State of Vermont
WATER RESOURCES BOARD

Re: Waters of the Green Mountain National Forest
No. ORW-03-01

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

(Issued Aug. 9, 2005)

A petition to designate sixty-six waters in the Green Mountain National Forest (GMNF) as outstanding resource waters (ORWs) is denied without prejudice.

I. Procedural Background

On December 19, 2003, the Vermont Natural Resources Council (VNRC), Conservation Law Foundation (CLF), and various individual petitioners (collectively the Petitioners), filed a petition (Petition) to designate various waters and their tributaries and associated waters in the GMNF as ORWs. The Water Resources Board (Board), by its Chair, convened a prehearing conference in this matter on February 10, 2004 in Montpelier. In a Prehearing Conference Report and Order issued February 18, 2004 (First Prehearing Order), the Chair granted party status to seventeen separate parties, in addition to the Petitioners, ruled on certain preliminary issues of law, and set aside certain other preliminary issues of law for determination by the full Board.

Parties filed motions and memoranda of law addressing the preliminary issues that the Chair reserved for decision by the full Board and also asked the full Board to review certain preliminary issues of law that the Chair had addressed in the First Prehearing Order. On May 11, 2004, the Board convened oral argument on the preliminary issues in this matter in Rutland. The Board issued a comprehensive Memorandum of Decision with regard to these preliminary issues on June 28, 2004. On that same date, the Chair issued a prehearing schedule which, among other things, established deadlines for the parties to prefile direct, rebuttal, and surrebuttal evidence; evidentiary objections; and proposed findings of fact, conclusions of law, and orders.

On September 14, 2004, the Board convened a day-long site visit that included a sample of candidate waters selected by the parties in both the southern and northern sections of the GMNF. The Board and parties visited a portion of Hancock Branch, Bingo Brook, Falls Brook, Smith Brook, the Deerfield River, and the Glastenbury River and viewed Brand Pond and Beebe Pond. At a second prehearing conference, convened November 4, 2004 in Killington, the Chair heard oral arguments on evidentiary objections and made arrangements with the parties for this matter to proceed to a hearing on the merits. The Chair ruled on the evidentiary objections to the prefiled evidence in a Second Prehearing Conference Report and Order issued November 9, 2004. Following two continuances, the evidentiary hearing in this matter took place in Rutland

on May 4, 2005. Those parties who chose to do so filed supplemental proposed findings of fact, conclusions of law, and orders on or before May 25, 2005, as required by a May 19, 2005 Chair's Order.

II. The Petitioners' Post Hearing Motion and Evidence

On June 10, 2005, the Petitioners filed a Motion to Clarify and Stipulate and a Supporting Memorandum of Law. The Petitioners argue that the Vermont Agency of Natural Resources (ANR) and the Vermont Forest Products Association (VFPA) misconstrued statements on CLF's web site in their supplemental proposed findings of fact and conclusions of law. In addition, the Petitioners filed with their motion a study commissioned by ANR entitled "The Outstanding Rivers and Streams in Vermont; Part I, The Identification and Protection of Outstanding Streams; Part II, Exemplary Streams in the West River Basin" (December, 1988). The Petitioners averred that they had not been made aware of this study until May 25, 2005 and offered the study into evidence. A Chair's Order issued June 15, 2005 established June 27, 2005 as the deadline for filing any objections or responses to the Petitioners' June 10, 2005 motion, memorandum of law, and post-hearing evidentiary offer. Objections were received from ANR, VFPA, and Stratton Corporation (Stratton).

Having considered the foregoing motion and objections, the Board excludes from the record the references to CLF's web site in the supplemental proposed findings of fact and conclusions of law filed by ANR and VFPA. ANR asserts that the Board may take official notice of CLF's web site pursuant to 3 V.S.A. § 810. The Board disagrees. The very fact that the Board has been called upon to decide this argument belies ANR's contention that the materials on CLF's web site are not subject to reasonable dispute. In any event, information and allegations with regard to the Petitioners' motives in this matter are untimely and both logically and legally irrelevant. *See* Vt. R. Evid. 402, 403. Because the Board declines to consider the evidence or arguments of ANR and VFPA with regard to CLF's web site, the Board denies the Petitioners' Motion to Clarify as moot.

The Board sustains the objections to the Petitioners' late-filed evidence. The Board has no basis for concluding that ANR has ever adopted or implemented the 1988 study as a policy, procedure, or rule. The Petitioners have not offered any explanation of why the study could not have been located and introduced earlier. In addition, the Petitioners have not identified any legal authority or factual explanation in support of their contentions that the study is relevant and self-authenticating and admissible as a prior statement of ANR. Further, the Petitioners have not cited any legal authority or standards for the Board to admit a document into evidence after the merits hearing has been concluded and the deadline for the parties to file post-hearing briefs has passed. Finally, the study is legally irrelevant in that any probative value that it may have is substantially outweighed by the danger of unfair prejudice, considerations of undue delay, and waste of time. *See* Vt. R. Evid. 403.

III. Findings of Fact

1. The Petitioners propose ORW designations for sixty-six streams, lakes, and wetlands and all their tributaries and associated waters in the GMNF. The watersheds for the candidate waters cover approximately 93,000 acres of the GMNF and include portions of the Breadloaf, Peru Peak, and Lye Brook wilderness areas. The remaining areas include lands in the vicinity of the Breadloaf and Lye Brook wilderness areas, and Glastenbury Mountain, Romance Mountain, Lamb Brook, the Cape, Lincoln Mountain, and Abbey Pond.

2. Certain candidate waters consist of some combination of streams, lakes, or wetlands.

3. The Candidate Waters possess ecological significance and natural and recreational values due to their position in the landscape, relatively undeveloped watersheds, generally excellent water quality, and situation in public ownership.

4. The candidate waters are distributed among eight of Vermont's seventeen planning basins and are located predominantly in areas designated as "roadless" by the United states Forest Service (Forest Service). The streams also occur in or near areas of the GMNF that the Forest Service has designated or proposed for designation as Wilderness, National Recreation Area, or National Conservation Area. The Petitioners have not detailed the extent to which each of the candidate waters is located within a roadless area or within an area designated as Wilderness, National Recreation Area, or National Conservation Area.

5. Areas mapped by the Forest Service in the GMNF roadless inventory have no more than 0.5 miles of improved road for each 1,000 acres in the area. The absence of roads in a watershed decreases mortality to aquatic organisms that might be killed on roadways, decreases the delivery of sediment to streams, lakes, and wetlands and the ensuing degradation of both their physical and chemical quality, and decreases the spread of exotic species. The absence of roads also limits encroachment on riparian buffers, which protect the ecological structure and function of streams, lakes, and wetlands.

6. The Forest Service has mapped the watersheds of the candidate waters and tallied the miles of state, town and Forest Service system roads in each watershed. When the watershed of one or more of the candidate waters fell wholly within the watershed of another candidate water, the Forest Service counted only the larger watershed in order to avoid double counting roads and management activities on a watershed basis. Consequently, the Forest Service placed the sixty-six candidate waters within forty-six watersheds. The road miles per watershed and the candidate waters located within each of these watersheds follows:

a. Ten watersheds containing candidate waters include no state, town, or Forest Service system roads. Two of these watersheds contain two candidate waters each: Abbey Pond and Abbey Brook in one and Big Mud Pond and Little Mud Pond in the other. The remaining eight watersheds each contain one candidate water: Basin Brook, Beaudry Brook, Grindstone Brook, Lye Brook Headwaters and Lye Brook Meadows, Lost Pond Bog, Medbury Branch, Puss and Kill Brook, and Wilder Brook. Thus, *twelve* candidate waters are located in watersheds containing no state, town, or Forest Service system roads.

b. *Thirteen* candidate waters are located in watersheds containing up to one mile of roads. One of these watersheds contains three candidate waters: Beebe Pond, Lost Pond, and South Alder Brook. The remaining ten watersheds in this group each contain one candidate water: Bee Brook, Boyden Brook, Fayville Branch, George Brook, Hell Hollow Brook, Kettle Brook, Lamb Brook, Lyman Brook, Perkins Brook, and Pine Brook.

c. Eleven watersheds containing candidate waters include one to two miles of roads. One watershed includes three candidate waters: Bourn Brook, Bourn Pond and Marsh, and Little Mud Pond. Another watershed includes two candidate waters: Horrid Brook and Smith Brook. The remaining nine watersheds each contain one candidate water: Baker Brook, Beaver Meadow and Outlet Stream, Beaver Meadow Brook, Deer Hollow Brook, Hancock Branch, Muddy Branch of the New Haven River, North Alder Brook, Smith Brook, and Stetson Brook. Thus, *fourteen* candidate waters are located in watersheds containing one to two miles of roads.

d. *Five* candidate waters are located in watersheds containing two to four miles of roads. These include one watershed containing two petitioned-for waters: Branch Pond and Branch Pond Brook. The remaining three watersheds in this group each contain one candidate water: Austin Brook, Black Brook, and Goshen Brook.

e. Finally, seven watersheds containing candidate waters include over four miles of roads. Four of these watersheds contain two or more candidate waters: Bingo Brook (which contains Bingo Brook and Falls Brook), the Deerfield River (which contains Blind Brook, Castle Brook, Deer Cabin Brook, Deer Lick Brook, the Deerfield River, the Glastenbury Rivers, South Pond Brook, and Lost Pond), Redfield Brook (which contains Little Pond, Little Pond Brook, Rake Branch, Red Mill Pond Brook, and Redfield Brook), and the White River (which contains Clark Brook, Gulf Brook, Patterson Brook, and the White River). The remaining three watersheds each contain one candidate water: Bickford Hollow Brook,

South Fork, and the Winhall River. Thus, *twenty-two* candidate waters are located in watersheds that include over four miles of roads.

7. Uninventoried, old dirt surface roads exist in the watersheds of all or nearly all candidate waters.

8. The Petitioners have not provided a summary of the location of inventoried or uninventoried roads in relation to the candidate waters. In some watersheds, an inventoried road parallels a candidate stream (including Austin Brook, the White river, Bingo Brook, and the Deerfield River). In other watersheds, an inventoried road bisects a candidate stream (including Deer Hollow Brook, Smith Brook, Gulf Brook, and Lamb Brook).

9. In general, lands of the GMNF in the watersheds of the candidate waters have been subject to extensive human-caused change as a result of activities such as timber harvesting, grazing, and road building that occurred prior to the acquisition of these lands by the Forest Service.

10. The Forest Service's management of the GMNF has affected the ecological condition of lands relevant to the Petition. Vegetation management affecting these lands has included harvesting trees, creating and maintaining upland openings through mowing or prescribed fire, releasing fruit trees, and planting trees.

11. Twenty-nine out of forty-six combined watersheds, as described above, have undergone Forest Service vegetation management activities since 1975. The number of activities per watershed ranges from one to twenty, with an average of eight. The number of acres affected per activity ranges from one to 1,170 acres, with an average of ninety-two acres.

12. Forest management practices, including timber sales, in the GMNF are generally being conducted in a manner that maintains water quality. Other management practices, such as eliminating erosion and sedimentation problems, restoring riparian areas, and revegetating and stabilizing bare soil areas, are improving water quality conditions. Water quality in the GMNF can be maintained and improved in conjunction with forest management and recreation projects.

13. The recovery of stream habitats and geomorphic (physical) processes lags behind that of water quality. As a result, stream habitats on the GMNF, and elsewhere in Vermont, are still decades away from realizing the full range of benefits associated with mature riparian forests, adequate flood plains, and their interactions and relationships with stream channels.

14. The northern and southern sections of the GMNF represent the largest contiguous land areas in Vermont that are conserved in a forested condition for the public.

15. Although the watersheds of the candidate waters are relatively intact, at least some of these watersheds include private inholdings. The record is unclear as to whether or how these inholdings may affect the candidate waters. The lack of forested buffers along riparian areas in the GMNF usually occurs on private inholdings. For the most part, only recently acquired GMNF riparian lands lack sufficient riparian vegetative buffers. The Forest Service has made it a priority to acquire easements or fee simple ownership of privately held riparian lands in the GMNF in order to reforest riparian areas.

16. Stratton owns land within the watershed of the segment of the Winhall River that has been proposed for ORW designation. These lands include several existing, permitted activities, including ski trails, a ski patrol building, work roads, and related utilities. A land use permit authorizes Stratton to widen one ski trail and to construct a new ski trail within the watershed of the segment of the Winhall River that has been proposed for ORW designation. Stratton withdraws water from the Winhall River downstream from the candidate segment. Stratton and the Stratton-Winhall Fire District utilize a permitted sewage spray disposal system that discharges to groundwater and indirectly into the Winhall River downstream from the segment proposed for ORW designation.

17. The ORW candidate waters are headwaters. Headwaters perform important ecological functions, often referred to as ecosystem services. For example, headwaters chemically transform pollutants into less harmful substances. Headwaters maintain water supplies. In a healthy headwater system, surface waters may infiltrate soils and recharge groundwater. In the same way, headwaters also provide natural flood control. Healthy headwater systems may not only absorb rainfall and snowmelt and during wet weather events, but may also discharge base flows during dry weather, thus protecting downstream habitat. Headwaters recycle organic carbon in dead plants and animals. Many plants and animals are more commonly or even exclusively found in headwaters. Overall, headwaters have ecological significance and help maintain high quality, functional ecosystems.

18. Headwater streams are not unique or rare in Vermont. Based upon a review of DEC and EPA data from a random selection of 235 stream sampling sites in Vermont, 124, or 53%, were located on first or second order streams. High quality headwater streams are found draining all mountainous terrain across Vermont.

19. The Petitioners have not studied every individual stream system that the Petition proposed for ORW designation.

20. Scientifically valid inferences can be drawn and conclusions can be made with a high level of confidence, about an ecosystem for which data is unavailable based on data collected from other stream ecosystems with similar characteristics, including watershed physiography, vegetation intactness, and human-made landscape alterations, such as roads and buildings.

21. Landscape analyses based on shared watershed attributes are reliable for identifying stream ecosystems with high ecological integrity. Landscape characteristics can be used to determine the degree of disturbance occurring in a watershed and the potential for that disturbance to cause adverse effects to biological communities. An undisturbed watershed implies relatively natural, high-quality conditions. Such relationships are the underpinnings of predictive models and provide the means of presumptive analyses in the absence of site-specific data. It is appropriate to use assessments of water bodies with landscape characteristics similar to those of nearby water bodies that have not been assessed to predict a high probability of similar water quality in the unassessed water bodies.

22. Landscape analysis is appropriate for evaluating the degree of disturbance within a watershed to draw conclusions about the potential of that watershed to exhibit biological characteristics of species composition, structure, and function that are within the range of natural variability. Inferences from landscape analyses are also appropriate for determining whether waters are of reference condition.

23. Based on the similarity of their landscape characteristics to those of waters that are known to be of reference condition, it can be inferred that the candidate waters that have not been sampled are of reference condition, with the exception of acid-deposition impacts. Among all other reference waters in Vermont, the candidate waters are among the least impacted by human development and associated land use changes. Numerous reference sites in Vermont are affected by agricultural and rural development, roads, and in some cases even direct discharges.

24. The Petitioners have not demonstrated what types of inferences other than reference condition may be appropriate with regard to waters for which the Petitioners have not provided specific data. In other words, the Petitioners have not demonstrated which data relevant to certain candidate waters are generalizable to any other candidate waters.

25. The Forest Service listed certain candidate streams as Significant. These streams fell into two categories. In the first category, eleven streams met the eligibility criteria for inclusion in the National Wild, Scenic and Recreational Rivers System and therefore had the potential to be designated as Wild, Scenic or Recreational Rivers. To be eligible, a river or stream must be free-flowing and possess at least one outstandingly remarkable

value. In the second category, thirty-eight streams needed to be inventoried to determine whether they met the eligibility criteria. These streams appeared to the Forest Service to be important to the public for recreation, water quality, and esthetic values. However, the Forest Service did not thoroughly evaluate these streams prior to listing them as Significant or judge them against other streams in the state. The Forest Service refers to streams in the first category as "Potential Wild, Scenic and Recreational Rivers" and streams in the second category as "Other significant Streams." Five candidate streams are Potential Wild, Scenic and Recreational Rivers. Thirteen candidate streams are Other Significant Streams.

26. In 2003, the Forest Service completed an eligibility study of all Other Significant Streams to determine whether they possessed any outstandingly remarkable values that would make them eligible for the inclusion in the National Wild, Scenic and Recreational Rivers System. Of the candidate waters that the Forest Service has identified as Other Significant Streams, only Bourn Brook was found to have outstandingly remarkable values in relation to other rivers in the region. The Forest Service determined that Bourn Brook possesses outstandingly remarkable botanical and ecological value.

27. The Petitioners have not explained what features of the five candidate streams that the Forest Service has listed as Potential Wild, Scenic and Recreational Rivers would make them suitable for designation as ORWs. The record does not support drawing inferences from these five candidate streams to other streams that the Petitioners have proposed for ORW designation. The unique features of these waters cannot be generalized to other candidate waters without knowing what these features are, what types of watershed characteristics support them, and whether the other candidate waters possess these watershed characteristics, particularly because the Forest Service has not determined that any other candidate streams merit listing as Potential Wild, Scenic and Recreational Rivers. The Petitioners have not explained what features of the thirteen candidate streams that the Forest Service has listed Other Significant Streams, including Bourn Brook, would make them suitable for designation as ORWs. Nor does the record support extrapolating any of the features of these thirteen streams to other candidate waters.

28. An Aquatic Classification Workgroup has identified certain candidate streams as Exemplary Aquatic Communities. The Workgroup consisted of staff from ANR, the Nature Conservancy, Middlebury College, and the University of Vermont. The Workgroup selected water bodies they judged to be the best examples of reference streams, ponds, and lakes. These were the least impacted examples of classes of aquatic communities across the State of Vermont. The authors of the classification state that identification of these sites should be of great value in the development of a statewide conservation plan and in planning at more local scales. The following candidate streams and ponds were selected by the Workgroup:

Deer Lick Brook	Deer Cabin Brook
Glastenbury River	Little Pond
Little Pond Brook	Deerfield River
Rake Branch	Red Mill Pond Brook
Redfield Brook	Castle Brook
Bickford Hollow Brook	Smith Brook
White River	Austin Brook
Baker Brook	Winhall River
Branch Pond	South Pond Brook
Bourn Brook	Bourn Pond

The Petitioners have not revealed the criteria that the Workgroup used to make its selections. Nor have the Petitioners explained why the Workgroup did not select any candidate waters other than those on this list as Exemplary Aquatic Communities. Accordingly, it would not be appropriate to infer that candidate waters that have not been selected possess the same attributes as those that were, whatever those attributes may be.

29. The main objective of the Forest Service for fisheries management throughout the GMNF is to promote self-sustaining populations of wild fish. Accordingly, the majority of streams in the GMNF are not stocked with hatchery fish. The West and White Rivers, however, are managed to reestablish Atlantic Salmon, and these rivers are stocked with salmon to promote the recovery of this species. Salmon fry are stocked in the upper Winhall within the West River Basin. Salmon are also stocked in certain tributaries of the White River that are candidate streams, including Bingo Brook, Hancock Branch, and the upper White River. The Petitioners have not made clear whether other candidate streams in the West and White River watersheds are stocked with salmon. In addition to providing direct habitat for spawning and feeding, the headwaters of the West and White Rivers within the Study Area contribute clean water to downstream areas for salmon habitat. Inferences with regard to candidate streams that are not located in the drainage areas of the West and White Rivers cannot be drawn from the salmon management in the West and White Rivers.

30. Six ponds in the GMNF are stocked with brook trout, one of which is a candidate water, Big Mud Pond. Inferences with regard to other candidate lakes cannot be drawn from the management of Big Mud Pond as a trout fishery.

31. Nine of the twenty-six streams with biological monitoring data represent the top eighteen percent of biological condition across the state as measured by species richness and the number of sensitive species present. These nine streams are Austin Brook, Baker Brook, Bingo Brook, Bourne Brook, Goshen Brook, Lamb Brook, Muddy Branch of the New

Haven River, Smith Brook, and the Winhall River. These streams have unique biological, physical, and chemical water quality values. Because seventeen of the twenty-six streams analyzed for species richness do not fall within the top eighteen percent across the state, the Board cannot infer similar species richness in the streams for which no data is available.

32. Data collected by Stratton indicating that the Winhall River does not fall within the top eighteen percent of biological condition for medium high gradient streams across the state is not credible because these data were not collected during the fall index period, which is the standard period that ANR uses to collect biological data. Seasonal differences in macroinvertebrate community structure may create incorrect findings if ANR biocriteria are applied to data collected outside the fall index period.

33. Under the Vermont Lake Protection Classification System, all the candidate lakes would be classified as wilderness or wilderness-like because of access difficulty and lack of human development. Wilderness and wilderness-like lakes are the most natural lakes in Vermont. The candidate lakes are rare in Vermont due to the undeveloped nature of their lake shores and viewsheds, with no seasonal or year-round structures on their shores, and any structures in their view sheds being inconspicuous from their waters. Because these lakes are conserved in federal public lands, they can be managed to retain their wilderness and wilderness-like characteristics into the future.

34. Ultra-oligotrophic lakes, which are characterized by extremely low nutrient concentrations, are rare in Vermont. ANR regards lakes with a springtime mean total phosphorus concentration of no more than 6 µg/L as ultra-oligotrophic.

35. Little Pond is ultra-oligotrophic.

36. Dystrophic lakes tend to be weakly buffered and brown in color. This color comes from their high content of humic and organic matter. Limited light penetration and low nutrients restrict algae growth in dsytrophic lakes. Of the 231 lakes in ANR's lake assessment database, only twenty-four lakes (10%) are dystrophic. Eleven of these dystrophic lakes (46%) are located in the GMNF.

37. Five candidate lakes–Beebe Pond, Big Mud Pond, Bourn Pond, Branch Pond, and Little Mud Pond (Otter Creek Basin)–are dystrophic. Data with respect to the trophic status of other candidate lakes--Abbey Pond, Little Mud Pond (Batten Kill Basin), Lost Pond (Deerfield Basin), and Lost Pond (Batten Kill Basin)–are not available.

38. The Candidate lakes provide important wildlife habitat for waterfowl, beaver, moose, bear, bobcat, migratory songbirds and many other species. The water quality of the

Candidate lakes is generally excellent, with the exception of impacts from acid deposition.

39. Vermont receives roughly the same low pH precipitation across the state, but acid deposition affects each region and water body differently. The GMNF is especially sensitive to acid deposition due to the low buffering capacity of its metamorphic bedrock.

40. The candidate lakes are the best examples of critically acidic lakes in the State of Vermont and fail to comply with chemical criteria of the Vermont Water Quality Standards. These lakes exhibit significant water quality impairment attributable to acid deposition based upon chemical monitoring dating back to the 1980's. The biological communities in the candidate lakes have been simplified to only the most acid tolerant fish and insects. Only two species of fish, brook trout and brown bullhead, are found in these lakes. Little Pond supports no fish species.

41. In the absence of acid deposition and based on the current land management activities employed by the GMNF, all waters within the GMNF have the potential to attain reference status.

42. Eight candidate ponds--Abbey Pond, Beebe Pond, Big Mud Pond, Bourn Pond, Branch Pond, Little Mud Pond (Batten Kill Basin), Little Mud Pond (Otter Creek Basin), and Little Pond--support threatened, uncommon, or declining species. The record does not provide any specific information with regard to threatened, uncommon, or declining species in Lost Pond (Deerfield Basin) or Lost Pond (Batten Kill Basin). Nor does the record contain sufficient information to support an inference that the latter two lakes support threatened, uncommon, or endangered species.

43. The Petitioners identify the following thirteen wetlands for ORW designation: Abbey Pond, Beaver Meadow, Beebe Pond, Big Mud Pond, Bourn Pond, Branch Pond, Little Pond, Little Mud Pond in Mount Tabor (Otter Creek Basin), Little Mud Pond in Winhall (Batten Kill Basin), Lost Pond in Sunderland (Batten Kill Basin), Lost Pond in Glastenbury (Deerfield Basin), Lost Pond Bog, and Lye Brook Headwaters and Meadows. The Petitioners also refer to the following six of the foregoing waters as lakes: Abbey Pond, Beebe Pond, Big Mud Pond, Bourn Pond, Little Pond, and Little Mud Pond (Batten Kill Basin). An unknown number of small, forested wetlands within the watersheds of candidate waters have not been named or inventoried.

44. Of the thirteen areas that the Petitioners have identified as wetlands, all except Lye Brook Headwaters and Meadows, and the two Lost Ponds are known to exhibit unique features and to support rare, threatened, uncommon, or declining species. The species at Lye Brook Headwaters and Meadows have not been inventoried. However, Lye Brook

Headwaters and Meadows consists of a fifty-acre peat bog containing open water in the center and a number of stream channels. A fifty-acre peat bog is rare in the State of Vermont. The record does not provide sufficient information to conclude that either of the Lost Ponds exhibit exceptional values as wetlands.

45. Wetland and riparian forested areas within the GMNF contribute important habitat to at least thirty-five to forty different bird species, including the rare cerulean warbler.

IV. Conclusions of Law

A. Overview

Section (e) of Vermont's ORW statute, 10 V.S.A. § 1424a(e), provides as follows: "Upon consideration of the evidence, the board shall designate the waters as outstanding resource waters if it finds that they have exceptional natural, recreational, cultural or scenic values. Designation as outstanding resource waters shall not invalidate the terms of existing permits issued by the state or federal government." Section 1424a(d) enumerates fourteen factors the Board may consider in reaching its decision but provides that the evidence need not be limited to these considerations.

With regard to the protection of ORWs, section 1-03.D of the Vermont Water Quality Standards provides as follows: "The Board may under 10 V.S.A. § 1424a designate certain waters as Outstanding Resources Waters. Where the Board so designates such waters because of their water quality values, their existing quality shall, at a minimum, be protected and maintained." The Petitioners have asked the Board to designate sixty-six streams, lakes, and wetlands, along with their tributaries and associated waters in the GMNF, as ORWs based on their water quality values.

In its June 28, 2004 Memorandum of Decision in this matter, which is incorporated herein by reference, the Board overruled motions to dismiss the Petition as a mater of law and found the Petition legally sufficient for the Petitioners to proceed to a hearing on the merits. The Petitioners carry the burden of proof, by a preponderance of the evidence, to show that the candidate streams exhibit the exceptional values necessary to warrant designation as ORWs. (First Prehearing Order at 6.) The Board must now determine whether the Petitioners have met their burden.

The Petitioners have not persuaded the Board that the candidate waters warrant ORW designation. Although the Board dismisses the Petition, the Board does so without prejudice. The Petitioners may file a revised petition with the Water Resources Panel of the Vermont Natural Resources Board to designate some or all of the sixty-six candidate waters as ORWs by rule. *See* 2004 Vt. Acts and Resolves No. 115, §§ 38, 49 (codified at 10 V.S.A. §§ 1424a,

6025(d)(4)). Any revised petition will need to address the deficiencies identified in this decision. The number of waters the Petitioners choose to include in any revised petition will depend on the extent to which the Petitioners believe they can redress these deficiencies.

The shortcomings of the evidence and argument in support of the Petition were presaged by the Board's June 28, 2004 Memorandum of Decision. In response to objections to the Petition, the Board determined that a petition may take a basin-wide approach rather than a water-body specific approach to identifying waters, or a category or class of waters, as candidates for ORW designation. The Board concluded that "the Petition identifies the waters at issue with enough specificity . . . for this matter to proceed to a hearing on the merits." (June 28, 2004 Mem. of Decision at 10.) The Board stated further that "The Petition is specific enough for the parties to prepare their cases and for the Board to determine whether the evidence offered in this matter is relevant to a named water body or its sources." (*Id.*) Although the Board ruled that the Petition was specific enough to avoid dismissal as a matter of law, the Board now finds that the evidence and argument presented at the merits hearing were not detailed enough for the Board to grant the relief requested.

The Board determined that the Petitioners were not required to present their evidence water body-by-water body. (*Id.* at 12.) The Board reasoned, "The Petition presents common issues of law and fact with respect to the named waters and their sources. These waters are most efficiently considered together rather than in separate proceedings." (*Id.*) Here again, while the Board was amenable to considering evidence and argument common to all the candidate waters or to various categories of these waters, the Board now finds that the evidence and argument presented were not sufficient for the Board to conclude that the candidate waters merit designation as ORWs. The Petitioners have not provided the Board with any evidence particular to certain waterways listed in the Petition and have advanced only general statements with regard to certain others. Nor have the Petitioners presented the Board with a comprehensive theory or principled criteria by which the Board can set aside the candidate waters as exceptional.

In its June 28, 2004 Memorandum of Decision, the Board ruled that the Petitioners were not required to provide notice of the Petition to the owners of private inholdings in the watersheds involved in this matter. (*Id.* at 14.) In addition, the Board further rejected the argument that the Petition's exclusion of inholdings was deficient as a matter of law. (*Id.*) Thus, the Board concluded that, "Whether or not the waters at issue can be managed as outstanding resource waters on either side of inholdings is a question of fact." (*Id.*) Further, the Board rejected a legal argument "that the Petitioners inappropriately excluded certain stream segments from the proposed designation based on the ownership of adjacent lands rather than the ecological characteristics of these stream segments." (*Id.* at 15.)

The Board determined in its June 28, 2005 Memorandum of Decision that "the only relevant inquiry in this case is whether the candidate waters exhibit exceptional values." (*Id.*)

Consequently, the Board found "that considerations of *future or potential* social, economic, or management consequences may not be used to prevent the proposed designation and are therefore irrelevant and inadmissible." (*Id.*) (emphasis in original). Nevertheless, the Board clarified that it would "consider evidence of the *existing* management of the candidate waters and the *existing* social and economic uses of these waters insofar as this evidence is relevant to the question of whether these waters are exceptional." (*Id.*) (emphasis in original).

The maps in evidence in this case show numerous inholdings in the drainage areas of the candidate waters, often adjacent to or surrounding candidate streams. However, the record does not demonstrate that excluding inholdings from the proposed designations is administratively or scientifically reasonable. Nor does the record support a finding that present or permitted activities on inholdings located within the watershed of candidate streams would be consistent with designating those streams as ORWs. With the exception of Stratton's inholdings in the upper Winhall watershed, the record is almost devoid of evidence with regard to existing or permitted activities on private inholdings located within the watersheds for the candidate streams, and sometimes along the streams themselves. While the record contains some evidence with regard to Stratton's inholdings, the Board cannot conclude whether current or planned permitted activities on Stratton's land would be consistent with an ORW designation of the upper Winhall River and its tributaries.

Based on the record in this case, and as detailed below, the Board finds that nine candidate streams, all ten candidate lakes, and the eight candidate wetlands that are not also named as lakes, as well as the tributaries to these twenty-seven waters, would warrant designation as ORWs if the Petitioners properly account for hydrologically related inholdings in their watersheds. The Board so finds with regard to these waters based on the evidence of the unique features of each of these water bodies, combined with their situation in the GMNF. With regard to the balance of the streams enumerated in the Petition, the Board cannot conclude whether or not these waters exhibit the exceptional values needed to designate them as ORWs. The Petitioners have not presented the Board with an articulated legal theory combined with demonstrable evidence of exceptional values upon which the Board may decide whether all the candidate streams warrant ORW status. Rather, the Petitioners have gathered a breadth of complimentary information with regard to the various candidate waters, drawn broad inferences from this information, and left the Board without a logical, principled basis for determining which features or combinations of features of the candidate waters constitute exceptional values under the circumstances of this case.

B. Standard of Review

The parties opposing the Petition place the legal process for designating ORWs in a vice that renders the process too narrow to have any use. VFPA asserts that if a water body is truly exceptional, then its management must already be adequate so that ORW status is unnecessary.

On the other hand, ANR maintains that a water body cannot be designated as an ORW based on its water quality values unless scientific data shows that its physical, chemical, or biological characteristics are rare compared to those of a similar class of waters in Vermont. Neither approach finds support in the law.

The determination of whether a particular water body or group of water bodies exhibits exceptional values and must therefore be designated as an ORW or ORWs can be informed by both qualitative and quantitative data, but the ultimate decision inevitably requires well-grounded judgment. At least in this case, the Board is not persuaded that the value-based decision that must be made can be made on a purely mathematical basis. This is not to say that the process of identifying exceptional values may be arbitrary or idiosyncratic. Rather, determining whether a water body or group of water bodies exhibits exceptional values calls upon the decision maker to reasonably evaluate the characteristics of the waters in the context of a larger ecological and social setting, with a mind to the overall goals of state and federal policy to maintain and improve water quality.

In *In re Great Falls, Ompompanoosuc River*, No. ORW-95-01, Findings of Fact, Conclusions of Law, and Order at 10 (Vt. Water Res. Bd. March 6, 1996), the Board interpreted the term "exceptional" in Vermont's ORW statute, 10 V.S.A. § 1424a(e), to mean forming an exception or rare, or alternatively, better than average or superior. The Board determined that the values of the waters at issue in that case needed to be better than the baseline to warrant ORW status. In addition, the Board in that case chose to compare the affected waters to other waters of the state to determine whether the candidate streams were truly exceptional. Based on prior decisions and state and federal law, the Board determined in its June 28, 2004 Memorandum of Decision in the instant case that waters may be considered exceptional in a variety of contexts, including the State of Vermont, New England, or the United States. (June 28, 2004 Mem. of Decision at 18.)

The Petitioners on the one hand and ANR on the other took different approaches to determining whether the candidate waters in this case are exceptional. The Board finds both approaches useful but neither approach entirely satisfactory under the circumstances of this case. In its legal and policy arguments, ANR has advanced an interpretation of the term exceptional that the Board finds much too narrow. For example, ANR argues that determining whether a water body is exceptional requires a comparison of that water body to other waters in its class. The Board understands that an objective evaluation of the composition of macroinvertebrates in a candidate stream may involve a comparison with streams of a similar nature in order to control for other variables. However, unique chemical, physical, or biological indicators among similar streams are not the only characteristics that may make a stream exceptional for water quality. Even ANR's approach is subjective because it requires some judgment about how unique a stream's biological condition must be before it will be considered exceptional. To be exceptional for biological condition, must a candidate stream fall within the top eighteen percent of species

richness compared to streams of an otherwise like character, as ANR has determined, or would the top five percent or the top fifty percent be suitable?

The Board expressly rejects ANR's assertion that the Board must rely on site-specific scientific data with regard to a water body's physical, chemical, and biological water quality to designate the water body as an ORW based on its water quality values. In its June 28, 2004 Memorandum of Decision in this matter, the Board interpreted "the term 'water quality values' in section 1-03.D of the Vermont Water Quality Standards to include waters of the highest quality as well as waters of exceptional recreational and ecological significance." (June 28, 2004 Mem. of Decision at 17.) Thus, the Board determined that waters designated as ORWs based on their exceptional natural or recreational values, as those terms are used in Vermont's ORW statute, 10 V.S.A. § 1424a(e), may be so designated because of their water quality values and must therefore be protected and maintained under section 1-03.D of the Vermont Water Quality Standards. (June 28, 2004 Mem. of Decision at 17.) Water quality values in the Vermont Water Quality Standards include not only physical, chemical, and biological conditions, but also such factors as esthetics, hydrology, and recreation. Even physical, chemical, and biological considerations may include an array of parameters that may be assessed through a variety of means.

The Board also rejects ANR's contention that a water body that fails to meet the Vermont Water Quality Standards in some respect may be designated as an ORW only if the water body's impairment is the result of naturally occurring conditions. As ANR points out, section 1-01.B.39 of the Vermont Water Quality Standards defines "reference condition" to mean "the range of chemical, physical, and biological characteristics of waters minimally affected by human influences." However, ANR provides no legal authority for its idea that a water body must be of reference condition for all parameters before it can be designated as an ORW based on its water quality values.

A number of water bodies at issue in this case are impaired as a result of acid deposition. An acid-impaired water body may nevertheless exhibit exceptional natural or recreational values warranting its designation as an ORW based on its water quality values. Forestalling the designation of otherwise-exceptional acid-impaired waters until the acidification of these waters is ameliorated at some future time may allow other ecological stressors to affect the waters, possibly destroying the opportunity and responsibility to afford these outstanding waters the highest level of protection.

The Board agrees with ANR's assertion that only a water body can be designated as an ORW, and not a watershed. Watersheds are comprised of both the waters and their surrounding lands, and, as ANR states, the Board may not designate land as an ORW. The Petitioners, however, do not propose the designation of lands as ORWs. Rather, the Petition seeks the designation of certain named water bodies, along with their tributaries and associated waters. As

the Board determined in its June 28, 2004 Memorandum of Decision, it may be appropriate to designate not only named water bodies, but also their tributaries. (Mem. of Decision at 9-12.)

Compared to ANR, the Petitioners advocate a more generalized approach to interpreting the term exceptional. The Petitioners use subjective terms, like spectacular and stunning, to describe the candidate streams. These superlatives may be useful and appropriate for at least some of the waters at issue, but the Petitioners do not peg their case on the beauty of the candidate waters alone. In the same fashion, the Petitioners emphasize the position of the candidate waters in the landscape, their relatively roadless and otherwise undeveloped watersheds, their generally excellent water quality, and their situation in public ownership. While these are all important and relevant considerations, and arguably sufficient by themselves, the Petitioners, do not ask the Board to determine that these attributes alone are sufficient to designate the candidate waters as ORWs, and the Board therefore does not decide that question, particularly because the record does not provide information accurate enough to meaningfully distinguish the sixty-seven candidate waters from other waters in the GMNF.

The Board does not suggest that any petition that seeks to designate a class of waters as ORWs based on the general characteristics of that class should be rejected out of hand. However, before granting such a petition, the Board would require sufficient evidence to set this class apart and to show that the candidate waters properly belong within this unique class. In this case, it is not clear how the Petitioners defined the class of waters they propose for designation. It is not clear, in other words, why this class includes sixty-six waters and not some greater or lesser number. Nor is the Board able to determine that each of the sixty-six waters proposed for ORW designation belongs in this class. It is acceptable, as the Petitioners have done, to identify certain waters and to seek ORW designation for those waters and all of their tributaries. While the Board does not require specific evidence with regard to every reach of surface water proposed for ORW designation, the Board must be convinced that all the candidate waters, as well as their tributaries, are exceptional.

In the absence of rules clarifying the requirements for designating ORWs, the question of whether certain waters exhibit exceptional values and therefore warrant ORW designation must be considered on a case-by-case basis. The Board does not attempt to articulate a bright-line test in this case. Those filing petitions to designate waters as ORWs may offer different grounds for ORW designation to suit different situations. It is incumbent on petitioners to advance a unifying theory, grounded in applicable law, that adequately explains why the proposed water body or class of water bodies must be set aside from other waters, and further, to provide evidence to show that the proposed water body meets these criteria or that all the waters within a proposed class of waters properly belong in that class.

C. Analysis

While Board does not necessarily oppose designating the candidate waters as ORWs, the Board cannot grant the relief that the Petitioners have requested based on the record in this matter. The Board's primary hesitation to grant the Petition arises from the Petition's proposal to designate a patchwork of waterways, interrupted by various private inholdings. The Board is satisfied that designating the candidate waters as ORWs would be consistent with the working nature of the GMNF. However, the Petitioners must demonstrate that the activities presently occurring or permitted to occur on private inholdings are consistent with finding that the candidate waters in those watersheds are exceptional for their natural or recreational values. If the activities presently occurring and permitted to occur on these inholdings are consistent with the proposed ORW designation, then the candidate water bodies and their tributaries that border or transect these inholdings belong in any revised petition, barring some reason not to include them.

The Board does not favor designating a water body around an inholding in the absence of reasonable administrative or technical grounds for doing so. In the event the Petitioners propose the designation of a water body as an ORW without including portions of that water body with a significant hydrological connection to an inholding, the Petitioners must nevertheless demonstrate how the existing or permitted activities on that inholding would be consistent with an ORW designation. The owners of inholdings included in an ORW petition or that may be affected by a requested ORW designation should receive direct notification of any revised petition.

The Petitioners will need to demonstrate that legally permitted current and prospective activities on Stratton's property in the upper Winhall River watershed do not leave these waters unfit for designation as ORWs. By the same token, the Petitioners must demonstrate that permitted downstream activities (like water withdrawals and indirect discharges) are consistent with ORW status upstream. As noted, Vermont's ORW statute provides that an ORW designation "shall not invalidate the terms of existing permits issued by the state or federal government." 10 V.S.A. § 1424a(e). The intent of this language is to allow legally existing projects to continue and permitted plans to go forward. An ORW designation may not render the renewal of an existing permit impossible upon its expiration.

The Board does not grant partial relief in this matter for two reasons. First, the Board does not know how accurate or current the maps in evidence are with respect to the size, number, or location of inholdings or the location of watersheds and waterways. In addition, the Petitioners did not delineate watersheds for each of the candidate waters. Some candidate waters are lumped into larger watersheds. Consequently, the Board cannot reliably attempt to designate only waters upstream from inholdings or in watersheds that do not include inholdings, especially without allowing all parties an opportunity to comment. The record also provides no way of

determining whether a significant hydrological connection exists between an inholding and a candidate water body. In addition, the Board finds some merit in treating the candidate waters together, based on the common issues of fact and policy surrounding their possible ORW designation. For that reason as well, the Board does not attempt to craft partial relief by affording ORW status to candidate waters that do not appear to be affected by private inholdings.

The Board denies the Petition in total not only because it fails to account for private inholdings in the GMNF, but also because the Petition leaves the Board with substantial uncertainty about the eligibility of at least some of the candidate waters for ORW designation. ANR has determined that nine of the candidate streams--Austin Brook, Baker Brook, Bingo Brook, Bourne Brook, Goshen Brook, Lamb Brook, Muddy Branch of the New Haven River, Smith Brook, and the Winhall River--exhibit biological conditions, as measured by species richness metrics, representative of the top eighteen percent of comparable streams in the state. For this reason, ANR argues that the Board may find these streams exceptional for their water quality values. While the Board does not hold that this standard is necessary for determining that a stream is exceptional for its water quality values, the Board believes this data would be sufficient to warrant ORW designation of these streams and their tributaries based on water quality values, provided any inholdings in these watersheds are included in the designation or excluded on reasonable grounds.

ANR has further concluded that all ten candidate lakes--Abbey Pond, Beebe Pond, Big Mud Pond, Bourn Pond, Branch Pond, Little Mud Pond (Batten Kill Basin), Little Mud Pond (Otter Creek Basin), Little Pond, Lost Pond (Deerfield Basin), and Lost Pond (Batten Kill Basin)--are exceptional for their natural, recreational, and scenic values. The exceptional characteristics of these lakes include some combination of undeveloped shorelines, undeveloped islands, wilderness characteristics, and rare, threatened, or endangered species. The Board disagrees with ANR's conclusion that these characteristics are not sufficient for the Board to determine that these lakes are exceptional for their water quality values. As noted, exceptional natural or recreational values are sufficient to support designating a water body as an ORW based on its water quality values, the effects of acid deposition notwithstanding. Thus, all ten candidate lakes, along with their tributaries, warrant ORW designation based on water quality values, provided the Petitioners demonstrate that the existing and permitted activities on any inholdings draining into these waters are consistent with such a designation and include the waterways within or adjacent to these inholdings in a revised petition, as may be appropriate.

Six candidate lakes may also merit ORW designation based on their water quality values because of their trophic condition. One candidate lake--Little Pond--is ultra-oligotrophic. Five candidate lakes–Beebe Pond, Big Mud Pond, Bourn Pond, Branch Pond, and Little Mud Pond (Otter Creek Basin)–are dystrophic.

The Petition proposes thirteen wetlands for ORW designation. Vermont's ORW statute, 10 V.S.A. § 1424a, authorizes the designation of "waters" as ORWs. Although section 1424a does not include a definition of waters, this section is located in Chapter 49, which is entitled "Protection of Navigable Waters and Shorelands." Chapter 49 does not include a definition of waters, but section 1422(4) defines "navigable water" or "navigable waters" in pertinent part as follows: "all natural inland lakes within Vermont and all streams, ponds, flowages and other waters within the territorial limits of Vermont, including the Vermont portion of boundary waters, which are boatable under the laws of this state." Under section 1-01.B.49 of the Vermont Water Quality Standards, "Waters include all rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs and all bodies of surface waters, artificial or natural, which are contained within, flow through or border upon the State or any portion of it."

All candidate waters described as wetlands in this matter include surface waters. Indeed, the parties analyze several of these waters not only as wetlands, but also as lakes. None of the parties dispute that these surface waters and the wetlands contiguous to them are waters as that term is used in the ORW statute, 10 V.S.A. § 1424a. The Board will therefore assume that all candidate waters that the parties describe as wetlands are waters eligible for ORW designation.

Out of thirteen candidate wetlands, eleven--Abbey Pond, Beaver Meadow, Beebe Pond, Big Mud Pond, Bourn Pond, Branch Pond, Little Pond, Little Mud Pond in Mount Tabor (Otter Creek Basin), Little Mud Pond in Winhall (Batten Kill Basin), Lost Pond Bog, and Lye Brook Headwaters and Meadows--exhibit unique features. These features, combined with the location of these wetlands in the GMNF, would be sufficient to designate these wetlands and any tributary waters as ORWs based on their water quality, provided the permitted current or planned activities on any inholdings associated with these waters support their designation as ORWs and provided further that these inholdings are included in any revised petition or excluded on proper grounds. As noted above, the designation of waters as ORWs as a result of their exceptional natural and recreational values under 10 V.S.A. § 1424a(e) requires their water quality to be maintained and protected under section 1-03.D of the Vermont Water Quality Standards. As discussed in the preceding paragraph, five of the eleven unique wetlands--Abbey pond, Beebe Pond, Big Mud Pond, Bourn Pond, and Branch Pond--are also unique as lakes. As the preceding paragraph further indicates, the two wetlands which do not readily appear unique as wetlands--both Little Mud Ponds--are unique as lakes as well.

With regard to the other candidate waters, the Board finds gaps in the evidence that must be filled before these waters may be designated as ORWs. The Petitioners argue that these waters merit ORW designation based not only on their water quality values, their position in the landscape, their location in roadless areas, their generally high water quality, and their situation in public ownership, but also a ragbag of additional information. The Board is not certain how the Petitioners selected the sixty-six waters at issue or how the Petitioners expect the Board to draw inferences about some candidate waters from others. Indeed, the Petitioners argue that it is

a combination of factors that supports ORW designation of the candidate waters, but the Petitioners have not made clear which combinations of factors are sufficient for ORW status and which candidate waters possess the appropriate associations.

The Petitioners argue that the watersheds draining into the candidate waters are located on "lands with *some of the lowest road densities* within the GMNF and the State of Vermont as a whole." (Pets' Supp. Findings at 3 (emphasis added).) Similarly, the Petitioners point to "*significant overlap* between the ORW candidate waters and United States Forest Service GMNF Roadless Inventory Maps." (*Id.* (emphasis added).) These statements are vague. Although the Board does not suggest a requisite road density for ORW designation, the Board cannot practically apply these generalities in the context of this case. In the same vein, the Petitioners argue that "many" of the candidate waters exhibit very good to excellent biological integrity and that "many" are in superior or above average condition. (*Id.* at 7.) With regard to wetlands, the Petitioners state that in "many cases," the candidate wetlands support uncommon species. (*Id.* at 14.)

The Board does not necessarily require biological surveys or site specific data with regard to all the candidate waters, and the Board agrees in concept that inferences about one water body's ecological values can be reasonably drawn from those of another with comparable watershed attributes. However, the Board must be able to understand why the candidate waters merit ORW designation in this case and how these inferences can be made. The Petitioners have not asked the Board to designate the candidate waters solely because they all share certain natural or recreational values. While these waters may all share certain relevant attributes, such as their location in the GMNF, the Petitioners have built their case by pointing to additional factors, such as the presence of threatened or endangered species. The Board is not prepared to conclude that all information that the record contains with regard to some waters applies to all others about which the Petitioners have said nothing specific.

The Petitioners have argued, for example, that the watersheds for the West and White Rivers provide historic salmon habitat and serve an important role in efforts to restore the Atlantic Salmon. However the Petitioners have not asked the Board to designate every tributary of the these rivers within the GMNF as an ORW, and it is unclear how the Petitioners selected a subset of these tributaries for ORW designation. The Petitioners point out that Beaver Meadow is a Special Area in the 1987 Forest Plan for the GMNF and that the area serves as habitat for rare plants. While that supports the designation of Beaver Meadow as an ORW, the Petitioners have not explained what kind of inferences can be made, if any, with regard to other candidate waters based on the ecology of Beaver Meadow. Presumably, the GMNF had some reason for classifying Beaver Meadow as a Special Area and for not applying this classification to other waters that the Petitioners propose for ORW status. The Petitioners provide a list of candidate streams that an Aquatic Classification Workgroup has identified as Exemplary Aquatic Communities. Here again, the Board presumes that the Workgroup chose not to identify other

streams that the Petitioners have proposed for ORW status as Exemplary. Thus, the Board does not assume that these other streams share the same qualities as those deemed Exemplary. This is especially so because the Petitioners have not explained the methodology that the Workgroup used and the characteristics of watersheds for candidate streams that did not earn the Exemplary label. In the same vein, the Petitioners seek to bolster their case by listing candidate waters that the GMNF has identified as Significant. In the absence of some countervailing reason, one must assume that the GMNF determined that other candidate streams that it has not labeled as Significant do not possess the requisite qualities to earn that designation. Thus, the Board cannot infer that these other candidate streams are similar to those labeled as Significant, as the Petitioners seem to argue. The Petitioners argue that some candidate waters fall within Source Protection Areas, which identify aquifers that supply public drinking water. It is unclear exactly how Source Protection Areas are identified and by whom, how many candidate waters are located within source protection areas, whether the candidate waters located in these areas recharge the underlying aquifers, or what if any kinds of inferences the Petitioners would like the Board to make from candidate streams labeled as Source Protection areas to candidate streams that are not. The Petitioners have argued that some candidate waters are located in old growth forests but have not identified which ones. Moreover, the Petitioners have not explained whether the location of a water in an old growth forest should be a deciding factor in the water's designation as an ORW, or whether or how this factor should be considered among others.

Except for the miles of roads in their watersheds, the record contains no particular information supporting ORW status for some twenty-five candidate waters: Beaudry Brook, Bee Brook, Black Brook, Blind Brook, Boyden Brook, Branch Pond Brook, Clark Brook, Deer Hollow Brook, Falls Brook, George Brook, Gulf Brook, Grindstone Brook, Kettle Brook, Lost Pond (Deerfield Basin), Lost Pond (Batten Kill Basin), Lyman Brook, Medbury Branch, North Alder Brook, Patterson Brook, Perkins Brook, Pine Brook, Puss and Kill Brook, South Alder Brook, and Wilder Brook. The Board notes that eight of these waters--Boyden Brook, Clark Brook, Falls Brook, George Brook, Gulf Brook, Patterson Brook, Perkins Brook, and Pine Brook--lie within the West and White River Basins, which are targeted for salmon restoration. However, the Petitioners have not explained why these eight streams, above and beyond others in these basins, are appropriate for ORW status. On what grounds is the Board to conclude that these eight waters, much less the remaining seventeen on the foregoing list of twenty-five, are ORWs?

As noted, ANR has determined that nine of the candidate streams exhibit biological conditions, as measured by species richness metrics, representative of the top eighteen percent of comparable streams in the state. However, ANR analyzed data from twenty-six candidate streams and therefore determined that seventeen of them do not fall within the elite eighteen percent. The Board therefore cannot reasonably infer that any of the candidate streams other than the nine identified by ANR fall within the top eighteen statewide in species richness or some other arguably suitable percentile.

In short, the Petitioners have not articulated the criteria by which they have selected candidate waters for ORW designation and by which they ask the Board to designate those waters as ORWs. To what extent are labels such as Exemplary or Significant extras that support designation over and above some baseline for ORW status, or to what extent do the Petitioners argue that these accolades are necessary for a designation of the water body at issue to occur? To the extent such descriptors are relevant at all, the Petitioners have failed to adequately explain how they support a legal conclusion that the waters to which they apply are exceptional, and the Petitioners imply that candidate waters lacking such labels fall short.

In any revised petition, the Petitioners must explain their criteria and how each of the candidate waters meets the test. A revised Petition needs to include an accurate list of candidate waters, including an organized tally of streams, lakes, and wetlands. The Board notes that throughout these proceedings, the Petitioners have not been able to consistently identify the number of water bodies (not including tributaries and associated waters) they have proposed for designation. Most recently, the Petitioners claim in their Supplemental Proposed Findings that sixty-seven water bodies are at issue. However, the Petitioners' most recent list of candidate waters includes sixty-six waters. The Petitioners have not made clear how many of these waters are streams, lakes, or wetlands or by what criteria the Board must evaluate the waters in each category. It will not be possible to write an order designating ORWs without being able to accurately identify the designated waters.

The Board suggests that the Petitioners reorganize their Petition to explain why each candidate water body merits ORW designation. Each water body should be listed, and all the reasons why each water body and its tributaries merit ORW status should be clear. If inferences are to be drawn about one water body based on the attributes of another water body, those inferences need to be made expressly, and the basis for making the inference must be explained. A reliable and precise explanation of the extent to which the candidate waters are located in roadless areas, or other unique landscapes, compared to other waters in the GMNF needs to be provided. It should be clear what kind of criteria the Petitioners used to select the candidate waters and how each water body selected measures up to these criteria.

V. Order

Accordingly, it is hereby Ordered:

1. The Petitioners' Motion to Clarify is Denied.

2. Objections to the Petitioners' late-filed evidence are sustained.

3. The Petition to designate waters in the GMNF as ORWs is denied in its entirety without prejudice.

Dated at Montpelier, Vermont, this 9th day of August, 2005.

WATER RESOURCES BOARD
By its Chair

/s/ John F. Nicholls

John F. Nicholls

Concurring:

Michael J. Hebert, Member
John D. E. Roberts, Vice Chair
Joan B. Nagy, Member

Lawrence H. Bruce, Jr., Member, dissenting:

The ORW statute provides, in part, that "…the board shall designate the waters as outstanding resource waters if it finds that they have exceptional natural, recreational, cultural or scenic values." 10 V.S.A. 1424a(e). These waters are "outstanding" in every sense of the word, readily meet the criteria set forth in the statute, should obviously be designated outstanding resource waters, and should be protected as such. The goal of the Board and the State of Vermont should be at all times to preserve, promote and protect water quality, especially with respect to waters such as these which have avoided degradation. Unfortunately, the decision of the majority misses a key opportunity to accomplish these goals. The environmental and economic costs which would result from any degradation of these waters far exceed any costs or losses which could come as a result of the possible restrictions placed on land uses by the ORW designation. Prevention of loss of water quality is always less expensive, environmentally and economically, than the losses and clean up costs which will inevitably follow.

In spite of any possible defects in the petition with respect to some of the candidate waters, the petitioners and ANR concurred that Austin Brook, Baker Brook, Bingo Brook, Bourne Brook, Goshen Brook, Lamb Brook, Muddy Branch of the New Haven River, Smith Brook, and the Winhall River are "outstanding resource waters." The Board should, at the very least, have approved the designation with respect to these waters. I would hope that the

petitioners take advantage of the opportunity offered by the "denial without prejudice," address the alleged shortcomings set forth in the majority opinion, and promptly re-file their petition.

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