

GUIDELINES FOR THE REVIEW & MITIGATION
OF IMPACTS TO SIGNIFICANT BLACK BEAR HABITAT
IN VERMONT

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VERMONT FISH & WILDLIFE DEPARTMENT
AGENCY OF NATURAL RESOURCES



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I. Introduction:

This document provides Vermont Department of Fish & Wildlife (DFW) wildlife biologists with guidelines to ensure consistent, objective application of mitigation measures where is

threatened from some forms of development. These guidelines are specifically intended for the development of biological opinions in the Act 250 process and other local, state, and federal regulatory processes that apply to the protection of bear habitat in Vermont. Furthermore, these guidelines set forth a decision-making framework by which DFW determines the level of impact and necessary avoidance, minimization and mitigation/compensation measures that apply to a proposed development's impact on bear habitat. Therefore, these guidelines are used to make recommendations to Act 250 District Environmental Commissions and other local, state and federal regulatory decision-makers for permit conditions, mitigation agreements, land conservation instruments (e.g., easements), and, if necessary, permit denials.

These guidelines are designed for application on a case-by-case basis in order to allow for the use of professional judgment and discretion by the DFW. For example, some impacts may be relatively minor and thus, may not require habitat compensation in perpetuity. In some cases, restrictions on timber harvesting in or adjacent to a bear-scarred beech concentration area, or habitat protection for a specified period of time (e.g., for the life of the permit) may be sufficient to mitigate relatively minor impacts to the habitat. These determinations will be made by DFW and will be based on past precedent and individual circumstances. These guidelines are based on scientific research regarding black bear behavior and response to

These guidelines are consistent with and derived from the Agency of Natural Resources' Conservation Procedure (1996), the DFW's Position Regarding Wildlife Habitat Impact Assessments in the State of Vermont (1998), Vermont Environmental Board precedent, and the language of 10 V.S.A. section 6086 ((8)(A)(i-iii)).

Background

Black bears require large tracts of remote forests in order to meet their range and energy needs. Bears have adapted their feeding habits to take advantage of the various foods available throughout the year. Two forms of seasonal foods – herbaceous vegetation found in wetlands in the spring and hard mast in the fall - are critical to bear survival and productivity. Consequently, wetlands and beech/oak stands that are used by bears are considered necessary habitat.

Bears also need free access to these critical food supplies throughout their home range. Travel corridors are necessary habitat in providing the spatial, reproductive, and energy needs of black bears. As a result, bears develop a fidelity to specific travel corridors.

Satisfying the habitat requirements of black bears concomitantly maintains the ecological systems necessary for a multitude of fish, animal, invertebrate, and plant species. As a result, the black bear also serves as the foundation for a natural resource base providing maximum biological diversity.

The Fish and Wildlife Department's "Policy and Programs on development Impacts of Habitats" places habitat types into one of three resource categories (RC's) which determines the appropriate mitigative options. All critical black bear habitat will fall into RC3 (high to medium value, relatively scarce or becoming so regionally) except for those considered unique which will be classified RC2 (high value, unique, and irreplaceable on a

regional basis). An RC2 designation requires that there be no net loss of in-kind habitat values of the critical habitat. However, even with RC3 sites, where impacts may be compensated for within habitats off-site, priority is given to mitigating within the impacted habitat.

In addition, except for travel corridors, impacts should be categorized as direct (e.g., roadway or housing construction) or indirect (e.g., disturbance to bears by human activity). Neither direct nor indirect impacts should be allowed in RC2 designated areas, except for insignificant intrusions or when outstanding mitigation opportunities are presented. Direct and indirect impacts are permitted in RC 3 areas, provided that all impacts are compensated for.

Mitigation ratios (number of acres protected for each acre impacted) specific to each habitat type promote to avoidance of impacts and, preferably, compensate for them within the same habitat. In addition, off-site mitigation is restricted to within the boundaries of the black bear habitat unit (see Figure 1) in which the impacted habitat is located. Habitat units are the geographical areas generally defined by heavily traveled roads, which encompass a resident population of bears.

The mitigation ratios are not punitive, but are designed to yield the proportion of critical black bear habitat necessary to maintain state bear population objectives as established in the current Black Bear Management Plan for the State of Vermont. The ratios incorporate anticipated frequencies of mitigation and changes in habitat value of protected black bear habitat when manage as a result of mitigation.

In assessing the mitigation options for each critical black bear habitat type, the following “Project Evaluation Process” should be routinely applied (refer to Figure 2 as well).

STEP 1. Is and alternate site, on or off the project parcel, available to construct the project? **If yes**, the neither direct nor indirect impacts should be allowed, except for insignificant intrusions. **If no**, then go to step 2.

STEP 2. Is the project site directly or indirectly impacting a critical black bear habitat, or a portion thereof, that has unique or irreplaceable public values on a regional basis? These values vary by habitat type, but may include the following criteria. The habitat: provides a relatively significant contribution to the welfare of the habitat unit’s bear population; exhibits evidence of heavy use by bears; or, is relatively remote and faces no imminent threats to its integrity. **If yes**, then the habitat should be designated RC2 and neither direct nor indirect impacts should be allowed, except for insignificant intrusions. **If no**, the habitat should be designated RC3 and then go to step 3.

STEP 3. Is the applicant willing to apply feasible and reasonable mitigation? **If yes**, then apply guidelines below for direct and/ or indirect impacts. **If no**, then no direct or indirect impacts should be allowed, except for insignificant intrusions.

MITGATION GUIDELINES FOR BEECH AND OAK STANDS

Beech stands representing necessary black bear habitat are defined as those stands that exhibit bard scarring made within the past ten years and include at least 15 to 25 scarred

beech trees. Oak stands serving as necessary black bear habitat are these stands of at least 15 to 25 oak trees of 12 inches or greater in diameter having a record of bear use.

Beech and oak stands that satisfy these requirements are categorized into RC 2 and RC 3 levels. Beech/oak stands that provide a relatively significant contribution of hard mast for the bear population in the habitat unit are unique and irreplaceable on a regional basis and are designated as RC2 habitats. These stands are usually large in size, exhibit high to moderate levels of historical (>3 years) as well as fresh (<3 years) use, and are not presently impacted by existing development of human activity.

RC 3 beech/oak stands are all others that meet the definition of necessary bear habitat, except those that (1) exhibit low levels of historical use and no current use; (2) exhibit low levels of historical and current use and have been significantly impacted by recent development.

Direct impacts on beech/oak stands are defined as those impacts resulting from the construction of the project within the boundaries of the beech/oak stand that directly impact the productivity and bear use of the stand. Indirect impacts result when the project is located within a predetermined buffer zone of no greater than one-half mile and no less than one-quarter mile distance from the beech/oak stand boundary. The district wildlife staff determines buffer zone distances less than one-half mile only after a favorable evaluation of factors such as topography and vegetative cover. Any penetration of the buffer zone is at the discretion of the district wildlife staff.

The magnitude of the indirect impacts from the project is determined by estimating a “zone of influence” from the development that may range up to one-half mile in distance. Topography, vegetative cover, seasonal restrictions, and the type of development proposed will factor in determining the project’s zone of influence.

RESIDENTIAL UNITS

When Direct and/or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC 2 designated beech/oak stands. If, however, the Project Evaluation Process results in an RC 3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Creation of a homeowners’ association to implement mitigation practices when common land exists in the development or subdivision. Otherwise, deed covenants will be required.
2. If all residential units are beyond the predetermined buffer zone, no forest management plan is necessary. However, forest management activities within the beech/oak stand may only be conducted with prior written approval of the Fish and Wildlife Department. If vegetation permits a buffer zone of less than one-half mile, forest management activities within the buffer also require prior written approval of the Fish and Wildlife Department.
3. If any residential units are sited within the predetermined buffer zone, for every acre of critical beech/oak stand directly and/or indirectly impacted by the project (based on the estimated zone of influence), four acres of beech/oak stand must be protected and managed in perpetuity. Impacts of habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must

contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. If the mitigation lands are to be retained by the applicant, a management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s) or homeowners' association. No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).

4. No further subdivision of the remaining beech/oak stand can occur and must be so stated in the deed.
5. Travel by off roads recreational vehicles (ORV's) will no be allowed unless approved by the Fish and Wildlife Department and restricted to permitted trails.

COMMERCIAL DEVELOPMENTS

When Direct and/or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated beech/oak stands. If, however, the Project Evaluation Process results in and RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Creation of deed covenants requiring implementation of all mitigation practices.
2. If all development is sited beyond the predetermined buffer zone, no forest management plan is necessary. However, forest management activities within the beech/oak stand may only be conducted with prior written approval of the Fish and Wildlife Department. If vegetation permits a buffer zone of less than on-half mile, forest management activities within the buffer also require prior written approval of the Fish and wildlife Department.
3. If any development is sited within the predetermined buffer zone, for every acre of critical beech/oak stand directly and/or indirectly impacted by the project (based on the estimated zone of influence), four acres of beech/oak stand must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. If the mitigation lands are to be retained by the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be stated in the deed/easement).
4. No further subdivision of the remaining beech/oak stand can occur and must be so stated in the deed.
5. Travel by off road recreational vehicles or (ORV's) will not be allowed unless approved by the Fish and Wildlife Department and restricted to permitted trails.

EXTRACTION OF EARTH RESOURCES

When Direct and/or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated beech/oak stands. If, however, the Project Evaluation Process results in an RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. If all development is sited beyond the predetermined buffer zone, no forest management plan is necessary. However, forest management activities within the beech/oak stand may only be conducted with prior written approval of the Fish and Wildlife Department. If vegetation permits a buffer zone of less than one-half mile, forest management activities within the buffer also require prior written approval of the Fish and Wildlife Department.
2. If any earth resources extraction is sited within the predetermined buffer zone, for every acre of critical beech/oak stand directly and/or indirectly impacted by the project (based on an estimate of the zone of influence), four acres of beech/oak stand must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s). No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).
3. Indirect impacts, and their mitigation requirements, can be lessened by prohibiting site clearing and earth resource extraction during the period September 1 to December 1.
4. All roads accessing the extraction site must be gated to effectively limit motor vehicle use.

TRANSMISSION LINES

When Direct and Indirect Impacts Occur

No direct impacts are allowed on RC2 designated beech/oak stands. If, however, The Project Evaluation Process results in and RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. For every acre of critical beech/oak stand directly impacted by the removal of bear-scarred beech trees or oak trees, four acres of beech/oak stand must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of

the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s). No mitigation acreage is necessary if no scarred beech trees or oak trees are removed in clearing the transmission line corridor.

2. Transmission line corridor width should be limited to 100 feet, whenever possible.

When Only Indirect Impacts Occur

Indirect impacts on both RC@ and RC3 designated beech/oak stands are considered insignificant intrusions that can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Clearing and maintaining transmission lines within the predetermined buffer zone of an RC2 beech/oak stand is prohibited from September 1 to December 1. Logging within RC3 stand buffers can occur during the period September 1 to December 1.

UPGRADE OF EXISTING LINES

1. Direct impacts are not allowed on either RC2 or RC3 beech/oak stands and, therefore, the corridor may not be widened. The utility company must stay within the existing corridor by using a different tower design. All construction in RC2 stands and their buffers is prohibited from September 1 to December 1.

HIGHWAYS

When Direct and/or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated beech/oak stands. If, however, the Project Evaluation Process results in an RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. If the highway is sited within the predetermined buffer zone, for every acre of critical beech/oak stand directly and/or indirectly impacted by the project (based on an estimate of the zone of influence), four acres of beech/oak stand must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. If the mitigation lands are to be retained the applicant, a management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s). No management plan is required if the applicant conveys the mitigation

lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).

2. The zone of influence for highways may extend to all necessary beech/oak stands located within that portion of the habitat unit fragmented by the highway. District wildlife staff will determine whether the highway will effectively fragment the unit so that portions are no longer large enough to serve as black bear habitat. Impacts on all critical beech/oak stands fragmented by the highway will be included in the estimate of impacted habitat when determining the mitigation acreage required. Mitigation measures for highways may include the protection of travel corridors.
3. Roads must be constructed to conform to the restricted access classification, thereby prohibiting the development of future spur roads interconnecting the new highway.

SKI TRAILS AND CHAIRLIFTS

When Direct and Indirect Impacts Occur

No direct impacts are allowed on RC2 designated beech/oak stands. If, however, The Project Evaluation Process results in and RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. For every acre of critical beech/oak stand directly impacted by the removal of bear-scarred beech trees or oak trees, four acres of beech/oak stand must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s). No management plan is required if the applicants conveys the mitigation lands to the public natural resources agency or qualified and approved private no-profit conservation organization (the intent of the easements should be so stated in the deed/easement). No mitigation acreage is necessary if no scarred beech trees or oak trees are removed in clearing the ski trails or chairlift lines.
2. Indirect impacts and their mitigation requirements can be lessened by prohibiting the construction and maintenance of ski trails or chairlift lines located within the predetermined buffer zone during the period September 1 to December 1. In addition, no snowmaking is permitted prior to December 1.

When Only Indirect Impacts Occur

Indirect impacts on both RC2 and RC3 designated beech/oak stands are considered insignificant intrusions that can be accommodated when the following guidelines are applied.

1. Construction and maintenance of ski trails or chairlift lines located within the predetermined buffer zone is not permitted during the period September 1 to December 1. In addition, no snowmaking is permitted prior to December 1.

LOGGING ABOUT 2500 FEET IN ELEVATION

When Direct and/or Indirect Impacts Occur

Logging is permitted in both RC2 and RC3 beech/oak stands and their buffers, provided that it results in no net loss of habitat values. The following guidelines should be implemented.

1. A forest management plan must be developed for the beech/oak stand by the applicant, and approved by the Fish and Wildlife Department. The logging prescription must be consistent with state of the art techniques for long-term period. The plan should incorporate Fish and Wildlife Department guidelines for beech management, and include details on such issues as the marking of the trees and the timing of the cut.
2. Trees proposed for removal within RC2 beech/oak stands must be marked by the applicant and reviewed by the Fish and Wildlife Department prior to approving the logging. Logging proposals within RC3 designated beech stands require that either the trees be marked or harvest prescriptions prohibit the removal of all scarred beech trees (regardless of diameter) and unscarred beech trees less than 12 inches in diameter. Proposals within RC3 designated oak stands require that either the trees be marked or harvest prescriptions prohibit the removal of any oak trees. For both RC2 and RC3 habitats, skid trail and haul road locations should be reviewed and subject to the approval of the Fish and Wildlife Department/
3. Logging within and RC2 Beech/oak stand or its predetermined buffer zone is prohibited from September 1 to December 1. Logging within RC3 stands and their buffers can occur during the period September 1 to December 1, provided the logging activity is limited to one year.

MITIGATION GUIDELINES FOR WETLANDS

Wetlands representing necessary black bear habitat are defined as those wetlands that by themselves, or as part of a wetland complex, are greater than one acre in size and have exhibited historical or current spring use by black bears. The ephemeral nature of bear use in wetland requires that projects be reviewed during the period April 15 through July 15. If not, those wetlands merely meeting size and relative value requirements, and satisfying the food, cover and remoteness characteristics of wetlands used by bears may be deemed necessary black bear habitat.

Wetlands identified as necessary black bear habitat are categorized only into RC2 and RC3 levels. Wetlands that provide a relatively significant proportion of spring food supplies within an entire habitat unit are unique and irreplaceable on a regional basis and are designated as RC2 habitats. These areas must have exhibited either historical or current use by bears during the period between April 15 and July 15. These wetlands are usually large in size (or part of a larger wetland complex), limited within the habitat unit, and not significantly impacted by existing development of human activity.

Wetlands designated as RC3 habitats include those wetlands that meet the definition of necessary black bear habitat and provide a relatively significant proportion of spring food supplies for the bear population within a 1.75-mile radius of the project site (10 square miles)². Like RC2 wetlands, RC3 Wetlands must have exhibited either historical or current use by bears during the period between April 15 and July 15.

Direct impacts on wetlands are defined as those impacts resulting from the construction of the project within the boundaries of the wetland that directly impacts the production of herbaceous vegetation or its use by bears. Indirect impacts result when the project is located within a predetermined buffer zone of no greater than one-half mile and no less than one-quarter mile distance from the wetland boundary. Buffer zone distances less than one-half mile are determined by the district wildlife staff only after a favorable evaluation of factors such as topography and vegetative cover. Any penetration of the buffer zone is at the discretion of the district wildlife staff.

The magnitude of the indirect impacts from the project is determined by estimating a “zone of influence” from the development that may range up to one-half mile in distance. Topography, vegetative cover, seasonal restrictions, and the type of development proposed will factor in estimating the project’s zone of influence.

RESIDENTIAL UNITS

When Direct and/or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated wetlands. It is not likely that direct impacts will be permitted on RC3 wetlands as well – given the protection afforded these habitats through the Vermont Wetlands Rules. If, however, the direct and/or indirect impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Creation of a homeowners’ association to implement mitigation practices when common land exists in the development of subdivision. Otherwise, deed covenants will be required.
2. If all residential units are beyond the predetermined buffer zone, no forest management plan is necessary. However, trees within the wetland may only be cut with prior written approval of the Fish and Wildlife Department. If vegetation permit’s a buffer zone of less than one-half mile, forest management activities within the buffer also require prior written approval of the Fish and Wildlife Department.
3. If any residential units are sited within the predetermined buffer zone, for every acre of critical wetland directly and indirectly impacted by the project (based on the estimated zone of influence), ten to acres of wetland must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be

compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s) or homeowners' association. Management may include softwood plantings, water level manipulation, and seeding the area for herbaceous vegetation. Management activities must be completed prior to any conveyance of the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).

4. No further subdivision of the remaining wetland can occur and must be so stated in the deed.
5. Travel by off road recreational vehicles (ORV's) will not be allowed unless approved by the Fish and Wildlife Department and restricted to permitted trails.

COMMERCIAL DEVELOPMENTS

When Direct and/or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated wetlands. It is not likely that direct impacts will be permitted on RC3 wetlands as well – given the protection afforded these habitats through the Vermont Wetlands Rules. If, however, the direct and/or indirect impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Creation of deed covenants requiring implementation of all mitigation practices.
2. If all development is sited beyond the predetermined buffer zone, no management plan is necessary. However, trees within the wetland may only be cut with prior written approval of the Fish and Wildlife Department. If vegetation permits a buffer zone of less than one-half mile, forest management activities within the buffer also require prior written approval of the Fish and Wildlife Department.
3. If any development is sited within the predetermined buffer zone, for every acre of critical wetland directly and indirectly impacted by the project) based on the estimated zone of influence), ten acres of wetland must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner. Management may include softwood plantings, water level manipulation, and seeding the area for herbaceous vegetation. Management activities must be completed prior to any conveyance of the mitigation lands to a public natural resources agency or qualified and approved by private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).
4. No further subdivision of the remaining wetland can occur and must be so stated in the deed.

5. Travel by off road recreational vehicles (ORV's) will not be allowed unless approved by the Fish and Wildlife Department and restricted to permitted trails.

EXTRACTION OF EARTH RESOURCE

When Direct and/or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated wetlands. It is not likely that direct impacts will be permitted on RC3 wetlands as well – given the protection afforded these habitats through the Vermont Wetlands Rules. If, however, the direct and/or indirect impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. If all development is sited beyond the predetermined buffer zone, no management plan is necessary. However, trees within the wetland may only be cut with prior written approval of the Fish and Wildlife Department. If vegetation permits a buffer zone of less than one-half mile, forest management activities within the buffer also require prior written approval of the Fish and Wildlife Department.
2. If any earth resource extraction is sited within the predetermined buffer, for every acre of wetland impacted within the zone of influence, ten to acres of wetland must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s). Management may include softwood plantings, water level manipulation, and seeding the area for herbaceous vegetation. Management activities must be completed prior to any conveyance of the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).
3. Indirect impacts, and their mitigation requirements, can be eliminated by prohibiting site clearing and earth resource extraction during the period April 15 to July 15.
4. All roads accessing the extraction site must be gated to effectively limit motor vehicle use.

TRANSMISSION LINES

When Direct and Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated wetlands. It is not likely that direct impacts will be permitted on RC3 wetlands as well – given the protection afforded these habitats through the Vermont Wetlands Rules. If, however, the direct and/or indirect

impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. A transmission line corridor vegetation management plan must be prepared at the applicant's expense, be subject to approval by the Fish and Wildlife Department, and be implemented by the utility. Management plan objectives should focus on maintaining sufficient cover within the wetland.
2. Clearing and maintaining transmission lines within an RC@ wetland or its predetermined buffer zone is prohibited from April 15 to July 15. Clearing within RC3 wetlands and their buffers can occur during the period April 15 to July 15.
3. Transmission line corridor width should be limited to 100 feet, whenever possible.

When Only Indirect Impacts Occur

Indirect impacts on both RC2 and RC3 designated wetlands are considered insignificant intrusion that can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Clearing and maintaining transmission lines within the predetermined buffer zone of and RC2 wetlands is prohibited from April 15 to July 15. Clearing with RC3 wetland buffers can occur during the period April 15 to July 15.

Upgrade of Existing Lines

1. Direct impacts are not allowed on either RC@ or RC3 wetlands and, therefore, the corridor may not be widened. The utility company must stay within the existing corridor by using a different tower design. All construction in RC2 wetlands or their buffers is prohibited from April 15 to July 15.

HIGHWAYS

When Direct and /or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated wetlands. It is not likely that direct impacts will be permitted on RC3 wetlands as well – given the protection afforded these habitats through the Vermont Wetlands Rules. If, however, the Project Evaluation Process results in an RC3 designation, then direct and /or indirect impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. If the highway is sited within the predetermined buffer zone, for every acre of critical wetland directly and indirectly impacted by the project (based on an estimate of the zone of influence), ten to acres of wetland must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s). Management may include softwood plantings, water level manipulation, and seeding the area for herbaceous vegetation.

Management activities must be completed prior to any conveyance of the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).

2. The zone of influence for highways may extend to all necessary wetlands located within that portion of the habitat unit fragmented by the highway. District wildlife staff will determine whether the highway will effectively fragment the unit so that portions are no longer large enough to serve as black bear habitat. Impacts on all critical wetlands fragmented by the highway will be included in the estimate of impacted habitat when determining the mitigation acreage required.
3. Roads must be constructed to conform to the restricted access classification, thereby prohibiting the development of future spur roads interconnecting the new highway.

SNOWMAKING PONDS

When Direct and /or Indirect Impacts Occur

No direct or indirect impacts are allowed on RC2 designated wetlands. It is not likely that direct impacts will be permitted on RC3 wetlands as well – given the protection afforded these habitats through the Vermont Wetlands Rules. If, however, the Project Evaluation Process results in an RC3 designation, then direct and /or indirect impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. If all development is sited beyond the predetermined buffer zone, no management plan is necessary. However, trees within the wetland may only be cut with prior written approval of the Fish and Wildlife Department. If vegetation permits a buffer zone of less than one-half mile, forest management activities within the buffer also require prior written approval of the Fish and Wildlife Department.
2. If any of the project is sited within the predetermined buffer zones, for every acre of critical wetland directly and indirectly impacted by the project (based on an estimate of the zone of influence), ten to acres of wetland must be protected and managed in perpetuity. Impacts to habitat previously impacted by development need not be compensated for. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and Wildlife Department. A management plan must be prepared at the applicant's expense, subject to the approval of the Fish and Wildlife Department, and implemented by the property owner (s). Management may include softwood plantings, water level manipulation, and seeding the area for herbaceous vegetation. Management activities must be completed prior to any conveyance of the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).
3. Indirect impacts, and their mitigation requirements, can be eliminated by prohibiting construction maintenance, and operation during the period April 15 to July 15.

LOGGING ABOUT 2500 FEET IN ELEVATION

When Direct and/or Indirect Impacts Occur

Logging is permitted in RC2 and RC3 wetlands and their buffers, provided that it results in no net loss of habitat values. The following guidelines should be implemented.

1. A forest management plan must be developed for the wetland and its buffer by the applicant, and subject to the approval of the Fish and Wildlife Department. The logging prescription must retain sufficient forest cover to maintain the value of the wetland for bears. The plan should include details on such issues as the marking of the trees and the timing of the cut.
2. Trees proposed for removal within RC2 wetlands and their buffers must be marked by the applicant and reviewed by, and subject to the approval of, the Fish and Wildlife Department. Proposals within RC3 wetlands require that either the trees be marked or a diameter limit be approved by the district wildlife staff. For Both RC2 and RC3 habitats, skid trail and haul road locations should be delineated, reviewed, and subject to the approval of the Fish and Wildlife Department.
3. Logging within an RC2 wetland or its predetermined buffer zone is prohibited from April 15 to July 15. Logging within RC3 wetlands and their buffers can occur during the period April 15 to July 15, provided the logging activity is limited to one year.

MITIGATION GUIDELINES FOR TRAVEL CORRIDORS

Travel corridors representing necessary black bear habitat are defined as those habitats exhibiting historical and/or recent use by more than one bear and serving as one of no more than three travel routes available for bears to access the same critical food or range. Travel corridors either access nearby critical beech/oak stands or wetlands, or link bear range which, otherwise, would not be sufficiently large enough to support a viable bear population. Travel corridors are comprised of bear travel routes and their predetermined buffer zones necessary to provide the concealment cover and security required by the animals.

Travel corridors that satisfy these requirements are categorized into RC2 and RC3 levels. Travel corridors serving as the single, most heavily used access to areas providing critical foods or range are unique and irreplaceable on a regional basis and are designated as R2 habitats. These corridors usually exhibit both historical and recent use by bears through reports of bear-vehicle collisions, sightings, and perhaps, dog strikes. They are not presently significantly impacted by existing development or human activity.

RC3 travel corridors are all others that meet the definition of necessary bear habitat, except those that exhibit low levels of historical, but no recent use, and have been significantly impacted by recent development.

Project impacts on travel corridors are not described as direct or indirect. Instead, impacts on travel corridors are defined as those impacts resulting from the construction of the project within the predetermined buffer zone of no greater than one-half mile and no less than one-quarter mile from the travel route location. Buffer zone distances less

than one-half mile are determined by the district wildlife staff only after a favorable evaluation of factors such as topography and vegetative cover. Any penetration of the buffer zone is at the discretion of the district wildlife staff.

The impacts on travel corridors are determined by estimating a “zone of influence” from the development that may range up to one-half mile in distance. Topography, vegetative cover, seasonal restrictions, and the type of development proposed will factor in estimating the project’s zone of influence. The travel corridor is considered imperiled when the project’s zone of influence extends beyond the bear travel route, thereby precluding bear movement in the future.

RESIDENTIAL UNITS

No impacts are allowed on RC2 designated travel corridors. If, however, the Project Evaluation Process results in an RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Creation of a homeowner’ association to implement mitigation practices when common land exists in the development or subdivision. Otherwise, deed covenants will be required.
2. If all residential units are beyond the predetermined buffer zone, no management plan is necessary. However, trees within the travel route and its buffer may only be cut with prior written approval of the Fish and Wildlife Department.
3. If the zone of influence from the project extends beyond the bear travel route, the applicant must protect that lands lying one mile wide and 800 feet deep to each side of the road within another existing black bear travel corridor. These lands must be located within a travel corridor approved by the Department and protected and managed into perpetuity. The applicant may lessen mitigation acreage requirements by protecting remaining strategically located privately owned parcels within corridors already partially protected by public ownership or conservation easements. Priority is given to protecting travel corridors accessing the same critical foods or range as that served by the impacted corridor. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish and wildlife Department. If the mitigation lands are to be retained by the applicant, a management plan must be prepared at the applicant’s expense, subject to the approval of the fish and Wildlife Department, and implemented by the property owner (s) or homeowners’ association. No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).
4. No further subdivision of the remaining travel corridor can occur and must be so stated in the deed.
5. Travel by off road recreational vehicles (ORV’s) will not be allowed unless approved by the Fish and Wildlife Department and restricted to permit trails.

COMMERCIAL DEVELOPMENTS

No impacts are allowed on RC2 designated travel corridors. If, however, the Project Evaluation Process results in an RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Creation of a deed covenants requiring implementation of all mitigation practices.
2. If all development is sited beyond the predetermined buffer zone, no management plan is necessary. However, trees within the travel route and its buffer may only be cut with prior written approval of the Fish and Wildlife Department.
3. If the zone of influence from the project extends beyond the bear travel route, the applicant must protect the lands lying one mile wide and 800 feet deep to each side of the road within another existing black bear travel corridor. These lands must be located within a travel corridor approved by the Department and protected and managed into perpetuity. The applicant may lessen mitigation acreage requirements by protecting remaining strategically located privately owned parcels within corridors already partially protected by public ownership or conservation easements. Priority is given to protecting travel corridors accessing the same critical foods or range as that served by the impacted corridor. Acreage proposed for mitigation must contain habitat or equal or greater quality than the impacted site and must be subject to the approval of the fish and Wildlife Department. If the mitigation lands are to be retained by the applicant, a management plan must be prepared at the applicant's expense, subject to the approval of the fish and Wildlife Department, and implemented by the property owner(s) or homeowners' association. No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).
4. No further subdivision of the remaining travel corridor can occur and must be so stated in the deed.
5. Travel by off road recreational vehicles (ORV's) will not be allowed unless approved by the Fish and Wildlife Department and restricted to permit trails.

EXTRACTION OF EARTH RESOURCES

No impacts are allowed on RC2 designated travel corridors. If, however, the Project Evaluation Process results in an RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. Creation of a deed covenants requiring implementation of all mitigation practices.
2. If all development is sited beyond the predetermined buffer zone, no management plan is necessary. However, trees within the travel route and its buffer may only be cut with prior written approval of the Fish and Wildlife Department.
3. If the zone of influence from the project extends beyond the bear travel route, the applicant must protect the lands lying one mile wide and 800 feet deep to each side of the road within another existing black bear travel corridor. These lands must be located within a travel corridor approved by the Department and protected and managed into perpetuity.

The applicant may lessen mitigation acreage requirements by protecting remaining strategically located privately owned parcels within corridors already partially protected by public ownership or conservation easements. Priority is given to protecting travel corridors accessing the same critical foods or range as that served by the impacted corridor. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the fish and Wildlife Department. If the mitigation lands are to be retained by the applicant, a management plan must be prepared at the applicant's expense, subject to the approval of the fish and Wildlife Department, and implemented by the property owner(s) or homeowners' association. No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).

4. No further subdivision of the remaining travel corridor can occur and must be so stated in the deed.
5. Project impacts from the zone of influence can be limited to the extraction site itself by prohibiting site clearing and earth resource extraction during the period April 15 to December 1. Access roads to the site should be gated.

TRANSMISSION LINES

Impacts on RC2 and RC3 designated travel corridors are permitted in exchange for mitigative actions, and the following guidelines apply.

1. Transmission lines in RC2 travel corridors must be sited so as not to imperil bear movement along the bear travel route. For RC3 travel corridors, transmission lines located where the bear travel route crosses the road require the applicant to protect the lands lying one mile wide and 800 feet deep to each side of the road within another existing black bear travel corridor. These lands must be located within a travel corridor approved by the Department and protected and managed into perpetuity. The applicant may lessen mitigation acreage requirements by protecting remaining strategically located privately-owned parcels within corridors already partially protected by public ownership or conservation easements. Priority is given to protecting travel corridors accessing the same critical foods on range as that served by the impacted corridor. Acreage proposed for mitigation must contain corridor. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the Fish

and Wildlife Department. If the mitigation lands are to be retained by the applicant, a management plan must be prepared at the applicant's expense, subject to the approval of the Fish and wildlife Department, and implemented by the property owner (s) or homeowners association. No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).

2. For transmission lines located within the predetermined buffer zone, transmission line corridor width should be limited to 100 feet and the corridor should include: 1) at least four forested travel lands (>200 feet wide) perpendicular to the transmission line corridor, and 2) two vegetative screenings (>200 feet wide) adjacent and parallel to the road. Corridors wider than 100 feet may require additional travel lanes. The width of the travel lanes and screenings will be dictated by the width of the transmission line through the bear travel corridor.

UPGRADE OF EXISTING LINES

Impacts are not allowed and, therefore, the transmission line corridor may not be widened. The utility company must stay within the existing corridor by using a different tower design. All construction in RC2 travel corridors is restricted to August 1 to August 31.

HIGHWAYS

No impacts are allowed on RC2 designated travel corridors. Highway projects affecting RC2 designated travel corridors must employ strategies such as reducing shoulder width or the number of travel lanes. If, however, the Project Evaluation Process results in an RC3 designation, then impacts can be accommodated in exchange for mitigative actions, and the following guidelines apply.

1. When evaluating the impacts of roads proposed within bear travel corridors, district wildlife staff should consider potential traffic volumes, the distance to the existing road, and the presence of other development within the corridor
2. If the project imperils bear movement through the corridor, the applicant must protect the lands lying one mile wide and 800 feet deep to each side of the road within another existing black bear travel corridor. These lands must be located within a travel corridor approved by the Department and protected and managed into perpetuity. The applicant

may lessen mitigation acreage requirements by protecting remaining strategically located privately owned parcels within corridors already partially protected by public ownership or conservation easements. Priority is given to protecting travel corridors accessing the same critical foods or range as that served by the impacted corridor. Acreage proposed for mitigation must contain habitat of equal or greater quality than the impacted site and must be subject to the approval of the fish and Wildlife Department. If the mitigation lands are to be retained by the applicant, a management plan must be prepared at the applicant's expense, subject to the approval of the fish and Wildlife Department, and implemented by the property owner(s) or homeowners' association. No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization (the intent of the easements should be so stated in the deed/easement).

3. Roads must be constructed to conform to the restricted access classification, thereby prohibiting the development of future spur roads interconnecting the new highway.

SKI TRAILS AND CHAIRLIFTS

No impacts are allowed on RC2 designated travel corridors. If, however, the Project Evaluation Process results in an RC3 designation, then impacts can be accommodated in exchange for mitigative action, and the following guidelines apply.

1. For ski trails and chairlift lines located within the predetermined buffer zone, all maintenance must be completed within the period August 1 to August 31.
2. No snowmaking on ski trails within the predetermined buffer zone is permitted prior to ten (10) days before Thanksgiving.
3. Ski trails and chairlifts should be sited so as not to imperil bear movement along the bear travel route. Trails and chairlifts located where the bear travel route crosses the road require the applicant to protect the lands lying one mile wide and 800 feet deep to each side of the road within another existing black bear travel corridor. These lands must be located within a travel corridor approved by the Department and protected and managed into perpetuity. The applicant may lessen mitigation acreage requirements by protecting remaining strategically

located privately owned parcels within corridors already partially protected by public ownership or conservation easements. Priority is given to protecting travel corridors accessing the same critical foods or range as that served by the impacted corridor. Acreage proposed for mitigation must contain habitat or equal or greater quality than the impacted site and must be subject to the approval of the fish and Wildlife Department. If the mitigation lands are to be retained by the applicant, a management plan must be prepared at the applicant's expense, subject to the approval of the fish and Wildlife Department, and implemented by the property owner(s) or homeowners' association. No management plan is required if the applicant conveys the mitigation lands to a public natural resources agency or qualified and approved private non-profit conservation organization.

4. If all development is sited beyond the predetermined buffer zone, no forest management plan is necessary. However, trees within the travel route and its buffer may only be cut with prior written approval of the fish and Wildlife Department.

NOTES

1. The Mitigation ratio of four acres protected per acre impacted is the ratio required to protect nearly 100% of the existing mast stand habitat values, provided mitigation lands are enhanced by 30% through forest management practices.
2. The radius of 1.75 miles is equivalent to 10 square miles, the estimated home range of a female black bear.
3. The mitigation ratio of 10 acres protected per acre impacted is the ratio required to protect nearly 100% of the existing wetland habitat values, provided mitigation lands are enhanced by 10% through habitat management practices.
4. Defining travel corridors as necessary black bear habitat only when travel is limited to three existing travel corridors is based upon the objective to maintain two alternative corridors between food supplies or range. The most heavily used corridor is designated RC2 and cannot be impacted. The remaining two corridors provide the flexibility of either

mitigating for the impacts on one of the corridors or losing a corridor to development below the Act 250 threshold.

5. The travel route is the actual location at which bears have crossed or likely cross the highway.
6. This mitigation requirement totals approximately 200 acres (100 acres on each side of the highway). Protected lands 1 mile wide and 800 feet deep are required to fully protect one entire travel corridor and its associated buffer from development below the Act 250 threshold. Future projects beyond 800 feet from the highway will trigger Departmental review under Act 250.

FIGURE 2. PROJECT EVALUATION PROCESS

Step 1. Is an alternate construction site or, on or off the project parcel, available?

Yes

1. No direct impacts
2. Utilize guidelines for indirect impacts

No

1. Go to Step 2

Step 2. Is the project within a necessary black bear habitat or portion thereof, with unique or irreplaceable public values on a regional basis?

Yes = RC2 Area

1. No direct impacts
3. Utilize guidelines for indirect impacts

No = RC3 Area

1. Go to Step 3

Step 3. Is applicant willing to apply feasible and reasonable mitigation?

Yes

- 1. Utilize guidelines for direct and indirect impacts

No

- 1. No direct impacts
- 2. Utilize guidelines for indirect impacts

BLACK BEAR HABITAT SUMMARY

	RC 2	RC 3	Not Necessary Black Bear Habitat
Beech Stands			
No. Trees:	At least 15-25 trees scarred within 10 years	At least 15-25 trees scarred within 10 years	Less than 15 trees scarred within 10 years
Size:	Usually large stand	Not necessarily large	Usually small
Level of Use:	High to moderate use	Low to moderate use	Low use
History of use:	Exhibits evidence of historic (>3 years) and fresh (<3 years) use	Exhibits evidence of historic (>3 years) and/or fresh (<3 years) use	Exhibits evidence of historic (>3 years) use only
Impact of Existing Development:	Not impacted by existing development	Not impacted or slightly impacted by existing development	Impacted by existing development

Relative Value:	Regionally unique, irreplaceable	Regionally scarce	
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BLACK BEAR HABITAT SUMMARY

	RC 2	RC 3	Not Necessary Black Bear Habitat
Oak Stands			
No. Trees:	At least 15-25 oak trees of DBH > 12 inches	At least 15-25 oak trees of DBH > 12 inches	Less than 15 oak trees of DBH > 12 inches
Size:	Usually large stand	Not necessarily large	Usually small
Level of Use:	High to moderate use	Low to moderate use	Low use
History of use:	Stand has a record of historic and recent use	Stand has a record of historic and/ or recent use	Stand exhibits evidence of historic use only
Impact of Existing Development:	Not impacted by existing development	Not impacted or slightly impacted by existing development	Impacted by existing development
Relative Value:	Regionally unique, irreplaceable	Regionally scarce	

BLACK BEAR HABITAT SUMMARY

	RC 2	RC 3	Not Necessary Black Bear Habitat
Wetlands			
Size:	Wetland or wetland complex totals > 1 acre	Wetland or wetland complex totals >1 acre	Wetland or wetland complex totals >1 acre
Level of Use:	Moderate to high level of use or no use, but wetland meets characteristics of wetlands used by bears	Some level of use or no use, but wetland meets characteristics of wetlands used by bears	Use may be evident or wetland does not meet characteristics of wetlands used by bears
History of use:	Has exhibited historic and / or recent use	Has exhibited historic and / or recent use	May exhibit use or wetland does not meet characteristics of wetlands used by bears

Impact of Existing Development:	Not impacted by existing development	Not impacted to slightly impacted by existing development	May be impacted by existing development
Relative Value:	Bear wetland/ wetland complex is unique regionally (within habitat unit)	Wetland/ wetland complex is most significant one within 1.75 mile radius area (10 square miles)	Wetland / wetland complex is not most significant one within 1.75 mile radius area (10 square miles)

Project review must accommodate field reconnaissance during the period April 15 through July 15, or the value of wetland is determined by evaluating its characteristics.

BLACK BEAR HABITAT SUMMARY

	RC 2	RC 3	Not Necessary Black Bear Habitat
Travel Corridors			
No. Available:	One of three or fewer remaining routes of travel	One of three or fewer remaining routes travel	One of three or fewer remaining routes travel
Function:	Accesses same critical food or range not sufficiently large to support its own viable population	Accesses same critical food or range not sufficiently large to support its own viable population	
Level of Use:	Most heavily used of three routes	Low to moderate use	Little to no use
History of Use:	Exhibits historical and recent use	Exhibits historical and recent use	

Impact of Existing Development	Not impacted by existing development, or the only remaining corridor	Not impacted to slightly impacted by existing development	Impacted by existing development	
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