

Strategic Conservation Efforts in the Newfound Watershed

The Newfound Watershed Master Plan



Holding the High Ground:

How much conserved land is enough in the Newfound Lake Watershed?

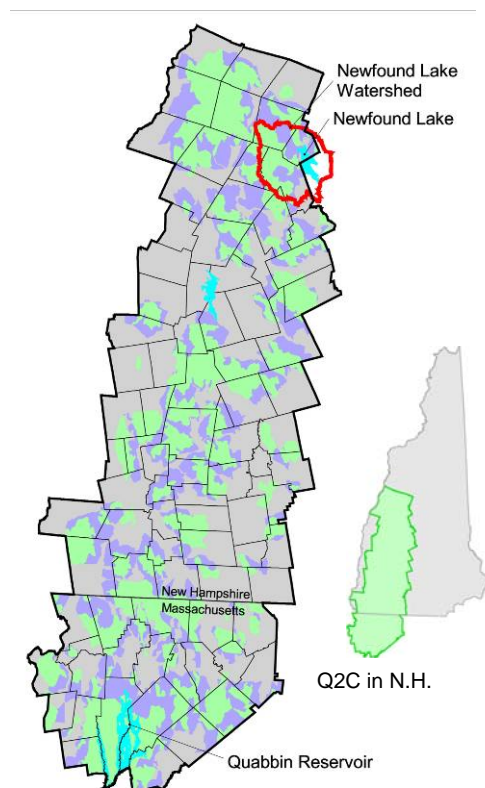
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A drive around the Newfound Lake watershed, or a view from the water, is an experience of sunlight on pristine water lapping at the edges of forested hills. It is green almost everywhere we look to the horizon, the green summer of New Hampshire. Even in drab winter dress, rugged wildness is there for the eye to feed upon. But what assurances do we have that those qualities will remain into the future? As in many other attractive, changing communities in New Hampshire, the question being posed is how to balance growth and development with protection of the very natural and scenic resources that give places such as Newfound Lake its *genius loci*, or spirit of place. Inside that question is another: how much land conservation is enough?

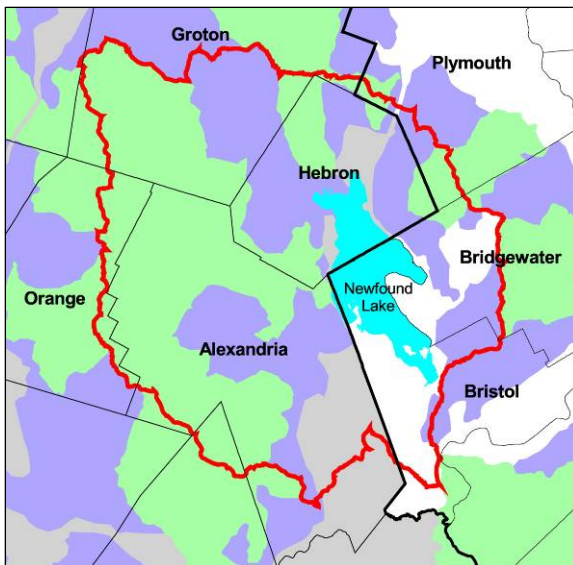
One way to answer that question is to understand *why* we conserve land, and then measure those goals against the landscape we care about. We protect land for wildlife habitat - both animals and plants, for its agricultural productivity and local food production, for the economic and ecologic values of unbroken forests, for the way it frames our view of the land, and perhaps most importantly for Newfound Lake and the nearly 140 miles of streams that feed it, for the sake of water quality. When we understand that all of the reasons given above are inextricably knitted together as a whole, we can see that the process of deciding where and what to conserve is a little more complicated than we might have thought.

The Forest Society and a broad group of local, state, and federal stakeholders has been grappling with this question of land conservation for the last few years in a 3,000-square-mile strategic planning area called the Quabbin-to-Cardigan corridor, or Q2C for short. This study area reaches from the southern edge of the White Mountains, follows the height of land between the Connecticut and Merrimack Rivers, all the way to the Quabbin Reservoir in north-central Massachusetts. Roughly 75% of the Newfound Lake watershed lies within this planning area. Recent geographic information system (GIS) mapping and analysis work to identify strategic conservation priority areas within the Q2C have brought the Newfound Lake region into sharper focus for expanded, collaborative conservation project planning.



The map at the right shows the entire Q2C planning area and its relationship to the Newfound Lake watershed (red), plus a series of conservation core focus areas (green) and supporting landscapes (lavender) that have been distilled from intensive analysis of more than twenty natural resource values identified by the Q2C stakeholder group. The core focus areas represent the highest priority for land conservation serving the Q2C vision: protecting large, intact forest blocks with significant embedded ecological features, as well as the supporting landscapes that work as buffers to further protect those values.

Each core focus area is delineated on-the-ground according to three inter-locking physical features: intact forest blocks, high quality stream watersheds, and N.H. *Wildlife Action Plan* habitat quality. These core areas represent the best-of-the-best strategic conservation options according to the Q2C vision, or about 20% of the total Q2C study area, thus guiding scarce conservation dollars to the right venues.



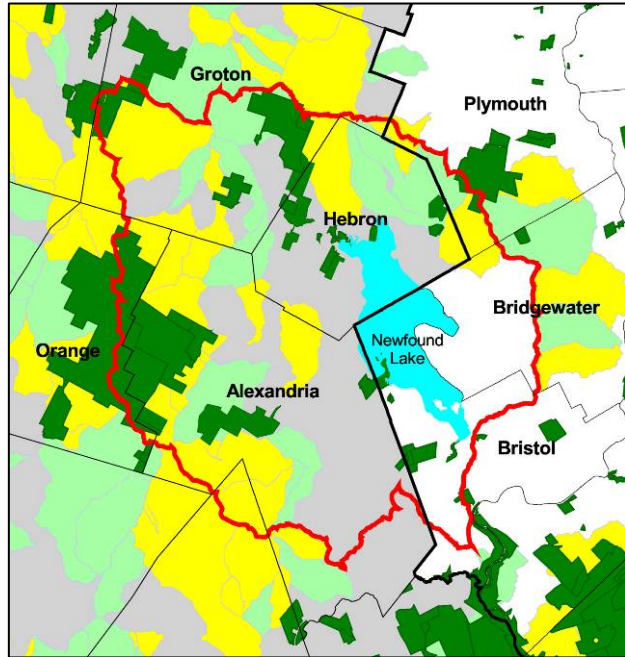
As the map on the left shows, Hebron, Groton, and Alexandria host extensive Q2C core focus areas and supporting landscapes within the Newfound watershed. Thanks to additional delineation of these areas in neighboring towns as part of the Q2C study, we can also see that parts of Plymouth, Bridgewater, Bristol and Danbury have important conservation focus areas which in effect create a “rampart” of high-value lands along the Newfound Lake watershed height of land.

Almost 28,000 acres, or 44% of the lake watershed is comprised of Q2C core focus areas; another 20,000 acres are important supporting landscapes. That means that *more than three-quarters of the entire watershed qualifies as top priority for land conservation according to the Q2C plan* – one of the nation’s most scientific, cutting-edge regional forest conservation plans.

Going back to the importance of water quality to Newfound Lake and surroundings, let’s look in more detail at the high quality stream watersheds that form part of the Q2C core focus areas. USGS mapped the recharge area for every stream tributary in the state as part of a New England region water quality modeling project in 2004 – nearly 7,300 in all in New Hampshire. While the intent of that study was to identify watersheds with nitrogen and phosphorous loading problems, we have “reverse-engineered” the data to tell us where the highest water quality is found. The **map to the right** shows the two highest ranked types of watersheds from that study. The yellow watersheds are near-pristine per U.S. EPA standards; the light green color shows watersheds with slightly

greater population density, but also very high water quality. The dark green shapes represent existing protected lands.

Three towns harbor the lion's share of high quality stream watersheds in the Newfound Lake watershed: Alexandria with about 12,700 acres, Groton with more than 8,100 acres, and Hebron with nearly 5,200 acres. Together that amounts to 56% of the combined land area of the three towns within the watershed contributing high quality water into the Lake ecosystem! However, just 5,200 acres (20%) of the total 26,000 acres of high quality stream watersheds are protected to date. Breaking that total figure down, Alexandria is only 18% protected, Groton is 16%, and Hebron has no permanently protected high quality watersheds



Meanwhile, the Forest Society is busy working to protect more of these important watersheds on the Cardigan Highlands project, a major initiative that will conserve nearly 9,300 acres of working forest in Groton and Hebron. When completed, an additional 3,500 acres of the Newfound Lake watershed will be permanently protected, and of that area, 2,800 acres fall into high quality stream watersheds feeding the lake.

Scaling up our vision, the Cockermonth River in Groton and Hebron, and the Fowler River in Alexandria are the two primary inlet tributaries to Newfound Lake, contributing roughly 70% of the total tributary flow. The watersheds of these two rivers have their headwaters in the largely forested, high water quality stream networks to the north and west of the lake. While both tributaries show excellent physical check-ups in recent studies completed by the UNH Center for Freshwater Biology, it should be clear that protecting water quality in the high ground above Newfound Lake will pay dividends in water quality in the lake itself into the future. In addition, much of the high-quality surface water is co-located with the core focus area lands identified by the Q2C project.

The Q2C strategic plan is not intended to be a complete water resources protection plan for the Newfound Lake watershed, but it does provide an excellent, science-based foundation and early indicators for where land conservation can begin, in the short-term. Combined with the consensus-based approach to stewardship of the Newfound Lake environment articulated in this Watershed Master Plan, and solid water quality data, these efforts will result in maintaining and managing natural land cover in the headwaters of the lake tributaries.