

Appendix A



USFWS

Heron Rookery at Shad Island

Special Designation Areas

Introduction

As part of the Comprehensive Conservation Plan (CCP) process for Missisquoi National Wildlife Refuge (Missisquoi Refuge, the refuge), we completed a Wilderness Review, evaluating all Refuge land for its wilderness potential. During the process, much Refuge land was evaluated for the first time and land that had previously been evaluated for its wilderness potential was reevaluated.

A wilderness review of the refuge was completed in 1974. This review, based on refuge management needs and public input at the time, proposed that Shad Island and the portion of the Refuge from the East Branch of the Missisquoi River to Martindale Point (labeled Shad Island Area on map A-1) be designated wilderness under the Wilderness Act. The proposal has been neither accepted nor rejected, but, for over 30 years, has been pending decision by Congress.

Since 1974, the refuge and its surrounding area have changed. Therefore, in order to determine whether the area still meets the spirit and the intent of the Wilderness Act, we reevaluated the original proposed area for wilderness potential along with the rest of the refuge lands.

Wilderness Inventory

The wilderness review process involved three phases: inventory, study, and recommendation. The purposes of the wilderness inventory phase are:

- to identify areas of National Wildlife Refuge System (System) lands and waters with wilderness character and establish these areas as Wilderness Study Areas (WSAs)
- to identify areas of System lands and waters that do not qualify as WSAs
- to document the inventory findings for the planning record

Inventory Criteria

WSAs are areas that meet the criteria for wilderness identified in the Wilderness Act. Section 2(c) of the Act provides the following definition.

A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions, and which:

- (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;*
- (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation;*
- (3) has at least five thousand acres of land or is of sufficient size as to make*

practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological or other features of scientific, educational, scenic, or historical value.

Permanent roads are prohibited in wilderness under Section 4(c) of the Act, so WSAs must also be roadless. For the purposes of the wilderness inventory, a “roadless area” is defined as: “A reasonably compact area of undeveloped Federal land that possesses the general characteristics of a wilderness and within which there is no improved road that is suitable for public travel by means of four-wheeled, motorized vehicles intended primarily for highway use. A route maintained solely by the passage of vehicles does not constitute a road.”

In summary, the inventory to identify WSAs is based on an assessment of the following criteria: absence of roads (roadless); size; naturalness; and either outstanding opportunities for solitude or primitive and unconfined recreation.

We initially divided Missisquoi Refuge into six separate blocks bordered by major roads or bodies of water that are not owned in fee title, which we tentatively called Wilderness Inventory Areas (WIAs) (map A-1). Because the four mainland blocks of Missisquoi Refuge average 1,334 acres with the largest, Maquam Bog, measuring about 2,435 acres, we first assessed wilderness potential of refuge land based on the size criterion. The size criterion is satisfied for areas under Service jurisdiction in the following situations:

- An area with over 5,000 contiguous acres (2,000 ha). State and private land inholdings are not included in calculating acreage
- A roadless island of any size. A roadless island is defined as a roadless area that is surrounded by permanent waters or that is markedly distinguished from surrounding lands by topographical or ecological features such as precipices, canyons, thickets, or swamps
- An area of less than 5,000 contiguous acres that is of sufficient size as to make practicable its preservation and use in an unimpaired condition, and of a size suitable for wilderness management
- An area of less than 5,000 contiguous acres that is contiguous with a designated wilderness, recommended wilderness, or area of other Federal lands under wilderness review by the U.S. Forest Service (USFS), Bureau of Land Management (BLM), or National Park Service (NPS)

Inventory Conclusions for Mainland Areas

As shown in the following table, none of the mainland WIAs in the Missisquoi Refuge is large enough to meet the size criteria for a WSA. Metcalfe and Shad Islands will be considered separately (see attachments A-1 and A-2 for wilderness worksheets).

Table A- 1. Missisquoi National Wildlife Refuge Wilderness Inventory Area Acreages

Wilderness Inventory Area (WIA)	Size (In Acres)
Maquam Bog	2434.76 Acres
Cranberry Pool	713.93 Acres
Big Marsh Slough	1227.53 Acres
Long Marsh	960.92 Acres
Metcalf Island	199.36 Acres
Shad Island Area	598.78 Acres

* All Wilderness Inventory Areas are in fee title ownership.

As islands are not subject to the same size criterion as mainland WIAs, we assessed the wilderness potential for the Metcalfe Island and Shad Island WIAs according to the other criteria set forth in the Wilderness Act. To be considered for wilderness designation, an island must be roadless, appear natural, and provide outstanding opportunities for solitude or primitive recreation. Other supplemental values are evaluated, but not required. We describe our application of the wilderness criteria to the island WIAs in the following sections.

Evaluation of Roadless Requirement

Shad Island Area

The total acreage of the Shad Island proposal in 1974 was 620 acres. Modern mapping tools determine that the area is 599 acres. The proposal includes the Shad Island Research Natural Area, refuge land east of the East Branch of the Missisquoi River from the northernmost tip of land south to, and including, Martindale Point and the shoreline of Lake Champlain along the Goose Bay Pool Dike to Dead Creek. This area is a relatively long, but narrow parcel. Peripheral areas are used heavily by motorboaters and paddlers and those users are not under the jurisdiction of the Service while on adjacent waters. Their use and presence will be apparent and obvious to visitors to the Shad Island area most of the time, thereby violating the desired wilderness character of the area.

The area is not roadless, but it has no improved roads. Several miles of unimproved dirt and gravel roads have been maintained by the Service since the early 1960's to provide access to and maintenance of habitats and improvements such as the Goose Bay Pool Dike and the Cranberry Pool Dike, and for prescribed fire application, wildfire fighting, and search and rescue missions.

This wetland complex is part of the delta system where the Missisquoi River flows into Lake Champlain. It is accessible only by boat in the warmer months or by foot or snowmachine in the frozen months. There is high public use of the bay and river in all seasons by fishermen, boaters, hunters, and birdwatchers, in motorized and non-motorized watercraft. The waters where these activities occur, for the most part, are not under the jurisdiction of the Service except within the mean low water line (93.055' msl), thus the control of these activities on those waters does not lie with the Service.

No other wilderness areas are proximate to lands in this proposal, although some adjacent refuge lands are undeveloped. Other refuge lands contain improvements that have been necessary for refuge wildlife and wildlife habitat management programs, such as dikes, water control structures, barge slips, equipment storage facilities, artificial nesting structures and their associated predator guards, and unimproved roads.

Metcalfe Island

Metcalfe Island contains no improved roads. Public hunting is allowed in the pothole. Motorboats are used for access to the island.

The total acreage of the Metcalfe Island proposal is 199 acres. Metcalfe Island is located near the end of the Missisquoi River delta, where the river flows into Lake Champlain. It is accessible only by boat during the warm season. It is bounded on the east by the main branch of the Missisquoi River, on the south by the west branch, and on the north by Lake Champlain.

This wetland is part of the delta system where the Missisquoi River flows into Lake Champlain. It is accessible by boat in the warmer months or by foot or snowmachine in the frozen months. There is high public use of Lake Champlain and the Missisquoi River in all seasons by fishermen, boaters, hunters, and birdwatchers, in motorized and non-motorized watercraft. These waters are not under the jurisdiction of the Service except within the mean low water line (93.055' msl).

Evaluation of the Naturalness Requirement

Shad Island Area

Shad Island and most of the area east and south of Shad Island included in the proposal, does appear to be affected primarily by the forces of nature. However, there is also significant noticeable evidence of man's work in the form of the Goose Bay Pool dike and associated water control structures. While the structures themselves are clearly not natural, activities essential to their maintenance in the future would further violate the naturalness criterion. The use of heavy equipment and tools is required periodically to maintain dikes and water control structures. Fire control and application equipment are also necessary to maintain habitats by periodically conducting prescribed burns in the area. Mechanical control of invasive species will likely be required in the future on portions of this area to preserve native species. This habitat management and maintenance is needed to benefit the thousands of migratory birds and waterfowl that use the area each year. Managing the area as wilderness prohibits these activities and will contradict the purposes for which the refuge was established.

The ability of the Shad Island area to meet the naturalness requirement is further undermined by the presence of the village of Highgate Springs. Highgate Springs is built on the eastern shore of Missisquoi Bay, approximately 1.5 miles across the Bay from, and easily seen from, the entire lakeshore portion of the lands within this proposal. During the decades since the original wilderness proposal, the population of Highgate Springs has markedly increased, and today the Shad Island visitor in search of wilderness has instead a viewshed of development across the Bay. Likewise, there are few times when motorboats are not seen or heard in Missisquoi Bay which abuts the lands within this proposal. So while the proposed lands appear to be in a natural state, the adjacent waters and nearby lands do not, thereby violating the sense of naturalness.

Other apparent signs of man include the annual accumulation of debris that lodges throughout the island during the annual spring flooding of the river. These materials are washed downriver either through carelessness or intentionally and lodge in the exposed vegetation on the otherwise flooded island. Debris includes cans and bottles of all shapes, sizes and colors, 55 gallon polypropylene barrels, 5 gallon buckets, small propane tanks, rubber or plastic toys, tires, lumber, etc., essentially any riverside debris that floats. Other than the largest items or potential hazardous items, no attempt is made to clean this up every year as it is a monumental job and is identical to conditions on all other islands of the delta. As the annual vegetation grows it does “hide” these materials somewhat, and many of these items deteriorate over time, but they are an unfortunate eyesore and vivid reminder of man’s presence and impact on the area.

Additionally, as indicated above, hunters, fishermen, and other motorboating recreationists are regularly and frequently present in the waters of Lake Champlain and the Missisquoi River around this island. The island is not of sufficient size or shape to isolate visitors from the sounds of these surrounding activities, which further diminishes the wilderness experience. Although an area may not be considered unnatural in appearance solely on the basis of the “sights and sounds” of human impacts and activities outside its boundary, the presence of the dike and water structures in the WIA, the accumulation of debris and with obvious nearby development and heavy use of the contiguous waters disallow the conclusion that human impacts on the Shad Island Area are “substantially unnoticeable in the unit as a whole,” as required by the Wilderness Act, Section 2 (c).

This island is not open to public use except to waterfowl and deer hunting in the fall. Otherwise, it is closed to entry to provide undisturbed habitat for migrating and nesting waterfowl, great blue herons, other marsh and wading birds, and neotropical migratory birds.

Metcalf Island

Metcalf Island is located at the mouth of the Missisquoi River. There is little evidence of any past human activity. A closer look may reveal the remains of a camp that was destroyed by fire in 1976. Improvements on this parcel include minor features such as wood duck nesting boxes, an artificial nesting platform for ospreys and an occasional sign for directing hunters.

Other apparent signs of man include the annual accumulation of debris that lodges throughout the island during the annual spring flooding of the river. These materials are washed downriver either through carelessness or intentionally and lodge in the exposed vegetation on the otherwise flooded island. Debris includes cans and bottles of all shapes, sizes and colors, 55 gallon polypropylene barrels, 5 gallon buckets, small propane tanks, rubber or plastic toys, tires, lumber, etc., essentially any riverside debris that floats. Other than the largest items or potential hazardous items, no attempt is made to clean this up every year as it is a monumental job and is identical to conditions on all other islands of the delta. As the annual vegetation grows it does “hide” these materials somewhat, and many of these items deteriorate over time, but they are an unfortunate eyesore and vivid reminder of man’s presence and impact on the area.

Additionally, as indicated above, hunters, fishermen, and other motorboating recreationists are regularly and frequently present in the waters of Lake Champlain and the Missisquoi River around this island. The island is not of sufficient size to isolate visitors from the sounds of these surrounding activities, which further diminishes the wilderness experience.

This island is not open to public use except to limited and controlled hunting during portions of the 60-day waterfowl hunting season in the fall, during the 2-day firearms youth hunt for deer, and the 7-day primitive weapons hunt for deer. It is closed to entry to provide undisturbed habitat for migrating and nesting waterfowl, great blue herons, other marsh and wading birds, and neotropical migratory birds.

Evaluation of Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

Shad Island Area

This area is closed to public entry except during the hunting seasons or for occasional special staff or trained-volunteer guided events. When open to public use, opportunities for solitude do exist on portions of this area, although those occurrences are always of limited duration due to disturbance by motorboats or snow machines, depending on the season of the year. These disruptive activities occur on Lake Champlain around the entire perimeter of the refuge and on the Missisquoi River within the refuge where the Service does not have the authority to control or regulate those uses.

Likewise, opportunities for primitive and unconfined priority public uses are limited for the same reasons.

The area does not provide outstanding opportunities for solitude or primitive and unconfined priority public uses, rather the opportunities are rare and infrequent.

Metcalf Island

Opportunities for solitude do exist on portions of this area, although those occurrences are always of limited duration due to disturbance by motorboats or snow machines depending on the season of the year. These activities occur on Lake Champlain around the entire perimeter of the refuge and on the Missisquoi River within the refuge, and are beyond the jurisdictional control of the Service.

Likewise, opportunities for primitive and unconfined priority public uses are limited for the same reasons. This area is closed to public use during the waterfowl nesting season and brood rearing season, from ice-out until the onset of hunting seasons in the fall.

Evaluation of Supplemental Values

Shad Island Area

Supplemental values are defined by the Wilderness Act as “...ecological, geological, or other features of scientific, educational, scenic, or historic value.” These values, though not required for wilderness designation, are numerous and are documented in Chapter 3: Affected Environment of the CCP.

The entire Missisquoi River delta, of which the proposed lands are a portion, is a special geological feature. Known as a bird’s foot delta, it has a characteristic shape that is relatively rare on this scale in the United States.

Likewise, the delta has significant historic and cultural value due to its long use and occupation by Native Americans and early Europeans, and its prominence during the French and Indian War and Revolutionary War eras.

Shad Island has been the site of a significant great blue heron rookery for almost 60 years and at the turn of the century was touted as the largest great blue heron rookery in New England. While still a significant and impressive natural feature, the rookery now experiences years of boom and bust and is outdone by the nearby Valcour Island Rookery on the New York side of Lake Champlain south of Plattsburgh.

The delta has long been and still is the most significant migratory waterfowl stopover in the northern Lake Champlain portion of the Atlantic flyway. Thousands of migratory waterfowl stop to rest and feed in the rich marshes of the delta as they travel along the flyway. This attraction to waterfowl results in a similar attraction to the area by waterfowl hunters.

Shad Island is registered as a Research Natural Area (RNA) Type SAF-39, Black Ash-American Elm-Red Maple. Scientists and educators are encouraged to use research natural areas. Restrictions are applied to preserve the natural values of the area. The Shad Island RNA was established in 1968 and measures approximately 120 acres. It contains a mix of silver maple, swamp white oak, green ash, and cottonwood trees on an area that has been little altered by past land use practices. The RNA encompasses the heron rookery mentioned above and provides extensive research opportunities for scientists concerned with herons, their habitat, and their interactions with double-crested cormorants.

Metcalfe Island

Much of what is previously mentioned for Shad Island also applies to Metcalfe Island. The great blue heron rookery is distributed on parts of both islands.

The entire Missisquoi River delta, of which this parcel is a portion, is a special geological feature. Known as a bird’s foot delta, it has a characteristic shape that is relatively rare on this scale in the United States.

Likewise, the delta has significant historic and cultural value due to its long use and occupation by Native Americans and early Europeans, and its prominence during the French and Indian War and Revolutionary War eras.

The nearby Shad Island has been the site of a significant great blue heron rookery for almost 60 years and at the turn of the century was touted as the largest great blue heron rookery in New England. While still a significant natural feature, the rookery now experience years of boom and bust and is outdone by the nearby Valcour Island Rookery on the New York side of Lake Champlain south of Plattsburgh.

The delta has long been and still is the most significant migratory waterfowl stopover in the northern Lake Champlain portion of the Atlantic flyway. Thousands of migratory waterfowl stop to rest and feed in the rich marshes of the delta as they travel along the flyway. This attraction to waterfowl results in a similar attraction to the area by waterfowl hunters.

Inventory Conclusions for Islands

Shad Island Area

Although the Shad Island Area possesses unique supplemental values as well as potential for outstanding primitive and unconfined recreational opportunities, it does not fulfill the naturalness criterion for wilderness. One significant imprint of man's work that is substantially noticeable and a potential concern for environmental health includes the annual accumulation of debris that lodges throughout the island during the annual spring flooding of the river. These materials are washed downriver either through carelessness or intentionally and lodge in the exposed vegetation on the otherwise flooded island. Other than the largest items or potential hazardous items, no attempt is made to clean this up every year as it is a monumental job and is identical to conditions on all other islands of the delta. As the annual vegetation grows it does "hide" these materials somewhat, and many of these items deteriorate over time, but they are an unfortunate eyesore and vivid reminder of man's presence and impact on the area.

Future activities essential to the maintenance of Goose Bay pool dike and associated water control structures would further violate the naturalness criterion. The use of heavy equipment and tools is required periodically to maintain dikes and water control structures. Fire control and application equipment are also necessary to maintain habitats by periodically conducting prescribed burns in the area. Mechanical control of invasive species will likely be required in the future on portions of this area to preserve native species. This habitat management and maintenance is needed to benefit the thousands of migratory birds and waterfowl that use the area each year. Managing the area as wilderness prohibits these activities and will contradict the purposes for which the refuge was established.

The Shad Island Area does not have wilderness potential because a WIA cannot be considered for further study if it fails to fulfill even one of the wilderness criteria. While the Wilderness Act was enacted "to establish a National Wilderness Preservation System for the permanent good of the whole people," wilderness designation in this case would almost surely prove counterproductive by prohibiting Refuge staff from implementing maintenance activities necessary to preserve sensitive habitat and protect multiple species of special concern. Because the Shad Island WIA no longer fulfills either the purpose or the intent of the Wilderness Act, we withdraw support for the proposal submitted to Congress in 1974 advocating its wilderness designation.

Metcalfe Island

Metcalfe Island was acquired by the Service in 1976 and hence was not in public ownership when the first wilderness review was done. Metcalfe Island does not fulfill the naturalness criterion for

wilderness criteria and is therefore not being considered for wilderness designation. One apparent sign of man includes the annual accumulation of debris that lodges throughout the island during the annual spring flooding of the river. These materials are washed downriver either through carelessness or intentionally and lodge in the exposed vegetation on the otherwise flooded island. Other than the largest items or potential hazardous items, no attempt is made to clean this up every year as it is a monumental job and is identical to conditions on all other islands of the delta. As the annual vegetation grows it does “hide” these materials somewhat, and many of these items deteriorate over time, but they are an unfortunate eyesore and vivid reminder of man’s presence and impact on the area.

Additionally hunters, fishermen, and other motorboating recreationists are regularly and frequently present in the waters of Lake Champlain and the Missisquoi River around this island. The island is not of sufficient size to isolate visitors from the sounds of these surrounding activities, which further diminishes the wilderness experience.

External influences are very apparent and are not under the control or jurisdiction of the Service so will likely continue. The wilderness character would be compromised due to the accumulation of debris and the presence of motorized boats and other recreationists around the entire perimeter of the area.

Other Special Designations—Missisquoi National Wildlife Refuge

Research Natural Areas

Research Natural Areas (RNAs) exist to fulfill three objectives, delineated by the Refuge Manual as follows: first, to participate in the national effort to preserve adequate examples of all major ecosystem types or other outstanding physical or biological phenomena; second, to provide research and educational opportunities for scientists and others in the observation, study, and monitoring of the environment; and third, to contribute to the national effort to preserve a full range of genetic and behavioral diversity for native plants and animals, including endangered or threatened species. RNAs are areas where natural processes are allowed to predominate without human intervention. However, the Refuge Manual states that a RNA “must be reasonably protected from any influence that could alter or disrupt the characteristic phenomena for which the area was established.” Therefore, if predator removal or other disruption of community processes has created conditions under which certain species multiply beyond normal limits and pose a disruptive threat, control of such populations may be necessary by artificial means.

The Refuge has two RNAs: the Maquam Bog RNA and the Shad Island RNA. Both possess unique natural features and fulfill the three stated objectives required of RNAs.

Maquam Bog RNA

The Maquam Bog RNA was established in 1992 and is located southwest of State Route 78. The 890-acre Maquam Bog RNA is an exceptional example of a large sphagnum bog with a diverse mix of plants. It supports one of the primary populations of rhodora (*Rhododendron canadense*) in Vermont.

The bog contains a fringe of maples with highbush blueberries in the understory. The center is a little higher with a dominance of sedges and cranberry. Several small stands of pitch pines are present in the bog. The RNA also provides crucial habitat for the Virginia chain fern (*Woodwardia virginica*), a state-threatened plant species.

Shad Island RNA

The Shad Island RNA was established in 1968. It is located at the extreme northern end of the Refuge and is the northernmost terminus of the Missisquoi River Delta. This island, measuring approximately 120 acres, contains a mix of silver maple, swamp white oak, green ash, and cottonwood trees on an area that has not been altered by past land use practices. The RNA is home to the largest great blue heron rookery in Vermont and provides research opportunities for scientists concerned with herons, their habitat, and their interactions with double-crested cormorants.

The Shad Island RNA proposal dated September 7, 1966 describes the justification: “Due to its inaccessibility, this is the only area locally which contains mature timber and no signs of logging activity. It should be preserved in its natural state for posterity. While it probably will not undergo any natural changes, having reached its climax, it will for this reason, become more unique with each passing year.”

The Refuge is not proposing any new Research Natural Areas in this CCP.

Wild and Scenic Rivers

In 1982, a total of 31 miles of the Missisquoi River were listed in the Nationwide Rivers Inventory (NWI), a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more “outstandingly remarkable” natural or cultural values judged to be of more than local or regional significance. A segment of the inventoried Missisquoi River flows through the refuge boundary. Neither current management actions, nor actions which we propose under Alternative B, would affect the eligibility of the river segment for Wild and Scenic River designation.

The river segment that flows within the boundary of the refuge is a small portion of the Missisquoi River that is identified in the NWI, and there is no real break in the river’s character at the Refuge boundary. We believe that the entire 31 mile portion of the Missisquoi River that is listed in the review should be studied in its entirety, and with the full participation and involvement of our Federal, State, local and nongovernmental partners. As such, in this CCP we did not conduct a study of the river segment on the refuge independently; rather, we are recommending it be part of a larger study of the entire river as identified in the NWI.

Wetlands of International Importance

The Missisquoi NWR is not considered a wetland of international importance by the Ramsar Convention as adopted in 1971 in Ramsar, Iran.

National Natural Landmark

The Secretary of the Interior has not designated the Missisquoi Refuge a National Natural Landmark.

Attachment A-1

Wilderness Review Worksheet Missisquoi National Wildlife Refuge Comprehensive Conservation Plan

Tract Name: Shad Island

Size of Area: 599 acres

Date: May, 2006

The following criteria are from the Wilderness Act of 1964 and the Draft Directors Order regarding Wilderness Review or Evaluation.

Desired Conditions

Size or Isolation

- Land is at least 5,000 contiguous roadless acres
- or
- Land is of sufficient size practicable for its preservation
- Roadless island
- Area contiguous with designated or recommended wilderness or other undeveloped federal land

The total acreage of the Shad Island proposal in 1975 was 620 acres. Modern mapping tools determine that the area is 599 acres. The proposal includes the Shad Island Research Natural Area, refuge land east of the East Branch of the Missisquoi River from the northernmost tip of land south to, and including, Martindale Point and the shoreline of Lake Champlain along the Goose Bay Pool Dike to Dead Creek. This area is a relatively long, but narrow parcel. Peripheral areas are used heavily by motorboaters and paddlers and those users are not under the jurisdiction of the Service while on adjacent waters. Their use and presence will be apparent and obvious to visitors to the Shad Island area most of the time, thereby violating the desired wilderness character of the area.

The area is not roadless, but has no improved roads. Several miles of unimproved dirt and gravel roads have been maintained by the Service since the early 1960's to provide access to and maintenance of habitats and improvements such as the Goose Bay Pool Dike and the Cranberry Pool Dike, and for prescribed fire application, wildfire fighting, and search and rescue missions.

This wetland complex is part of the delta system where the Missisquoi River flows into Lake Champlain. It is accessible only by boat in the warmer months or by foot or snow machine in the frozen months. There is high public use of the bay and river in all seasons by fishermen, boaters, hunters, and birdwatchers, in motorized and non-motorized watercraft. The waters where these activities occur, for the most part, are not under the jurisdiction of the Service except within the mean low water line (93.055' msl), thus the control of these activities on those waters does not lie with the Service.

No other wilderness areas are proximate to lands in this proposal, although some adjacent refuge lands are undeveloped. Other refuge lands contain improvements that have been necessary for refuge wildlife and wildlife habitat management programs, such as dikes, water control structures, barge slips, equipment storage facilities, artificial nesting structures and their associated predator guards, and unimproved roads.

Integrity and Naturalness

- Affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.

Shad Island and most of the area east and south of Shad Island included in the proposal, does appear to be affected primarily by the forces of nature. However, there is also significant noticeable evidence of man's work in the form of the Goose Bay Pool dike, and in the very obvious presence of the village of Highgate Springs. Highgate Springs is built on the eastern shore of Missisquoi Bay, approximately 1.5 miles across the Bay from, and easily seen from, the entire lakeshore portion of the lands within this proposal. Likewise, there are few times when motorboats are not seen or heard in Missisquoi Bay which abuts the lands within this proposal. So while the proposed lands appear to be in a natural state, the adjacent waters and nearby lands do not, thereby violating the sense of naturalness.

Other apparent signs of man include the annual accumulation of debris that lodges throughout the island during the annual spring flooding of the river. These materials are washed downriver either through carelessness or intentionally and lodge in the exposed vegetation on the otherwise flooded island. Debris includes cans and bottles of all shapes, sizes and colors, 55 gallon polypropylene barrels, 5 gallon buckets, small propane tanks, rubber or plastic toys, tires, lumber, etc., essentially any riverside debris that floats. Other than the largest items or potential hazardous items, no attempt is made to clean this up every year as it is a monumental job and is identical to conditions on all other islands of the delta. As the annual vegetation grows it does "hide" these materials somewhat, and many of these items deteriorate over time, but they are an unfortunate eyesore and vivid reminder of man's presence and impact on the area.

Additionally, as indicated above, hunters, fishermen, and other motorboating recreationists are regularly and frequently present in the waters of Lake Champlain and the Missisquoi River around this island. The island is not of sufficient size or shape to isolate visitors from the sounds of these surrounding activities, which further diminishes the wilderness experience.

This island is not open to public use except to waterfowl and deer hunting in the fall. Otherwise, it is closed to entry to provide undisturbed habitat for migrating and nesting waterfowl, great blue herons, other marsh and wading birds, and neotropical migratory birds.

Special and Unique Features

- Contain ecological, geological, or other features of scientific, educational, scenic or historical value

The entire Missisquoi River delta, of which the proposed lands are a portion, is a special geological feature. Known as a bird's foot delta, it has a characteristic shape that is relatively rare on this scale in the United States.

Likewise, the delta has significant historic and cultural value due to its long use and occupation by Native Americans and early Europeans, and its prominence during the French and Indian War and Revolutionary War eras.

Shad Island has been the site of a significant great blue heron rookery for almost 60 years and at the turn of the century was touted as the largest great blue heron rookery in New England. While still a significant and impressive natural feature, the rookery now experience years of boom and bust and is outdone by the nearby Valcour Island Rookery on the New York side of Lake Champlain south of Plattsburgh.

The delta has long been and still is the most significant migratory waterfowl stopovers in the northern Lake Champlain portion of the Atlantic flyway. Thousands of migratory waterfowl stop to rest and feed in the rich marshes of the delta as they travel along the flyway. This attraction to waterfowl results in a similar attraction to the area by waterfowl hunters.

Shad Island is registered as a Research Natural Area (RNA) Type SAF-39, Black Ash-American Elm-Red Maple. Scientists and educators are encouraged to use research natural areas. Restrictions are applied to preserve the natural values of the area. The Shad Island RNA was established in 1968 and measures approximately 120 acres. It contains a mix of silver maple, swamp white oak, green ash, and cottonwood trees on an area that has been little altered by past land use practices. The RNA encompasses the heron rookery mentioned above and provides extensive research opportunities for scientists concerned with herons, their habitat, and their interactions with double-crested cormorants.

Recreation

- Provides outstanding opportunities for solitude
- or
- Provides outstanding opportunities for primitive and unconfined priority public uses

This area is closed to public entry except during the hunting seasons or for occasional special staff or trained-volunteer guided events. When open to public use, opportunities for solitude do exist on portions of this area, although those occurrences are best described as "fleeting" due to frequent disturbance by motorboats or snow machines, depending on the season of the year. These disruptive activities occur on Lake Champlain around the entire perimeter of the refuge and on the Missisquoi River within the refuge where the Service does not have the authority to control or regulate those uses. Activity by fishermen in motorboats is perhaps the most prominent activity since the entire Missisquoi Delta area is well-known as a fishing hotspot. An increasing number of professional and international fishing tournaments on Lake Champlain is bringing increasing attention and pressure to the areas around this island.

Likewise, opportunities for primitive and unconfined priority public uses are limited for the same reasons. This area is closed to public use during the waterfowl nesting season and brood rearing season, which in general is from ice-out until the onset of hunting seasons in the fall.

Acceptable Conditions- Some areas currently do not meet the desired conditions for a wilderness area, but have the potential to do so. The following list identifies those conditions under which land would be restored to meet the desired conditions in the future, or current uses would be managed so a wilderness character could be maintained.

Level of Land Use

Logging, farming, grazing, or other uses not involving extensive development or alteration of the landscape are acceptable if (at the time of review):

- the effects of these activities are substantially unnoticeable.
- or
- wilderness character could be restored through appropriate management.

And

Unimproved roads, structures, installations or utility lines are acceptable if:

- they can be removed upon the area's designation as wilderness.
- or
- they are consistent with the wilderness.
- historic structures or
- facilities needed for protection of the wilderness.
- or
- Underground utility lines if the area otherwise qualifies as wilderness, and maintenance of the utility lines does not require the routine use of motorized or mechanized equipment.

There are currently no structures, installations or utility lines in the proposed area, however, there are several miles of unimproved roads. These roads could be abandoned and restored, but the sought after wilderness character would still be compromised due to the presence of motorized boats or snow machines around the entire perimeter of the area, and the visual presence of the Town of Highgate Springs.

Management activities

Motorized tools, equipment, or structures are acceptable if:

- established or proposed management practices require them for the health and safety of visitors.
- or
- established or proposed management practices require them for the protection of the wilderness resource.

Established management activities in areas adjacent to the proposed area currently require the use of motorized tools and equipment. The roads in the proposed area provide access to the adjacent areas. Fire control and application equipment is required to periodically conduct prescribed burning programs in the area. Motorized boats are necessary to provide safe ingress and egress to portions of this area by big game hunters and waterfowl hunters, or for search and rescue operations. Mechanical control of invasive species has been conducted in the past and will likely be

required in the future on the periphery of this area. In the last two years, an airboat has been the most efficient tool in the annual search for water chestnut plants on the delta. These plants are a very aggressive invasive species and would threaten the entire ecology of the delta and the northern portion of Lake Champlain were they to become established. Search and removal of this plant is a vital annual occurrence dependent on motorized equipment due to the expanse of the area.

Prior Uses

Prior rights or privileges, such as grazing or limited commercial services, are acceptable if the operations:

- do not involve the routine use of motorized or mechanical equipment.

And

- do not involve development to the extent that the human imprint is substantially noticeable.

And

Surface and subsurface mineral rights for exploration and development (including oil and gas) are acceptable if:

- they would likely be relinquished, acquired, exchanged, or eliminated in the foreseeable future.

None of these prior uses currently occur on this area or are known to have occurred in recent history.

Research

Research is acceptable if:

- it does not require a permanent structure or any other facilities not needed for wilderness management.

Research has been conducted in this area on the wildlife and vegetative communities but no projects have required use of permanent structures.

Recommendation:

Tract meets desired conditions: No. *The area is too small to create the wilderness character, the solitude or the primitive conditions sought for wilderness areas. Its long narrow shape exposes visitors to modern machinery and landscapes in perimeter areas where these uses and features are beyond the jurisdiction and influence of the Service. The annual accumulation of flood debris detracts severely from the desired wilderness character.*

Tract could be managed to maintain a wilderness character: No. *While the tract itself might be managed to try to maintain a wilderness character, perimeter areas can not. This area is a victim of its very unwilderness-like locale. It would also be necessary to control invasive plant species on this parcel as part of an ecosystem approach to invasive species management. A failure to do so on this parcel would make efforts in adjacent areas futile and contribute to ecological calamity in the northern part of Lake Champlain.*

Tract has no potential for wilderness character: This is correct. *The obvious debris that accumulates on this area during seasonal flooding events is a sad but apparent reminder that man has and continues to have an impact on this area. Also, as stated above, this parcel is too small, narrow, and proximate to areas that can not be managed for wilderness features to make it qualify for wilderness designation.*

Attachment A-2**Wilderness Review Worksheet
Missisquoi National Wildlife Refuge Comprehensive Conservation Plan**

Tract Name: Metcalfe Island

Size of Area: 199 acres

Date: May 2006

The following criteria are from the Wilderness Act of 1964 and the Draft Directors Order regarding Wilderness Review or Evaluation.

Desired Conditions**Size or Isolation**

- Land is at least 5,000 contiguous roadless acres
- or
- Land is of sufficient size practicable for its preservation
- Roadless island
- Area contiguous with designated or recommended wilderness or other undeveloped federal land

The total acreage of the Metcalfe Island proposal is 199 acres. Metcalfe Island is located at the northernmost end of the Missisquoi River delta. It is accessible only by boat during the warm season. It is bounded on the east by the main branch of the Missisquoi River, on the north by Lake Champlain, and on the south by the west branch of the Missisquoi River.

The area is roadless.

This wetland is part of the delta system where the Missisquoi River flows into Lake Champlain. It is accessible by boat in the warmer months or by foot or snow machine in the frozen months. There is high public use of Lake Champlain and the Missisquoi River in all seasons by fishermen, boaters, hunters, and birdwatchers, in motorized and non-motorized watercraft. These adjacent waters are not under the jurisdiction of the Service except within the mean low water line (93.055' msl).

No other wilderness areas are proximate to lands in this proposal, although some adjacent refuge lands are undeveloped. Other refuge lands contain improvements that have been necessary for refuge wildlife and wildlife habitat management programs, such as dikes, water control structures, barge slips, equipment storage facilities, artificial nesting structures and their associated predator guards, and unimproved roads.

Integrity and Naturalness

- Affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.

Improvements on this parcel include minor features such as wood duck nesting boxes, an artificial nesting platform for ospreys and an occasional sign for directing hunters.

Other apparent signs of man include the annual accumulation of debris that lodges throughout the island during the annual spring flooding of the river. These materials are washed downriver either through carelessness or intentionally and lodge in the exposed vegetation on the otherwise flooded island. Debris includes cans and bottles of all shapes, sizes and colors, 55 gallon polypropylene barrels, 5 gallon buckets, small propane tanks, rubber or plastic toys, tires, lumber, etc., essentially any riverside debris that floats. Other than the largest items or potential hazardous items, no attempt is made to clean this up every year as it is a monumental job and is identical to conditions on all other islands of the delta. As the annual vegetation grows it does "hide" these materials somewhat, and many of these items deteriorate over time, but they are an unfortunate eyesore and vivid reminder of man's presence and impact on the area.

Additionally, as indicated above, hunters, fishermen, and other motorboating recreationists are regularly and frequently present in the waters of Lake Champlain and the Missisquoi River around this island. The island is not of sufficient size to isolate visitors from the sounds of these surrounding activities, which further diminishes the wilderness experience.

This island is not open to public use except to limited and controlled hunting during portions of the 60-day waterfowl hunting season in the fall, during the 2-day firearms youth hunt for deer, and the 7-day primitive weapons hunt for deer. It is closed to entry to provide undisturbed habitat for migrating and nesting waterfowl, great blue herons, other marsh and wading birds, and neotropical migratory birds.

Special and Unique Features

- Contain ecological, geological, or other features of scientific, educational, scenic or historical value

The entire Missisquoi River delta, of which this parcel is a portion, is a special geological feature. Known as a bird's foot delta, it has a characteristic shape that is relatively rare on this scale in the United States.

Likewise, the delta has significant historic and cultural value due to its long use and occupation by Native Americans and early Europeans, and its prominence during the French and Indian War and Revolutionary War eras.

The nearby Shad Island has been the site of a significant great blue heron rookery for almost 60 years and at the turn of the century was touted as the largest great blue heron rookery in New England. While still a significant natural feature, the rookery now experience years of boom and bust and is outdone by the nearby Valcour Island Rookery on the New York side of Lake Champlain south of Plattsburgh.

The delta has long been and still is the most significant migratory waterfowl stopover in the northern Lake Champlain portion of the Atlantic flyway. Thousands of migratory waterfowl stop to rest and feed in the rich marshes of the delta as they travel along the flyway. This attraction to waterfowl results in a similar attraction to the area by waterfowl hunters.

Recreation

- Provides outstanding opportunities for solitude
- or
- Provides outstanding opportunities for primitive and unconfined priority public uses

Opportunities for solitude do exist on portions of this area, although those occurrences could be described as “fleeting” due to frequent disturbance by motorboats or snow machines depending on the season of the year. These activities occur on Lake Champlain around the entire perimeter of the refuge and on the Missisquoi River within the refuge, and are beyond the jurisdictional control of the Service. Activity by fishermen in motorboats is perhaps the most prominent activity since the entire Missisquoi Delta area is well-known as a fishing hotspot. An increasing number of professional and international fishing tournaments on Lake Champlain is bringing increasing attention and pressure to the areas around this island.

Likewise, opportunities for primitive and unconfined priority public uses are limited for the same reasons. This area is closed to public use during the waterfowl nesting season and brood rearing season, which in general is from ice-out until the onset of hunting seasons in the fall.

Acceptable Conditions- Some areas currently do not meet the desired conditions for a wilderness area, but have the potential to do so. The following list identifies those conditions under which land would be restored to meet the desired conditions in the future, or current uses would be managed so a wilderness character could be maintained.

Level of Land Use

Logging, farming, grazing, or other uses not involving extensive development or alteration of the landscape are acceptable if (at the time of review):

- the effects of these activities are substantially unnoticeable.
- or
- wilderness character could be restored through appropriate management.

And

Unimproved roads, structures, installations or utility lines are acceptable if:

- they can be removed upon the area’s designation as wilderness.
- or
- they are consistent with the wilderness.
 - Are historic structures or
 - Are facilities needed for protection of the wilderness.

or

- Underground utility lines if the area otherwise qualifies as wilderness, and maintenance of the utility lines does not require the routine use of motorized or mechanized equipment.

The wilderness character of the area would be fairly easy to restore as it is nearly free of manmade structures now. However, external influences are very apparent and are not under the control or jurisdiction of the Service, so will likely continue.

The wilderness character would be compromised due to the presence of motorized boats or snow machines around the entire perimeter of the area.

Management activities

Motorized tools, equipment, or structures are acceptable if:

- established or proposed management practices require them for the health and safety of visitors.

or

- established or proposed management practices require them for the protection of the wilderness resource.

Currently, motorized boats are necessary to provide safe ingress and egress to this area by big game hunters and waterfowl hunters, or for search and rescue operations. Mechanical control of invasive species has been conducted in the past and will likely be required in the future on portions of this area.

Prior Uses

Prior rights or privileges, such as grazing or limited commercial services, are acceptable if the operations:

- do not involve the routine use of motorized or mechanical equipment.

And

- do not involve development to the extent that the human imprint is substantially noticeable.

And

Surface and subsurface mineral rights for exploration and development (including oil and gas) are acceptable if:

- they would likely be relinquished, acquired, exchanged, or eliminated in the foreseeable future.

None of these prior uses currently occur on this area or are known to have occurred in recent history.

Research

Research is acceptable if:

- it does not require a permanent structure or any other facilities not needed for wilderness management.

Research has been conducted in this area on the wildlife and vegetative communities but none have required use of permanent structures.

Recommendation:

Tract meets desired conditions: No. *The area is too small to create the wilderness character, the solitude or the primitive conditions sought for wilderness areas. Its small compact size exposes visitors to modern machinery and landscapes in perimeter areas where these uses and features are beyond the jurisdiction and influence of the Service. The annual accumulation of flood debris detracts severely from the desired wilderness character.*

Tract could be managed to maintain a wilderness character: No. *While the tract itself might be managed to try to maintain a wilderness character, perimeter areas can not. This area is a victim of its very unwilderness-like locale. It would also be necessary to control invasive plant species on this parcel as part of an ecosystem approach to invasive species management. A failure to do so on this parcel would make efforts in adjacent areas futile and contribute to ecological calamity in the northern part of Lake Champlain.*

Tract has no potential for wilderness character: This is correct. *The obvious debris that accumulates on this area during seasonal flooding events is a sad but apparent reminder that man has and continues to have an impact on this area. Also, as stated above, this parcel is too small and proximate to areas that can not be managed for wilderness features to make it qualify for wilderness designation.*

