Natural Resource Protections

Federal Protections

1973's Federal Endangered Species Act (P.L. 93-205)

This Act protects endangered species of fish, wildlife and plants, and authorizes the federal government to maintain a list of those species which are endangered or threatened. No one is permitted to possess, sell or transport these listed species, and any person who violates the law may face legal penalties. Land and conservation funds may be used to conserve these species. Section 7 of the Endangered Species Act requires the federal government not to jeopardize the species, or modify their critical habitat. Recovery plans must be in place for listed species, and these plans must be reviewed every two years. If a species is delisted, it must be monitored for five years. The current list of federally endangered or threatened species documented in Vermont may be found online at website such as http://www.earthsendangered.com/search-regions3.asp.

State Protections

Act 250 - Geology

The rare and irreplaceable natural areas component of Criterion 8 of Act 250 may be the most relevant protection to geological ORVs, especially since geologic ORVs support rare natural communities and the plants and animals associated with them. Unusual or uncommon natural communities and significant geological features can be and have been protected under Act 250 Criteria. Unusual geological features have also been protected such as significant paleontological sites, and important areas for interpreting geologic history or processes. If a site contains rare, threatened, or endangered species it may qualify for protection. Under Criterion 8, the public's enjoyment of a protected natural area can also be protected, and Act 250 has provided isolation buffers, both auditory and visual, to protect the public's enjoyment of these natural areas. In the Missisquoi and Trout River basin, some ORVs that may be protected under this criterion include geological resources such as numerous Serpentine Outcrops and waterfalls and gorges (see the Act 250, Appendix 9, for more information).

Municipalities in Vermont have the authority to set protections for natural resources at the local level. These laws are presented in <u>Title 24, Chapter 117</u> of the **Vermont Statutes**. <u>24 V.S.A. §4401</u> states that all bylaws adopted under Chapter 117 must be consistent with goals established in law that includes the identification, protection and preservation of:

- significant natural and fragile areas;
- outstanding water resources (lakes, rivers, aquifers, shorelands, and wetlands);
- significant scenic roads, waterways, and views; and
- the quality of air, water, wildlife, and land resources²

Areas or features of geological significance may be designated as "fragile areas", per <u>Title 10</u>, <u>Chapter 158</u> of the Vermont Statutes. A Fragile Area is defined as "an area of land or water which has unusual or significant flora, fauna, geological or similar features of scientific, ecological or educational interest" (10 V.S.A. § 6551). If

the Fragile Area is on private land, the landowner receives a certificate and stewardship guidelines to protect and manage the features of the area. The <u>Vermont Fragile Area Registry</u> is a voluntary, non-regulatory program and therefore carries no legal provisions. The registry is intended to provide a mechanism for identifying and documenting fragile areas; aid in state, regional and local planning; and provide information and assistance to owners of these areas so they will not be inadvertently destroyed. Registration does not subject the area to public access.³ While designation of a feature as a "Fragile Area" bears no legal weight, inclusion of the area as a conservation priority in a town plan can help protect the feature from development activities (per <u>24 V.S.A Chapter 117</u>).

While the Fragile Areas Registry is currently static, and the Committee that reviews such areas is disbanded, Laurence Becker, Vermont State Geologist and Director of the Vermont Geological Survey/Division of Geology and Mineral Resources under the VT Department of Environmental Conservation suggests seeking listing of the geologic resources under the Fragile Areas Registry. According to the State statute, there has to be landowner agreement to register on private land. This could be a State protection to explore in the future if desired.

The Vermont Fish and Wildlife Department helps review resources which may be protected under Vermont's Land-use Development Law Act 250, Vermont's Endangered Species Law, Vermont Wetlands Conditional Use Determination, Army Corps of Engineers General Permit, Stream Alteration and Stream Crossing Permits, and Dam Safety Permits. Projects which impact the geologic natural resources would likely be reviewed by the VT Natural Heritage Program under the VT Department of Fish and Wildlife. The Heritage Program statutes are typically linked to protecting the biological components, so the habitats, such as these geologic features, would have to be key to the biological components such as rare plants or natural communities.

- Criterion 8 of Act 250 is likely the most rigorous protection for geologic resources unless there are rare, threatened and endangered species present
- Criterion 10 of Act 250, which ensures that projects adhere to adopted town plans, gives towns
 regulatory power in the permit review process. As previously stated, this Management Plan is nonregulatory. If this Management Plan was included in the town or regional plan, and compliance with
 the Plan was specifically mandated in the town or regional plan this Management Plan may then be
 seen as a 'regional plan' under Criterion 10. As this Plan was meant to be non-regulatory, towns
 could follow the recommendations listed as Opportunities for Action in this Management Plan, and
 adopt more stringent protections for geologic resources

Act 250 - Soil

Act 250's Criterion 4 is meant to protect soil erosion. Criterion 4 ensures that regulated construction activities do not result in erosion of soil and help maintain water quality. This Criterion also helps maintain the water quality and, as a result, enhances and maintains ORVs such as swimming, fishing and scenic beauty.

In addition, Criterion 9 protects productive agriculture soils from conversion to development. In as much as the Missisquoi and Trout River landscape is dependent upon a healthy and vibrant farm economy, maintaining the agricultural land uses in the basin is important.

Rare, Threatened and Endangered Species (RTEs)

Vermont's Endangered Species Law

The Vermont Natural Heritage Program is tasked with the protection of rare species and natural communities. In some cases, rare species and communities are dependent upon unique geological features (such as serpentine outcrops4), which, in turn, become protected by their association with the rare species or community. Species with a State status of Threatened or Endangered are protected by Vermont's Endangered Species Law (10 V.S.A. Chapter 123). The law states that it is unlawful for anyone to "take, possess or transport wildlife or plants that are members of an endangered or threatened species" and allows the Secretary of ANR to adopt rules for the conservation and protection of listed species, which includes protection of their habitat (10 V.S.A. § 5403).

State and global conservation ranks are informational categories regarding the rarity and extirpation/extinction risk of species or natural communities. The ranking system is used by conservation biologists worldwide, as it's an effective way to communicate the rarity of species and communities across habitat types and political boundaries. For species management, the ranks provide a way to prioritize conservation efforts for species or communities that may not be currently listed as Threatened or Endangered - designations which carry the legal ramifications described above. A brief explanation of these ranks can be found in the Natural Resource ORV chapter of this Plan. For a more thorough explanation of ranks and ranking, see the Vermont Natural Heritage Program's website².

To assign State-level rankings in Vermont, members of Scientific Advisory Groups to the Vermont Endangered Species Committee set ranks for birds, mammals, fishes, reptiles and amphibians, invertebrates and natural communities. The rankings are periodically reviewed and updated as needed. Global ranks are developed and reviewed by NatureServe and its international network of natural heritage data centers (which includes the Vermont Natural Heritage Program).

A full discussion of tools available to municipalities for conservation may be found in Chapter 7 of "Conserving Vermont's Natural Heritage," a publication of the Vermont Department of Fish and Wildlife².

Table A4.1. State and Global Ranks and Ranking Definitions. Ranks are assigned that best characterize the relative rarity or endangerment of a native group (taxon) within Vermont's geographic boundary (State Ranking) or throughout its range (Global Ranking).

State/ Global Rank	Rank Definition				
1	Very rare (Critically imperiled); At very high risk of extinction or extirpation due to extreme rarity (often 5 or fewer populations or occurrences), very steep declines, or other factors				
2	Rare (Imperiled); At high risk of extinction or extirpation due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors				
3	Uncommon (Vulnerable); At moderate risk of extinction or extirpation due to restricted range, relatively few populations or occurrences (often 80 or fewer), recent and widespread declines, or other factors				
4	Common to uncommon (Apparently secure); locally common or widely scattered to uncommon, but not rare; some cause for long-term concern due to declines or other factors; or stable over many decades and not threatened but of restricted distribution or other factors				
5	Common (Secure); widespread and abundant				
Addition	ıl Rankings				
н	Possibly extinct/extirpated; Missing; known from only historical occurrences but still some hope of rediscovery				
х	Presumed extinct/extirpated; Not located despite intensive searches and virtually no likelihood of rediscovery				
U	Unrankable; Currently unrankable due to lack of information or substantially conflicting information about status				

Appendix 4. Natural Resource Protections - Page 3

Act 250 - Plants and Animals

Act 250's Criterion 8A protects endangered species. The State of Vermont and federal government maintain lists of legally Threatened and Endangered Species of plants and animals. Criterion 8A protects these species. Some of these species are part of natural communities, such as the Serpentine Outcrop ORVs, and significant natural communities within the Wild and Scenic Study Area.

Act 250 - Natural Communities (Significant Ecological Areas)

Act 250's Criterion 8A protects rare and irreplaceable natural areas. Rare and irreplaceable natural areas are essentially defined as areas where 1) natural processes dominate over human process; 2) areas with identifiable vegetation; and 3) areas which are unlikely to reoccur in the foreseeable future. Unusual or uncommon natural communities and significant geological features have been protected under Act 250 Criteria. Alpine plant communities, bogs, fossil quarries, and ledge communities are examples of areas protected under Criterion 8A. Unusual geological features can also be protected such as a significant paleontological site, or important area for interpreting geologic history or processes. If a site contains rare, threatened, or endangered species it may qualify for protection. Under this criterion, the public's enjoyment of a protected natural area can also be protected, and Act 250 has provided isolation buffers, both auditory and visual, to protect the public's enjoyment of natural these areas.

In the Missisquoi and Trout River basin, some ORVs that may be protected under this Criterion include: numerous Serpentine Outcrops, Haystack Mountain alpine flora, and waterfalls and gorges (see the Natural Resources ORV chapter for more information).

Vernal pools are significant ecological areas protected under Vermont's wetland laws. Under Vermont's Wetland Rules, vernal pools are considered significant wetlands under wildlife habitat, Section 5.4. Typically considered Class II wetlands, they are required to have a 50 foot buffer. Citizens and community groups may petition the Water Resources Panel to reclassify wetlands in order to recognize their importance to communities and ecosystems, as well as establish greater protections for them. Jim Andrews, Coordinator of the <u>Vermont Reptile and Amphibian Atlas</u> promotes the Best Management Practices for Vernal Pools which may be found, along with more information about wetland protections, in the Water Quality Protections Appendix 5 of this Management Plan.

Act 250 - Critical Wildlife Habitats

Act 250's Criterion 8A also protects necessary critical wildlife habitat. Necessary wildlife habitat has become defined as "concentrated habitat which is identifiable and is demonstrated as being decisive to the survival of a species of wildlife at any period in its life including breeding and migratory periods." In effect, protecting "necessary wildlife habitat" protects wildlife habitat that if removed from the Vermont landscape would cause the decline and eventually the loss of a species of wildlife (both game and hunted species but also non-game or non-hunted species). Habitats such as deer wintering forests, Bicknell's thrush habitat, beech stands, wetlands that serve as important seasonal feeding habitats for bears, heron rookeries, gravel, vernal pools, and stream and river waters have been protected as important wildlife habitat. Act 250 seeks to determine if a regulated activity "destroys or significantly imperils wildlife habitat" and balances that loss with attempts by the developer to lessen or "mitigate" the loss of habitat and to measure the benefit to the public of the wildlife habitat.

Appendix 4. Natural Resource Protections - Page 4

Types of ORVs that are protected under Criterion 8A include: in-stream fish habitat; high elevation (generally over 2,700 feet) spruce-fir forests that harbor unique high-elevation birds species (including the Bicknell's thrush breeding habitat); peregrine falcon and heron rookeries; deer wintering habitat (typically conifer forests); bear habitat (beech/oak stands and certain wetlands); and vernal pools. Rare, threatened and endangered animal species that are currently, or will be identified in the future, will also be protected under this criterion. Any newly identified significant natural community will also be protected under Criterion 8A. The State of Vermont Natural Heritage Program tracks these communities as well as rare plants and animals (Please see the Natural Heritage Information Project through the VT Fish and Wildlife Department (http://www.vtfishandwildlife.com/) for more information.

Towns and Villages (Local Protections)

Towns and villages in Vermont have the opportunity to protect natural resources at the local level under existing State statutes and programs. Many of these protections are fully realized through adoption of town plans, which can become regulatory documents in some instances (such as the Act 250 permit review process). Notably, all of the Study towns and villages already have adopted town plans and zoning bylaws. If something in a Town Plan is listed as locally significant then its protection would depend on zoning. Some town plans have natural resources listed; however, it is unclear how forceful protections are without accompanying zoning if someone threatened the existence of the feature.

There are some town-owned lands which protect natural resources such as the Enosburg Falls Village Forest in Berkshire along the Trout River, and the Jay Peak State Forest in Jay along Black Falls Brook and Jay Branch (both listed as important in the VT Rivers Study).

Five of the ten Study area towns have language in their town plans regarding the conservation of rare, threatened or endangered (RTE) species and their habitat (Table A4.2 below). Only four towns have provisions for RTE species and habitat conservation in their zoning bylaws.

Berkshire

Berkshire defines critical areas in a similar fashion to Richford, also including areas of geological significance in their Town Plan (adopted 4/26/10). The Berkshire Town Plan notes three geological areas of unique and fragile character – Ayers Hill, the Berkshire Copper Mine, and the Berkshire Kettle Hole. It is the intent of the Town to protect these and other geological sites from development that "would affect their character, value, and integrity. Controlled public access, in cooperation with private landowners, should be encouraged for educational and scientific pursuits.

Berkshire's Town Plan reports three known occurrences of rare species in Town, but presents no specific management priorities for their habitats.

Enosburgh/Enosburg Falls

Enosburg Falls' Village Plan (adopted by the Trustees 8/26/08) includes a section (8.3) on site preservation and erosion control, in which the plan states that natural features of the site, including "unique geologic features... which the Development Review Board determines are assets to the site and/or the community shall be preserved."

The Town Plan for Enosburgh (approved by the Selectboard 9/9/08) highlights the importance of natural features, including geological areas, in Chapter 8. Geological areas are also part of the Town's Zoning Bylaws, as part of the Natural Resources Overlay District (Section 570 of bylaws). The District's description emphasizes "significant geologic features, unusual or important plant and animal qualities of scientific, ecological, or educational interest make lands in this district unsuitable for intensive development because of their local, statewide, national and global significance". The Town has the authority to limit development in this district in order to preserve the scenic and natural resource values of these lands.

Enosburgh includes the presence of RTEs as one of the reasons to apply its Natural Resources Overlay District (Section 570), which requires land uses and development to be compatible with needs of the RTE species and its habitat. Section 8.10 of the Enosburg Falls Zoning Bylaws require that proposed development projects in the Village take measures to protect natural areas, including known habitat of endangered species, by incorporating them into common areas or by avoiding development in those areas.

Jay

Lists Jay Branch as a scenic view/vista area, this would include Jay Branch Gorge. Little is stated specifically about geologic resources in the Jay Town Plan (adopted by the Selectboard 12/20/10).

Lowell

The Lowell Town Plan (re-adopted 4/14/09) mentions encouraging development methods that "preserves trees, outstanding natural topography and geologic features and prevents soil erosion" for construction of Planned Unit Development (PUDs).

Montgomery

Montgomery is the only Study Town that does not mention the preservation of geological features in either its Town Plan (amended and updated 8/2010) or Zoning Bylaws.

The Town of Montgomery's Town Plan lists (on page 9) a policy to provide protection and stewardship for wetlands and waterways, and the rare species that they contain, as part of the Town's goal of Natural Resource conservation. Montgomery's Zoning Bylaws (Sections 6.6.3.2) have requirements that wireless telecommunication towers greater than 20 feet high may not be placed in RTE species habitat.

Richford

Richford defines critical areas in their Town Plan (2007) as "natural areas requiring special protection from development. They include areas that have environmental, ecological, educational, and/or scenic value, such as…areas of biological, hydrological, or geological significance." The Plan notes that the Richford Mineral Area is the most significant geological site in Town; this well-known mineral collection site is approximately 10 acres in area.

In the Richford Town Plan (page 73), RTE species discussion focuses mainly on the expansive deer yards in the Town. Of importance to the Wild & Scenic Study rivers, many of these yards are located around waterways, including the Missisquoi River. The Richford Town Plans also mentions the presence of the rare fantail darter

Appendix 4. Natural Resource Protections - Page 6

(S3, G5) in the Missisquoi River, and that this fish's habitat should be protected through local land use planning.

Troy/North Troy

The Town of Troy and the Village of North Troy have a combined Town Plan (adopted 3/20/08) and Zoning Bylaws. The Troy Town Plan (which includes North Troy) describes Big Falls, Bakers Falls, Jay Branch Gorge and the Troy Four-Corners Swimming Hole as unique features of the Town but does not have language about their preservation or protection.

Troy's Town Plan (page 33) mentions several natural areas with rare species located in Town. Three sites containing RTE species have been identified through species inventories by the Vermont Natural Heritage program. One of these is Big Falls Natural Area and State Park, which contains many species of rare plants. As for locations under private ownership, the Troy Planning Commission "feels it would be unfair to restrict property owners' rights on certain properties simply because their property has been inventoried," and no other RTE management considerations are included in the Plan.

Westfield

The Westfield Town Plan (adopted 11/16/09) mentions one geological feature in the Town – Balance Rock – and notes that the feature is currently in private ownership.

Westfield's Town Plan (page 28) mentions several natural areas with rare species located in Town. In the Westfield Town Plan, the floodplain forest at the confluence of the Missisquoi River and Mineral Spring is noted for having several rare plants. Additional RTE habitats in Town include Jay State Forest, which has Bicknell's thrush nesting sites (S2B, G4) and the Hazen's Natural Area and State Park, which contains a boreal calcareous cliff natural community (S2), peregrine falcon nests (S3B, G4), and many rare plants. The Town of Westfield intends to use these locations identified by the Vermont Natural Heritage Program as "red flags" to indicate the need to involve NHP biologists if development is proposed with these sites. These areas will also help the Town to identify areas of significant local value for the Town, and places to consider acquisitions of conservation easements, right-of-ways, or cooperative agreements with landowners to secure long-term access. Westfield's Zoning Bylaws (Section 324.06) have requirements that wireless telecommunication towers greater than 20 feet high may not be placed in RTE species habitat.

Table A4.2. Presence of protections in town zoning regulations. Please see the Natural Resource Protections section of this Management and the town plans and zoning bylaws for the most up-to-date information.

Town	Geological features mentioned in Town Plan?	Geological features addressed in zoning bylaws?	Rare, threatened or endangered species or natural communities mentioned in Town Plan?	Rare, threatened or endangered species or natural communities addressed in zoning bylaws?
Berkshire	Yes The Berkshire Town Plan notes three geological areas of unique and fragile character. It is the intent of the Town to protect these and other geological sites from development that "would affect their character, value, and integrity	No	Yes Rare species are present in Town	No
Enosburg Falls	Yes Enosburg Falls' Town Plan includes a section (8.3) on site preservation and erosion control	No	No Enosburg Falls mentions RTE species in the Town Plan, but only to state that they have not yet been documented in the Town	Yes SECTION 8.10 SIGNIFICANT NATURAL AREAS AND FEATURES: A) Natural areas containing rare or endangered plants and animals, as well as other features of natural significance exist throughout the Village. Subdivision and site plan applicants shall take all reasonable measures to protect significant natural areas and features either identified in the Village Planavoiding their disturbance in areas proposed for development
Enosburgh	Yes The Town Plan for Enosburgh highlights the importance of natural features, including geological areas, in Chapter 8.	Yes Geological areas are also part of the Town's Zoning Bylaws, as part of the Natural Resources Overlay District (Section 570 of bylaws)	No	Yes Enosburgh includes the presence of RTEs in Natural Resources Overlay District (Section 570), which requires land uses and development to be compatible with needs of the RTE species and its habitat

Table A4.2. Cont.

Town	Geological features mentioned in Town Plan?	Geological fea- tures addressed in zoning by- laws?	Rare, threatened or endangered species or natural communities mentioned in Town Plan?	Rare, threatened or endangered species or natural communities addressed in zoning bylaws?
Montgomery	No	No	Yes NATURAL FEATURES - Provide for long-term stewardship and protection of wetlands and waterways that have significant functions and values for rare species habitat, wildlife habitat, or natural communities and prevent additional loss of wetlands within the Town additions to the Non-Game and Natural Areas inventory should inform planning and development decisions in Town to conserve or otherwise protect those species and their habitatsTravel corridors can serve local populations of wildlife, or species with wide ranging habitat requirements. Efforts should be made to identify and map wildlife travel corridors in Town in an effort to protect these linkages between larger areas of core habitat	Yes Freestanding telecommunications towers or antennas over 20 feet in elevation may not be located in the habitat of any State listed Rare or Endangered Species (6.3)
Richford	Yes Richford defines critical areas in their Town Plan as "natural areas requiring special protection from development.	No	Yes Deer yards and other important wildlife habitat should be considered by local officials when making land use planning and development decisions. Once on the Vermont Natural Heritage Program's list of rare communities, the habitat of the fan-tailed darter fish should be protected in local land use planning. Deer yards and other important wildlife habitat should be considered by local officials when making land use planning and development decisions. The need to encourage conservation of these areas cannot be overstated.	No

Appendix 4. Natural Resource Protections - Page 9

Table A4.2. Cont.

Town	Geological features mentioned in Town Plan?	Geological features addressed in zoning bylaws?	Rare, threatened or endangered species or natural communities mentioned in Town Plan?	Rare, threatened or endangered species or natural communities addressed in zoning bylaws?
Jay	Yes Lists Jay Branch as a scenic view/vista area, this would include Jay Branch Gorge. Little is stated specifically about geologic resources in the Jay Plan.	No	No	No
Lowell	Yes The Lowell Town Plan mentions encouraging development methods that "preserves trees, outstanding natural topography and geologic features and prevents soil erosion" for construction of Planned Unit Development (PUDs).	No	No	No
Troy/ N. Troy	Yes The Troy Town Plan (which includes North Troy) describes Big Falls, Bakers Falls, Jay Branch Gorge and the Troy Four- Corners Swimming Hole as unique features of the Town but does not have language about their preservation or protection.	No	Yes The Vermont Non-game and Natural Heritage Program through the Vermont Department of Fish and Wildlife tracks and monitors sites that have either been identified as State-significant natural communities or include rare, threatened or endangered plant or animal species. This information is reviewed in permitting processes such as Act 250. The Planning Commission feels it would be unfair to restrict property owners' rights on certain properties simply because their property has been inventoried.	No

Table A4.2. Cont.

Town	Geological features mentioned in Town Plan?	Geological features addressed in zoning bylaws?	Rare, threatened or endangered species or natural communities mentioned in Town Plan?	Rare, threatened or endangered species or natural communities addressed in zoning bylaws?
Westfield	Yes The spine of the Green Mountains runs through the western side of Town. Hazen's Notch State Park/ Natural Area, a steepwalled gap, lies between Sugarloaf and haystack mountains. Cliffs of serpentine rock support rare alpine Plant species and has historically been a nesting place for peregrine falcons	No	Yes The Vermont Natural Heritage Program has identified sites including rare, threatened and endangered species, and significant natural communities in the Town. The Hazen's Notch area is particularly unique. Another area of significant importance is near the confluence of the Missisquoi River and Mineral Spring Brook. This floodplain forest is the site of several rare plants. Inside Jay State Forest is a boreal outcrop on the top of Jay Peak. A State-threatened plant species, the Great Laurel or Giant Rhododendron grow near the Westfield - Troy line. Close to the Lowell - Westfield border is a serpentine outcrop community, Brown's Ledges, where the Green Mountain Maidenhair Fern was discovered. This plant species has a global significance: there are fewer than six known sites in the world, and all are in Vermont. The Natural Heritage site designations on the map should be used as red flags which indicate the need to contact biologists with the Vermont Natural Heritage Program if there is development proposed with the site	Yes Additionally, freestanding telecommunications towers or antennas over 20 feet in elevation may not be located in any of the following locations: A. The habitat of any State listed Rare or Endangered Species

Endnotes

- 1. Title 24, Ch. 117 of the Vermont Statutes "Municipal And Regional Planning And Development": www.leg.state.vt.us/statutes/sections.cfm?Title=24&Chapter=117
- 2. "Conserving Vermont's Natural Heritage" is a publication of the State of Vermont Department of Fish & Wildlife. Available online: www.vtfishandwildlife.com/library/maps/Community_Wildlife_Program/complete.pdf
- 3. Some text taken from Addison County, VT Regional Plan: http://www.acrpc.org/pages/publications/Reg_Plan/NR_2.htm
- 4. For description of Serpentine Outcrops, see thee Natural Resource ORV Geology Section of this document, or visit: http://www.vtfishandwildlife.com/books.cfm?libbase = Wetland, Woodland, Wildland
- 5. http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=10&Chapter=123&Section=05403
- 6. NatureServe website: www.natureserve.org