. No scientific analysis or study was offered to verify or assess applicable water quality criteria, including temperature, dissolved oxygen, Escherichia coli, color, turbidity, or alkalinity. There was no evidence to show the Batten Kill is a pristine river. No such specific background data was provided by any party to this proceeding. Therefore, the Board is unable to find that the Batten Kill is exceptional for its existing high water quality (i.e. composition, chemistry). However, in general terms the Batten Kill water is clean.
11. The river has stable flows, cool water temperatures favorable to salmonids, good physical habitat providing necessary cover, refuges, spawning and rearing habitats, as well as the food quality and quantity necessary to support a healthy salmonid population.
12. The several springs are also responsible, at least in part, for reducing winter icing on the Kill, which in turn, reduces entrapment and winter mortality of fish. Additionally, the moderating influence of the groundwater sources along the Kill make it one of the few rivers in Vermont that can be canoed throughout the winter.

13. The following habitat components make the Batten Kill an exceptionally high quality trout stream.

Fish Habitat

A. Water quality and quantity.

1. Adequate dissolved oxygen concentrations.
2. High dissolved mineral content.
 - a. Increased aquatic productivity.
 - b. Increased buffering capacity.
 - c. Trace elements for fish health and growth.
3. Low levels of point and nonpoint pollution sources.
4. Relatively stable seasonable flows.
 - a. No feast or famine flows.
 - b. Constant groundwater input.

B. Moderated water temperature.

1. Summer: 60-70 F Rarely exceeds 70 F for long periods. Colder groundwater inputs provide summertime temperature refuges.
2. Winter: minimal ice problems. Groundwater inputs provide a moderating influence which minimizes anchor and frazil ice problems.

C. Fish cover and refuges.

1. Good riffle - pool/run ratio over most river segments.
2. Deep pool habitat.
3. Abundant riparian vegetative cover.
4. Instream structures provided by woody debris, aquatic vegetation, boulders, and overhanging banks.

D. Spawning and rearing habitats

1. Abundance of good, clean gravels in the main river and tributaries.
2. Few fish passage obstructions.
3. Abundance of juvenile trout "nursery" habitat.

E. Food quantity and quality.

1. Rocky bottom riffle habitat provides for adequate production of aquatic invertebrates.
2. Good fish community structure including forage fish populations.
3. Abundant riparian vegetation food sources.
4. No significant predatory fish populations other than trout.

14. The valley through which the Batten Kill runs is neither highly agricultural nor highly urbanized. There are substantial buffers separating fields and roads from the river, and there are extensive glacial terraces and swamps between the steep parts of the watershed and the river itself. These terraces and swamps detain stormwater and make the river less 'flashy' -- less prone to abrupt rises during storms -- and consequently less subject to destructive bank erosion and high sediment loads.
15. The Batten Kill's clean water is biologically important because the most diverse and productive aquatic insect communities are associated with streams with cobble or gravel bottoms and well-oxygenated water. This is especially true for mayflies and stone flies, both major foods for trout. The consistent summer flows of the Batten Kill are also very important for aquatic insects, in particular the larger mayflies and stone flies.
16. The Batten Kill is a quick-water stream with slopes in the 15-20 feet per mile range and hence has many riffles and mild rapids. Streams with abundant riffles and good summer flows have lots of good habitat for mayflies and stone flies and thus tend to have the highest populations of these insects.
17. The natural vegetation along the banks of the Kill shades the channel and keeps the summer temperatures down.
18. The Batten Kill is, essentially, a limestone stream. The limestone is found in the upper and middle parts of the watershed. The limestone has two main effects: it neutralizes organic and inorganic acids that have deleterious biological effects, and it is itself an important nutrient for many plants and animals. Limestone streams invariably have more diverse shoreline plant communities than non-limy streams, have more abundant and diverse stream insect communities, and thus are able to support larger and more rapidly growing fish populations.
19. There is a sewage treatment plant in Manchester with a 200-foot, Class C zone. The treatment plant is relatively small, discharging into a well-vegetated segment of the stream likely to absorb substantial amounts of the nutrient load. There is no numerical or verifiable evidence in the record to substantiate what effect the sewage treatment plant in Manchester has on the actual water quality characteristics of the Batten Kill.
20. The Batten Kill provides exceptional wildlife habitat. In particular, it provides an extensive riparian habitat for a wide range of wildlife. Riparian habitats associated with lakes, rivers, and streams provide valuable habitat for those wildlife species requiring or preferring a combination of terrestrial and aquatic habitats.

21. The Batten Kill floodplain provides a diversity of extremely productive wildlife habitats that are locally, if not regionally, significant. The Kill seasonally floods numerous associated wetlands that provide even greater habitat edge and diversity. The number and diversity of wetlands associated with the Batten Kill contribute to the exceptional natural value of the Kill.
22. The Batten Kill which winds through agricultural and forested lands provides a juxtaposition of aquatic and terrestrial habitats for food and cover. Rare plant species have been identified along the Kill.
23. The diversity of habitats associated with the Batten Kill cumulatively provides for a high diversity of wildlife species. The productivity of habitat provides a base for a high density of animals.
24. Threatened or endangered species including the black-backed woodpecker, osprey and northern harrier, have been found along the Batten Kill. Additionally, the river provides habitat for the black duck, the wood duck, the merganser, the great blue heron, the green heron, the Canada goose, the cliff swallow, the cedar waxwing, the woodcock, and several varieties of warblers. Beaver, mink, otter, deer, fox, coyote and muskrat also are found along the river.
25. The Batten Kill flows within the valley between the Taconic and Green Mountain ranges; a north-south valley. North-south valleys, like the Batten Kill, are natural migratory routes for aquatic-associated species such as waterfowl, shorebirds, some passerines and others, including woodcock. The Batten Kill provides important resting and feeding sites for these species during their spring and fall migrations.
26. The river's flow rate varies in seasons and locations. The slower moving waters enable furbearing species such as beaver, mink, and muskrat to occupy the banks of the river. The adjacent wetlands enhance the quality of the riparian ecosystem for these species. Additionally, the river itself is a viable habitat, particularly at the river's headwaters.
27. The high-quality fisheries of the river provide a significant food source for many of the wildlife species living in and along the river. In particular, mink, river otter, and raccoon prey on the fish, frogs, crayfish and reptiles within the river.
28. The riverbanks provide a diverse combination of both shrubs and mature trees for nesting, perching, and feeding for birds as well as suitable cover for mammals.

29. The meandering nature of the river creates sites of sandy shoals and cut banks that are often exposed at lower water levels, allowing wildlife species to rest, and sometimes nest, directly adjacent to the waters' edge.
30. Riparian ecosystems provide habitat for more species than either rivers, wetlands, or uplands by themselves. The riparian ecosystem of the Batten Kill -- the association of river and wetland found along the river -- provides some of the most diverse and productive wildlife habitat available in the state.

Recreational Values

31. Both the Batten Kill and the West Branch have exceptional recreational values that merit designation.
32. The Batten Kill is secluded. Despite its proximity to a moderately developed area and that it is adjacent to two major roads, there are many segments from which one cannot see settlement or roads. This privacy is valued by many users of the Batten Kill. Among rivers that have enough flow to support summer fishing and boating, the Batten Kill is near the top in terms of the privacy provided the recreationist.
33. While much of the river is secluded, there are also sections with very pleasing viewsheds. The river passes through open meadows, and provides views of both the Taconic and Green Mountains, as mentioned above.
34. The combination of seclusion and pleasing -- sometimes spectacular -- viewsheds serves as a first-rate starting point for a high-quality recreational experience. The beauty of the Batten Kill experience is illustrated by the several photographs attached to the petition and admitted into evidence.
35. The Batten Kill is replete with access points, some public and some private. These include parcels owned or leased by the State of Vermont that guarantee access to the fishing and boating public. Equally important access is provided at several well-known points such as state roads, bridges, and railroad rights of way. Additionally, very little private land along the Kill is posted.
36. The Batten Kill is heavily utilized by anglers; it is accessible, it is beautiful, and it has a good trout population. Creel surveys conducted over the summers of 1988 and 1989 indicate that the Batten Kill is very heavily used by anglers in comparison with other Vermont streams. The following chart, developed from surveys on a five-mile stretch of the river, demonstrates this phenomenon:

Batten Kill

1988 - 17,965 angler hours for the season or 3, 390 fishing hours per mile surveyed.

1989 - 14,163 angler hours for the season or 2,672 fishing hours per mile surveyed.

New Haven River

1986-1988 - 7,069 angler hours per season or 501 fishing hours per mile surveyed.

White River

1968 - 701 angler hours per mile.

37. The Batten Kill is Vermont's most prominent trout stream. It is well known and popular on both a regional and a national level. In 1988 66.5% of the anglers who fished the Kill were nonresidents. Anglers came from 32 states as well as from Canada and several European countries. Ten of fourteen Vermont counties were counted.
38. In 1988 the Batten Kill was named by Trout Unlimited as one of the 100 best trout streams in America. The Kill is able to support a healthy trout population in the face of high fishing pressure. This is largely attributable to the quality of its trout habitat, discussed above.
39. The aquatic habitat and fisheries of the Batten Kill contribute to the river's exceptional recreational, as well as natural values.
40. In addition to the recreational values provided by the Batten Kill's fisheries, the river also provides exceptional recreational opportunities for boaters and tubers, of all skill levels.
41. One business alone, Batten Kill Canoe, Ltd., hosts about 5,000 guest days on the Batten Kill per year. The business also shuttles about 450 private canoeists per year by picking them up at the end of their run. About 65% of their guests are from out-of-state.
42. The water quality, summer flows, privacy and biological richness of the Batten Kill are important qualities for boaters and tubers. With regard to these characteristics the Kill rates near the top of Vermont rivers.
43. Additionally, the Batten Kill is almost free of dams and impoundments, providing the boater with long stretches of obstruction-free boating. From Manchester to the New York

state line there are 17 miles of obstruction free river. This places the Batten Kill near the top of Vermont rivers in terms of uninterrupted boatable segments. By way of comparison, the median distance between dams or other obstructions on Vermont rivers is about seven miles.

44. The following factors contribute to making the Batten Kill an exceptional recreational resource for boaters and tubers: the Kill is boatable almost year round, there are numerous access points, and the combination of seclusion and pleasing viewsheds.

Cultural Values

45. Both the Batten Kill and the West Branch have exceptional cultural values that merit designation.
46. The Batten Kill and the Batten Kill valley have been the focus of an active tourism trade for more than 150 years. With the advent of rail transportation in about 1830 the railroads began encouraging tourist traffic to the Batten Kill valley. The railroads promoted the valley's scenery, mountains and fishing in the Batten Kill. The Batten Kill itself was invariably mentioned, even in these early tourism promotions. The Equinox Hotel promoted the Batten Kill in that era. Today, 150 years later, the current promotional material for both the Hotel and the surrounding communities continues to hold out the Batten Kill as an attraction making this area of the state worth visiting.
47. There are far fewer dams, mills or impoundments today. Formerly, the river was the repository for all mill waste, including sawdust, acid from tanneries, bark, marble dust and sewage. None of this exists now except in minimal quantities. As a result, the Kill has become even more important for local tourist-based businesses along its banks.
48. The Batten Kill also hosts many of the areas historic sites. Manchester Center, at the junction of Route 11-30 and 7A, was the site of a historic mill development. The dam and waterfall are still intact. Ethan and Ira Allen lived along the banks of the Batten Kill in Sunderland. There is Robert Todd Lincoln's Hildene, a historic red covered bridge in West Arlington, Wilburs bridge, Norman Rockwell's studio, and the site of a famous Ogden Pliessner painting.

Scenic Values

49. Both the Batten Kill and the West Branch have exceptional scenic values that merit designation.

50. There are large wetland areas near the beginning of both the East and West Branches of the Batten Kill in East Dorset and Dorset respectively. From Routes 7 and 7A on the east are various views over the Batten Kill wetlands that, because of their low elevation and unique character, contrast strongly with the surrounding mountains and valley farms. The same is true from Route 30 in Dorset and South Dorset from which broad views of Dorset March are possible. Both of these areas are prime wildlife viewing areas.
51. On the east side, these wetland views extend south to Manchester and can be seen at various points, notably the Barnumville Road crossing and at Dufrense Pond Road. On the west side the same is true, with views obtained along Route 30 between Dorset and Manchester, off the Manchester North Road, and at the Manchester-Dorset recreation area.
52. Route 7A follows the river from Manchester to Arlington. Views to the east are composed of the river and the largely undeveloped bottomlands. In addition, secondary roads offer lovely views of the river. Manchester's River Road offers broad vistas of the river and the surrounding meadows of Hildene and Oscar Johnson's adjacent farmland. The Hill Farm area in Sunderland provides a beautiful view of the river and nearby meadows. Many open valley views provide welcome breaks from corridor seclusion including views of the surrounding Green and Taconic Mountains. There are many vistas from higher roads and bridges of the river meandering through wide and narrow valleys.
53. In Arlington, from Route 313 and several secondary roads, generous viewing opportunities of the river and its corridors are afforded.
54. The views from the river itself, as noted throughout these proposed findings are equally charming, picturesque and pastoral. The several secluded segments of the Batten Kill provide peaceful and largely natural landscapes. From many segments of the Kill a river user cannot see any settlement or roads.
55. Because the Natural beauty of the in-stream and out-of-stream viewing opportunities available along its length, the Batten Kill is exceptional among Vermont rivers for its scenic values.
56. The Batten Kill and West Branch waters, as described in the petition, have exceptional natural, recreational, cultural and scenic values, and accordingly, merit designation as outstanding resource waters.

Conclusions of Law

Under 10 V.S.A. § 1424a the Board is vested with the authority of determining whether particular waters should be designated as outstanding resource waters. 10 V.S.A. § 1424a (a). The Board is required to designate the waters as outstanding resource waters if the Board finds that the waters "have exceptional natural, recreational, cultural or scenic values." 10 V.S.A. § 1424a (e) (emphasis added). After a public hearing and upon consideration of the evidence, the Board must designate the waters as outstanding resource waters if the Board finds that the waters in question are exceptional for any one of the four values listed in subsection "e."

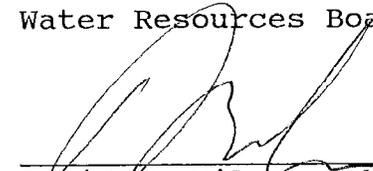
The statute also provides a series of fourteen advisory guideposts that the Board may consider in making its decision. 10 V.S.A. § 1424a (d). This list of fourteen factors is not intended to be exhaustive. The statute directs that the Board "may consider, but shall not be limited to considering the following." Id. However, the inquiry is not limitless. The Board can not consider irrelevant or immaterial evidence. 3 V.S.A. § 810. There is no indication that the Legislature intended the Board to make findings under these guideposts as if they were criteria. Therefore, the Board has organized the findings under the hearings of the four values listed in section 1424a (e) - natural, recreational, cultural, and scenic. Findings relating to the fourteen guideposts, if applicable, have been subsumed under the four more general headings.

Order

The main stem of the Batten Kill and the West Branch are exceptional for their natural, recreational, cultural, and scenic values, and are accordingly outstanding resource waters.

Dated at Montpelier, Vermont, this 12, day of June, 1991.

Water Resources Board



David M. Wilson, Chairman



Elaine B. Little, Member



David L. Deen, Member