Great Lakes Fish and Wildlife Restoration Act

FINAL Project Report

*Indicates required content

Project Title: Ashland Flats WMA Grassland Restoration Project

Project Sponsor: Ducks Unlimited / New York State Department of Environmental Conservation

FWS Agreement Number: 301818G017

Principal Investigator(s): Sarah Fleming, Ducks Unlimited Inc., NY Regional Biologist

Report Author(s): Sarah Fleming

Period Covered: May 8, 2008 –October 15, 2011

Grant extended until August 31, 2012

Date Submitted: October 14, 2011

Study Objectives: *List study objectives here as indicated in the project proposal.*

1) Eliminate encroaching invasive plants such as wild parsnip, quack grass and Kentucky bluegrass
2) Restore high quality grassland habitat that can be easily maintained over the long-term by NY State Department of Environmental Conservation (DEC)
3) Establish productive habitat for migrating, wintering, and nesting grassland birds
4) Develop a long-term management plant that can be implemented by DEC
5) Monitor the impact of the restoration on the grassland bird community that utilizes the area

Description of Tasks: *List each project task and provide a description of activities pursued to complete each task*

1) An appropriate glyphosate-based product, with surfactant, will be applied to the field to kill invasive species listed in the objectives. The herbicide will be applied by a licensed applicator.

- Herbicide application: Project area was sprayed with non-selective herbicide to reduce scrub-shrub population, reduce invasive species, and prepare site for disking. Miller Spraying treated 44 acres of field at Ashland WMA. Purpose of spraying was to apply herbicide to fields in preparation for seeding. First herbicide application was completed in summer 2009 and included the spraying of a broadleaf-specific herbicide to control/eradicate dogwood and other undesirable broadleaves.

2) Preparation of the field for planting, including removal of rocks, plowing, disking, and touch up spraying.

- Delineated area for enhancement, total acreage was 101.4, included Field 4/5/6 (see map). Hazards were marked with flagging, and obstacles were removed by DEC.
- Tree and brush clearing: scrub/shrub were cleared from the project site using chain saws, stump grinders, and brush-hogging to restore grassland ecological community and maintain an early-successional state. Completed in 2009.
- Rock clearing: DEC personnel removed rocks and boulders from the project area to facilitate mowing future disking and maintenance of the site. Completed in 2009 and 2010.
- Mowing: DEC personnel mowed the project area to maintain grassland succession state and reduce scrub/shrub component. Mowing of the project area was completed in summer 2010.
- Touch-up spraying was completed in late-summer 2010 after preliminary investigations indicated vegetative composition was limited and invasive species were still dominant in the grassland enhancement areas. The repeat herbicide application was completed by Miller Spraying. Results in fall 2010 indicated the second herbicide treatment substantially reduced invasive species.
- Selection of grassland seed mix. A grassland seed mix was purchased from Argecol LLC in summer 2011. Seed mix included Canada wild rye, switch grass, Virginia wild rye, alsike clover, blue vervain, marsh milkweed, sneezeweed, and wild bergamot. The mixture of grasses chosen for planting factored in the desire to have varied heights/layers of vegetation within the fields. The varying heights will ensure maximum nesting cover, foraging sources, and habitat for a variety of grassland species.
- Local contractor was hired to lightly disk and seed fields 4/5/6. Light disking did not exceed a depth of more than 6 inches. Disking thinned existing stand of vegetation and permitted seed-to-soil contact for new seeding. Goal for disking was to create about 50% open ground. Sod was not turned over (no plowing or heavy aggressive disking was applied). Disking was completed during the first week of August 2011.

3) Establish and restore mixture of grasses to improve the grassland habitat.

- Seeding was completed at the rate (lbs/acre) detailed on the seed package (approximately 5.3 lbs/acre). Seeding was completed during the second week of August 2011. Seeding was followed by use of a cultipacker.
- Cultipacking fields 4, 5, 6 after disking smoothed out fields and gave a better seed to dirt contact and resealing of the sod. The cultipacker also allowed water to remain longer on the soil (i.e., pool in the "V" grooves produced by the roller), thus ensuring a great availability of water and a greater germination rate. Similarly, smoothing the fields will also improve DEC's ability to manage the grassland more effectively by reducing rough terrain and ensuring ease of long-term maintance. Cultipacking was completed the second week of August 2011.

4) Develop a management plan for the restored fields

- A 10-year Conservation Plan for Conserving grassland habitat in NY state was completed by Morgan and Burger (i.e., Audubon NY) and implemented in 2008. The management objectives included 1) establishment of native perennial vegetative cover

on land temporarily removed from agriculture; 2) manage early successional plant communities through re-vegetation, mowing, burning, grazing, and/or herbicide treatment; 3) restore and conserve rare or declining native vegetation; 4) create, maintain or enhance areas to provid upland wildife food and cover; and 5) tailor management activities toward the targeted breeding species.

DU coordinated with DEC to develeop a management plan for fields 4, 5, and 6 at Ashland WMA. The managerment plan provides guidelines to improve the grassland habitat using basic grassland management techniques. The plan was developed using the framework of the 2008 NYS Conservation Plan for Conservating Grassland Habitat.

5) Follow-up with monitoring of grassland habitat

- DEC and DU will coordinate and monitor the site annually to ensure positive responses of the native grassland plant community and will implement grassland habitat management as needed (i.e., 2011 DU and 2008 Audubon Grassland Management Plans). Management actions will be implemented if invasive species dominate more than 10% of the total area (≥10 acres). DEC will continue to mow the site annually (or as needed). Timing of mowing will be coordinated to avoid disturbing grassland nesting bird species (e.g., after July 15) and to ensure desired response of native grasses. When funding is available monitoring of bird response to grassland management will be completed over numerous years and will include cooperation with local birding groups, such as Audubon Society, as well as local birders. Data collected from bird point counts and vegetation monitoring will be reviewed by DEC and management decisions will be implemented based on the previous year's data and long-term trends. Monitoring efforts will assist developing long-term management guidelines for rehabilitation and improvement of grassland habitat at Ashland WMA, and elsewhere in DEC Region 6. At this time no funding dedicated to monitoring is available.
- DEC completed annual winter short-eared owl and raptor surveys (protocols attached).
- Some grassland breeding bird surveys have been completed at Ashland WMA. Examples of target breeding birds include upland sandpiper (state threatened), sedge wren (state threatened), bobolink, eastern-meadow lark, horned lark (i.e., state species of concern), savannah sparrow, and vesper sparrow (i.e., state species of concern). Also, from 2006-2010 the DEC completed winter raptor surveys at Ashland. Target species included northern harries (i.e., state threatened species) and short-eared owls (i.e., a state endangered species). A report has not been prepared on summer and winter bird monitoring, but data are available through DEC Region 6.

Major findings and accomplishments: *Include data represented in graphical format and appendices, as necessary. Where applicable include # of acres restored, # of stream miles reconnected, # of barriers removed and/or other metrics related to the completed work.*

Total acres restored are 104.1 acres of contiguous grassland habitat, which includes three fields: Field 4 (44.9 acres), Field 5 (28 acres) and Field 6 (31.4 acres), see attached maps.

Over the past several years anecdotal observations from DEC and volunteers have observed grassland specific breeding birds in fields 4, 5, 6, such as bobolinks, northern harriers, eastern meadow larks, sedge wrens, horned larks, vesper sparrow, and Henslow's sparrow (i.e., a state threatened species). Similarly, numerous birds have been observed foraging over the fields, such as kestrels and northern harriers. The data collected was anecdotal and has not been formally analyzed or published.

Data from the winter raptor surveys and monitoring has been collected annually since 2006, but is not proposed to continue in 2011 until more funding is available. Data may be available from DEC upon request, but no public reports have been prepared at this time.

Management implications of your work:

The grassland habitats of the St. Lawrence Valley are critically important to numerous indigenous and migratory grassland dependent bird species. A variety of species use Ashland WMA for nesting and forage habitat. "The Strategy to restore and protect the Great Lakes" includes recommendations for restoring and protecting important upland habitats, including grasslands. Therefore, restoration and enhancement of large tracts of grassland habitat will ensure the presence of high quality grassland habitat critical to numerous species, including short-eared owl, Henslow's sparrow, upland sandpiper, sedge wren, bobolink, and eastern meadow lark.

Additional restoration work needed and/or areas for future research:

The DEC would like to continue to collect annual data on vegetative communities and bird populations that occur in the fields where feasible, but limited funding has restricted on-going efforts. DEC has expressed a strong need for additional funding from out-side sources to assist with their on-going grassland monitoring programs. Grassland systems require annual maintenance to maximize the plant diversity and maintain the desired grasses and forbs. Therefore, DEC would like to apply an adaptive management approach towards implementation of their grassland bird Conservation and Management Plans. Future research and funding should be directed towards data collection of vegetative and avian community dynamics. Examples of data collection may include: 1) continue to assess local grassland bird community and identify reasonable targets (i.e., winter and breeding); 2) determine if project site meets the minimum habitat size requirements for targeted grassland species; 3) identify habitat characteristics preferred by targeted grassland species; 4) implement management and conduct regular monitoring; and 5) compare management techniques and relate to community matrices, both flora and fauna.

List of presentations delivered and outreach activities:
-Project summary and partnership were highlighted at the following events:

1. 2009 Ducks Unlimited, NY State Convention, Port Jefferson, NY- March 2009
2. 2010 Ducks Unlimited, NY State Convention,
3. NYS Wetland Forum, Buffalo, NY, April 2010
4. 2011 Ducks Unlimited, NY State Convention, Watkins Glenn, NY-March 2011
5. Montezuma Audubon Habitat Enhancement Seminar Series, April 2011
6. NYS Wetland Forum, Lake Placid NY, April 2011

***Include relevant pictures or images associated with the project:** *Please submit pictures* **as separate electronic image files**. *These can be emailed, mailed on a disc, etc. The images will be used to assist in describing the GLFWRA accomplishments and outcomes and may appear in any number of factsheets or reports (when images are used, appropriate photo credit will be noted). If no pictures are available, please let us know why.*

Pictures are provided with the attached document as a CD, as requested.

Geographic region project occurred in or effects: *If appropriate, please include a County, State, Latitude and Longitude (in decimal degrees) for the project site(s).*

Grassland habitat restoration was completed at the Ashland Flats WMA project site which is located northeast of the Village of Three Mile Bay, along the Depot and Ashland roads, Jefferson County, NY (44.117847N; -76.184498W).

The upland restoration project sites at Ashland WMA consist of eleven large fields totaling 315 acres. These fields are identified by numbers 1-11 and range in size from 28-72.3 acres. The Ashland WMA Grassland Restoration Project completed upland grassland habitat management which included mowing, disking, and seeding in fields 4 (44.9 acres), 5 (28 acres) and 6 (31.4 acres), for a total of 104.1 acres.

Maps attached.

***List of reports and peer-reviewed papers completed or in-progress:** *Please attach copies of all completed reports and papers related to this work. Also, please remember to acknowledge funding support from the U.S. Fish and Wildlife Service through the Great Lakes Fish and Wildlife Restoration Act in publications, reports, presentations etc. that result from this work.*

Report: 2010 Ducks Unlimited Conservation Report.

NYSDEC Ashland Winter Raptor Report: *in preparation*, will be available at a later date upon request. Contact: Irene Mazzocchi, Angie Ross or Mike Sicley with DEC Region 6 for more details.

Budget Summary

Tasks Items	Budgeted amount	Expended amount	Total Remaining
A. **Salaries and Wages**	$0.00	$5,824	$-5,824*
B. **Maintenance and Operation**			
1. Grass seed of native cool season mix	$9,000.00	$7,350.00	$1,650.00
2. **Travel**			
Mileage	$150.00	$50	$100
3.**Communications**			
Project Sign to acknowledge funding	$150.00		$150.00
4. **Other**			
Rock removal ($1000.00 non-federal match)	$450.00	--	$450.00
Herbicide spraying	$13,000.00	$12,900.00	$100.00
Plowing	$3,000.00	--	$3,000.00
Disking	$8,000.00	$7,000.00	$1,000.00
seeding	$17,000.00	$12,000.00	$5,000.00
cultipack	$3,500.00	$3,500.00	$0.00
sub-total	$44,950.00	$35,400.00	$9,550
Sub-total	$54,250.00	$48,624.00	$5,626
Indirect at 5%	$2,712.50	$2,431.20	$281.30
TOTAL	$56,962.50	$51,055.20	$5,907
MATCH			
DEC – Brush hogging	$6,500	$6,500	
DEC – Rock removal	$1,000	$1,000	
DU	$6,142	$6,144	

*negative sign indicates the budget item was not included in the original budget proposal, but was expensed with permission of USWFS.

Expenses:

As stated in the contract, DU expended funds "as generally shown in (our) proposal and budget."

DU has expended at total of $51,055.20, including $48,624 in direct expenses and $2431.20 in indirect costs. Therefore, we have spent approximately 90% of the award amount ($51,055.50 of $56,962.50). All grassland management tasks outlined in the proposal were completed by September 15, 2011.

Several task items were projected greater than the actual expended amount. For example, several tasks items cost less than the original estimates, such as the contractor costs ($9,550 less), the seed mixture ($1,650 less), and travel costs ($100 less). Similarly, the rock removal was able to be completed by DEC staff as non-federal match, and thus the $450 budgeted for rock removal was not expended. A total of $5,907.00 remains in the budget (i.e., $5,626 direct costs and $281.30 indirect costs).

DU charged $5,824 to cover staff time and wages. This expense was not included with the original budget, but USFWS confirmed the expense could be applied to the grant.

Match:

The DEC has completed their non-federal match requirements. For example, $1,000 of in-kind services was dedicated to the removal of rocks in the fields. Similarly, DEC expended $6,500 in match as in-kind services for brush-hogging the 100 acre project site. Total match provided by DEC was $7,500.

DU has provided $6, 144 in staff time as non-federal match to meet the required 25% cost-share match.

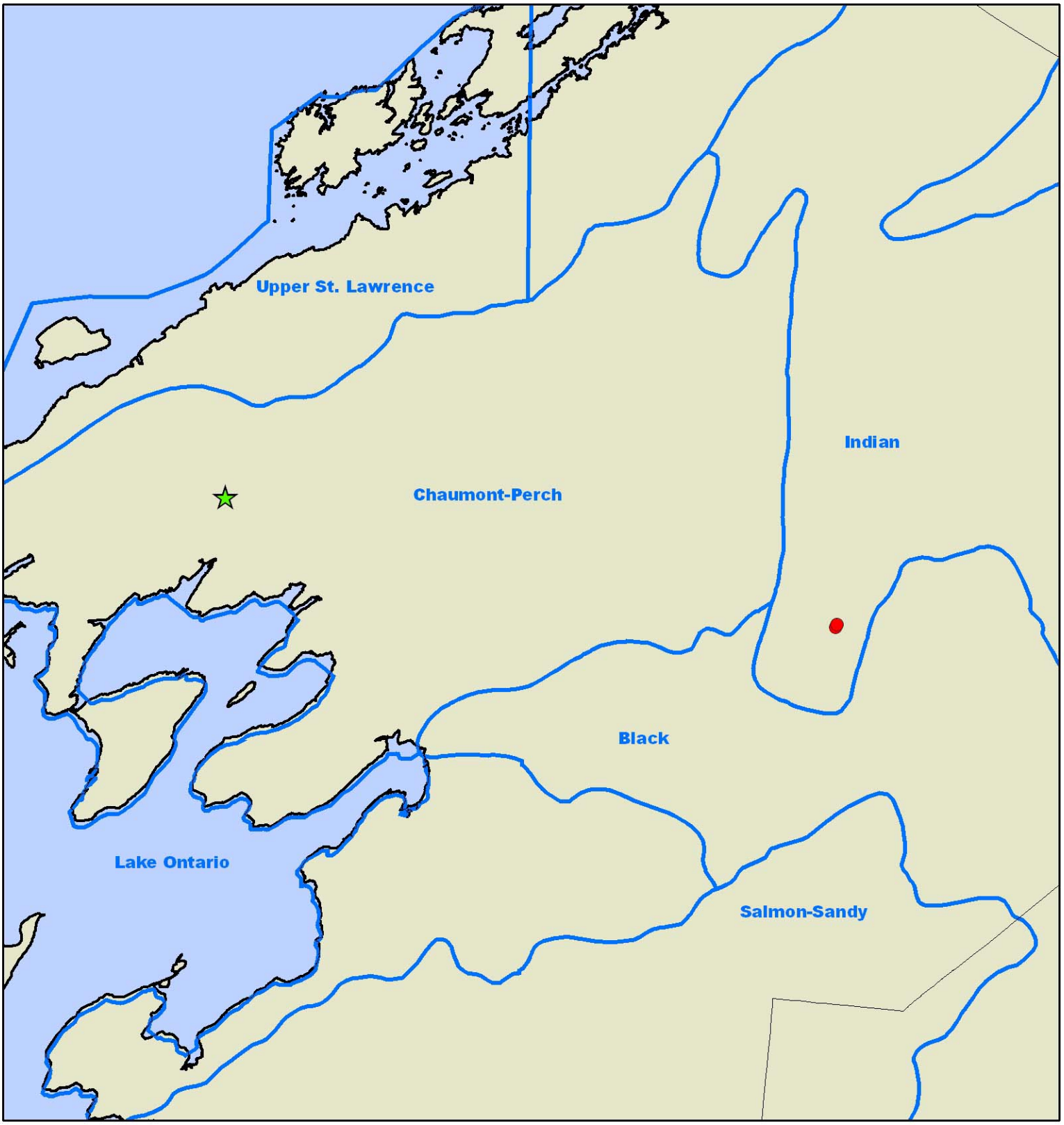
Conclusion:

DU and DEC came in under budget. A total of $5,907 remains in the budget.

DU will also continue to work with DEC on the grassland management plan for the restored fields. The final management plan will continue to take time to finalize, and thus to maximize the long term value of the field, and the plan will refine management techniques to ensure the best ecological response of the grassland communities.

Appendix 1:

Maps of Ashland Grassland Restoration Site



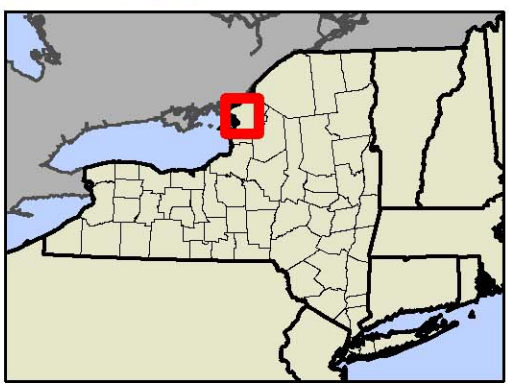


Figure 1. Watershed Map and Site Locations

Impact Site

Mitigation Site

Watershed

N

3 1.5 0 3 6

Miles

DUCKS UNLIMITED
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Three Mile Bay
Chaumont
12E
E Main St
W Main St
Squaw Island
2.48 mi
© 2010 Google
© 2010 Europa Technologies
Image © 2010 New York GIS
©2010 Google
Imagery Dates: Mar 31, 2006 - Apr 1, 2006
44° 5.751' N 76° 9.958' W elev 298 ft
Eye alt 45611 ft


Millens Bay Rd
Ashland Rd
1389 ft
© 2010 Google
©2010 Google
Image © 2010 New York GIS
Imagery Dates: Mar 31, 2006 - Apr 1, 2006
44° 7.051' N 76° 10.936' W elev 319 ft
Eye alt 5104 ft

WHIP Plan Map

Date: 2/17/2006

Customer(s): DEPARTMENT OF ENVIRONMENTAL CONSERVATION

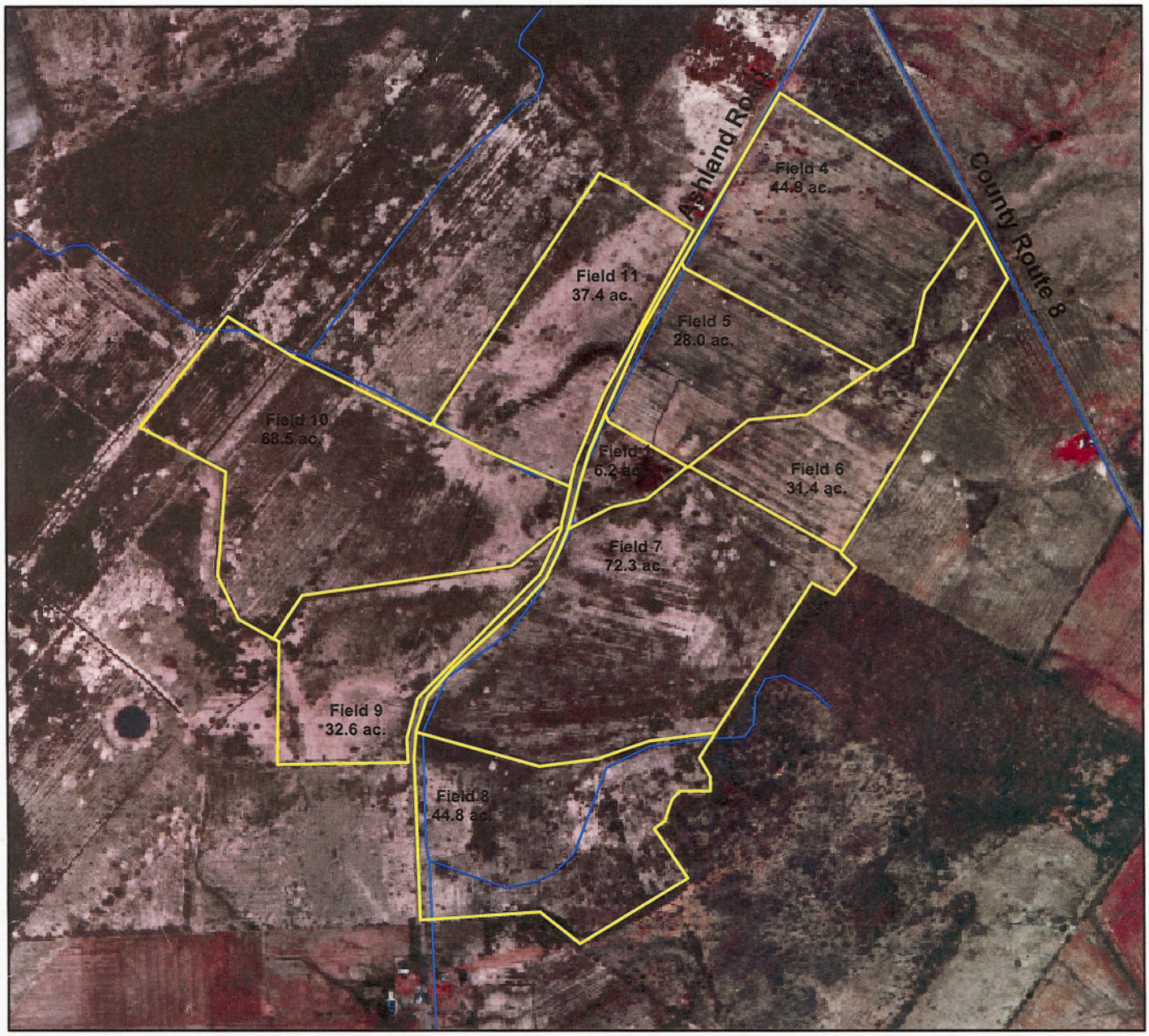
District:

Field Office: WATERTOWN SERVICE CENTER

Agency: USDA NRCS

Assisted By: Christopher R Reidy

State and County: NY, JEFFERSON



Legend

- Roads
- Consplan

1,000 0 1,000 2,000 Feet

N

Appendix 2:

Grassland Management Techniques For

Ashland WMA: a working document

Grassland Management Techniques for Ashland WMA

Prepared for :

NYSDEC Region 6

Under USFWS Grant Agreement number 301818G017

Prepared by:

Ducks Unlimited Inc.,
2011

Funding for the grassland enhancement and management plan at Ashland WMA, in Fields 4/5/6 was provided by the U.S. Fish and Wildlife Service through the Great Lakes Fish and Wildlife Restoration Act under Grant Agreement Number 301818G017.

The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinion or policies of the U.S. Government. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government.

***Site Description*:**

The Ashland Wildlife Management Area (WMA) is located within the St. Lawrence Valley (SLV), of New York, Jefferson County. The SLV is one of the original focus areas listed in the North American Waterfowl Management Plan (NAWMP). It is also listed in Partners in Flight, the US Shorebird Conservation Plan, and the North American Waterbird Conservation Plan as a priority area. The Audubon Society lists Ashland WMA as an Important Bird Area. The New York Department of Environmental Conservation (NYSDEC) highlights the grassland habitat of the St. Lawrence Valley within the NYS Comprehensive Wildlife Conservation Strategy, and its value to a variety of grassland nesting birds, including: the short-eared owl (*Asio flammeus*), Henslow's sparrow (*Ammodramus henslowii*), bobolink (*Dolichonyx oryzivorus*), eastern meadowlark (*Sturnella magna*), and northern harrier (*Circus cyaneus*).

The site is also part of the larger SLV Conservation Focus Area supported by multiple local, state and federal conservation agencies and organizations. Restoration of the grassland habitat such as that proposed for the grassland restoration is a priority conservation strategy in the SLV. Grassland restoration in the SLV helps meet priorities set forth by conservation and watershed plans including the North American Bird Conservation Initiative and the Comprehensive Wildlife Conservation Strategy for the northeast Lake Ontario-St. Lawrence Basin in NY. Priority issues include ongoing loss, fragmentation and degradation of habitat, resulting, in part, from unsustainable silvicultural and agricultural practices, climate change, and exotic and invasive species.

Grassland Habitat Objectives:

Stabilizing the declines of populations of grassland birds has been identified as a conservation priority by a majority of bird conservation initiatives, groups, and agencies in the northeastern US and elsewhere in North America (Brennan and Kuvlesky 2005). In New York, declines in populations of grassland birds are related to a loss of agricultural grasslands, primarily hayfields and pastures. The New York Chapter of the Audubon Society, with support from NYSDEC is coordinating a comprehensive grassland bird conservation effort in New York State. A significant portion of this initial effort is the implementation of a grassland bird conservation plan (i.e., 2008 A Plan for Conserving Grassland Birds in New York: Final Report to the New York State Department of Environmental Conservation under contract #C005137). Therefore, management objectives and strategies described in this document will target site-specific goals, but will also address goals within the SLV focus area for grassland management. Management recommendations herein are meant to ensure the greatest likelihood for sustaining grassland bird

populations on a long-term basis. Objectives for management for the grassland target species include the following:

1) Eliminate encroaching invasive plants such as cow parsnip (*Heracleum maximum*), quack grass (*Elymus repens)*, and Kentucky bluegrass (*Poa pratensis*).
2) Maintain high quality grassland habitat that can be easily managed over the long term by NYSDEC.
3) Establish productive habitat for migrating and nesting grassland birds.
4) Monitor the impact of the restoration on the grassland bird community that utilizes the area.
5) Identify reasonable population goals for targeted grassland birds (i.e., wintering and breeding).
6) Identify habitat characteristics selected by targeted grassland species.
7) Compare management techniques and relate to community matrices, both flora and fauna, to maximize the value of the grassland habitat.

Grassland birds select habitats for a variety of reason and habitat selection often differs among species. Some species are area-sensitive requiring large contiguous blocks of habitat for successful reproduction. Area-sensitive species of special concern in the SLV include the bobolink, northern harrier, upland sandpiper (*Bartramia longicauda*), Henslow's sparrow, and savannah sparrow (*Passerculus sandwichensis*). Area-sensitive birds often have a minimum threshold for occupancy, and thus maintenance and management of large (>200 acres) of quality grassland habitat near other contiguous tracts are important to ensure successful recruitment of target species.

Composition of grassland also influences the productivity of the sites for nesting and foraging grassland birds. Several important factors for management include: vegetation height, cover density, grass: forb ratio, and plant species composition. Therefore, maintaining a diversity of grassland habitats within the SLV will meet the needs of numerous target grassland bird species. Regular disturbance appears to be important for maintenance of grassland plant communities and breeding grassland bird diversity (Bragg 1982).

Grasses are generally categorized into two groups: cool-season grasses and warm-season grasses. A majority of grasses found in the northeast US are non-native, cool-season grasses which grow best during spring and fall when soil and air temperatures are relatively cool (Oehler et al. 2010). Although often introduced, cool-season grasses can be beneficial to grassland species in the northeast US. Cool-season grasses are easily established, green earlier in spring than native grasses, and thus can provide excellent early season forage and cover. However, cool-season grasses are relatively costly to manage and can become overly dense and monotypic. Warm-season grasses also provide a multitude of ecological benefits and management opportunities. For example, warm season grasses are well adapted to a variety of site conditions, management costs are relatively low, and root systems completely regenerate every three to four years resulting in increased soil fertility, organic matter, and carbon sequestration. To maximize benefits to grassland bird species, it is essential that we conserve, maintain, enhance, restore, and establish both cool- and warm-season grasslands throughout the region (Oehler et al. 2010).

Methods

The Ashland Grassland Enhancement and Management Plan will contribute to the goals set forth in the 2008 Plan for Conserving Grassland Birds in New York. The Final Report was completed by Audubon and submitted to the NYSDEC under contract #C005137. The goals of the plan are to restore and maintain habitat that will be used by migratory birds as well as contribute to the goal of building self-sustaining populations. NYSDEC conducts rotational mowing of their grassland fields at Ashland WMA. In addition to regular mowing, to maximize the long-term value of the fields, additional management tools to be considered include prescribed burns, herbicide treatments, grazing, and supplemental planting. Evaluation of management techniques that maximizing the value of grassland habitat for birds include multiple variables, such as quantifying the amount of thatch and bare ground, vegetative height, plant community diversity and other factors that are determined as management plans are implemented. The management and enhancement plan recommendations contained in this document will serve as a working document and will be revised as necessary based on feedback from monitoring. The adaptive management plan aims to increase the effectiveness and efficiency of management over the long-term.

Grasslands can revert to shrublands and other early successional habitats quickly. This process is expedited by the prevalence of invasive shrubs such as honeysuckle (*Lonicera* spp.), buckthorn (*Rhamnus cathartica*) and multiflora rose (*Rosa mutiflora;* Morgan and Burger 2008). Morgan and Burger (2008) state that even native vegetation, such as some goldenrod (*Solidago* sp.) and asters (various members of the Asteraceae family) can also rapidly alter the forb component and dominate the grassland, thereby reducing its suitability as habitat for grassland birds. To prevent degradation of grassland habitat from succession or invasion by undesirable vegetation, a regular pattern of disturbance (i.e. management) is needed. Monitoring the vegetative community, understanding what plants are used by grassland birds, and developing a plan to improve habitat is paramount for a successful grassland restoration project.

Natural Resources Conservation Service (NRCS) recommends that grassland management be implemented by one or more in combination of the methods described below. However, no more than 1/3 -1/2 of a field/complex (i.e., Ashland WMA) should be disturbed during any given management period.

Mechanical manipulations:

I) Mowing: Populations of grassland birds often respond positively to mowing (Herkert et al. 2004). Ideally, mowing should be conducted after nesting is completed (i.e., after August 1; USDA 2001). Mowing can be conducted prior to the nesting period (i.e., prior to May 1), but managers should understand that such activity may reduce nesting habitat suitability during the year that mowing is conducted. Mowing also should be completed when undesirable species reach a height of 12-18 inches and before the undesirable species produce seed. The NRCS in Jefferson County, NY has recommended mowing height should be no less than 8-10 inches for warm season grasses and no shorter than 6 inches for cool season grasses as part of their Wildlife Habitat Incentives Program (WHIP) for Ashland WMA. Mowed litter should not be removed from grasslands (i.e., haying) because this practice reduces and alters soil nutrients and may alter

grass and forb production (Herkert et al. 2004). . In general, annually hayed grasslands often support fewer bird species than mowed grasslands where litter remains following management. Overall, special attention should be taken to avoid mowing during the nesting season which can significantly reduce densities of grassland birds and reproductive output (Bollinger et al. 1990) and mowing of fields should be staged (i.e., mow every 3-4 years).

When possible, mowing should occur on no more than 50% of the stand (i.e., to maintain cover patches) in any given year and cycle in 3-5 year increments. Timing of mowing can be more frequent if woody vegetation or invasive species dominate the site. Strip mowing (i.e., rotating strips across the field) at 100-foot intervals also can be applied in spring prior to nesting to encourage and maintain vegetation diversity without greatly decreasing nesting success or abundance of foods during fall (USDA 2001).

Horned larks require patches of bare ground for nesting and feeding (Audubon 2011). Therefore, maintaining or leaving patches of bare ground should increase bird diversity. These patches of bare ground can be located in areas of poor soil conditions, or in areas where thatch (compressed dead grass) becomes thicker than two inches. Bare ground should not compose more than 5-10% of the total area (Audubon 2011, MDIFW 2010).

Simply mowing or "brush-hogging" (as opposed to haying) has one drawback, in that the cut vegetation is left to accumulate at the site in the form of "thatch" (i.e., ground litter). Grassland species vary in their preferences regarding thatch, and several prefer little or none (Morgan and Burger 2008). When species preferring little or no thatch are the targets for management, or when thatch has accumulated to the point of hindering the growth of desirable vegetation, removal of the cut grass (i.e., haying) may be recommended. Another alternative is to use another method or combination of methods, such as grazing or burning.

Recommendations/Summary:

1) Avoid mowing in areas with ground nesting birds between May 1 and August 1.
2) Be aware of where grassland birds are nesting in fields. If mowing must be completed before August 1 (e.g., to control woody vegetation or invasive species), avoid areas where birds are frequently seen, and leave patches or edge strips unmowed.
3) Limit mowing to once every 3-4 years in fields not harvested for hay.
4) Maintain some areas of field with patches of bare ground.
5) Reduce invasive and woody vegetation.
6) Avoid night mowing: Night mowing will disturb roosting birds.
7) Manage multiple contiguous areas and alternate mowing among fields.

II) Disking and Reseeding: **"**Rough or light" disking can also be applied to existing stands of grasslands typically greater than 4 years old. Rough disking should increase the amount of open ground and encourage a greater diversity of plant communities of warm- and cool-season grasses. Disking should not exceed a depth of more than 4-6 inches. The goal for disking is to create about 50% open ground. Strips of ≤75 feet can also be disked in existing grasslands with buffer strips 100-150 feet wide. Disking 50% of the field and leaving buffer strips will also ensure nesting cover and forage for grassland species. Disking will be most effective if it follows mowing. Removal of the ground cover will increase the ability of the disk to turn the soil, will

increase the seed to soil contact, and reduce the likelihood that light will be restricted because of thatch.

Disking can also be followed up with seeding. If the observed diversity of the plant community is low then seeding may improve the habitat for grassland birds. Disking will thin existing stands of vegetation and permit seed-to-soil contact for new seedlings to sprout. Sod should not be turned over (no plowing or heavy aggressive disking). Seeding should be completed at the rate (lbs/acre) detailed on the seed package. A cultipacker may be used to give a better seed to dirt contact, resealing sod, and smooth the field surface.

Seed selection is a key component to a successful planting. Always purchase native grass seed in terms of pounds of pure live seed (PLS) and seed used can be either prepared mixes or you can purchase seeds of individual species and prepare your own mix. Seeding rates should range from 8 to 12 lbs of PLS/acre.

Pre-planting preparation actually begins the year prior to seeding. Once a site has been selected and the proper seed mix has been determined, an evaluation of existing vegetation, mulch, nutrient deficiencies, and weed problems must be conducted (Oehler et al. 2010). A heavy mulch layer hinders proper seed placement, and maintains cooler soil temperatures that slow down germination. Optimum seeding dates are typically May and June. Warm-season grasses require minimum air temperatures of 60º to 65º F and soil temperatures of 50ºF. Later plantings may reduce weed and cool-season grass competition, while earlier plantings allow more time for stand establishment. Control of non-desirable species prior to planting is essential for successful establishment of desirable warm-season grasses. If non-desirable species persist after pre-planting year treatments, a selective herbicide (see below) can be applied (Oehler et al. 2010). A firm seedbed will help to conserve moisture and ensures good seed-to-soil contact, which is critical for adequate germination. Recently tilled soil should be compacted with a roller packer prior to planting. Seeds should be planted at a depth of 1/4 to 1/2 inch.
Evaluating stand development is critical and patience can be the key factor to a successful planting (Oehler et al. 2010). During the first two years and, in particular, the first growing season, non-desirable plants are the greatest concern because they may out-compete the desired warm-season grasses.

Chemical

Herbicide: Selective herbicides can be used to effectively manipulate plant succession, control woody vegetation, reduce plant completion, control invasive species, and improve plant diversity. Careful planning and care in application are required in the use of chemical herbicides to improve existing habitat. Selection of a product should be based on several factors, such as, product effectiveness, non-target species impacts, toxicology risk, and offsite movement of chemicals. Herbicides can be utilized to control non-desirable plants in grasslands. Each herbicide controls or suppresses a range of plants and differs in its effects on warm-season grasses. Selective spraying of isolated patches of woody plants or exotic invasive plants can be accomplished with a variety of herbicides. Applying a selective broadleaf herbicide throughout an entire field can be an efficient way of enhancing existing native grasslands.

Herbicides can be an effective tool to control non-desirable grass species, or invasive species. However, the use of chemical treatments as a primary management should be avoided or minimized because commercial herbicide use may have negative impacts on bird populations, (impacts are variable and often require field studies to predict accurately; Herkert et al. 2004). The use of integrated herbicide management techniques in combination with other grassland management tools, such as mowing, re-seeding, and disking should maximize the plant community diversity and ensure a positive response of desired plant species after a treatment. Chemical treatment is best applied in the early spring or fall and should not be applied during nesting periods (May 1- August 1). When applying a chemical treatment to grassland area ensure it is applied by a licensed applicator, and that only targeted species or specific areas are treated. Avoid covering large areas, such as aerial spraying when possible (i.e., spot-spray undesirable plants when possible).

Grazing

Grazing livestock, such as, cattle, horse, and sheep, can have varying effects on different vegetation structure of pastures. Many grassland birds in the northeast US can tolerate and will benefit from light grazing because the grazing creates a mosaic of grass heights and structure, and removes plant litter (i.e., thatch) that has accumulated beyond desired levels (Audubon 2001, Herkert et al. 2004). However, intensive grazing can lead to the loss of plant diversity and cover for wildlife (Audubon 2011). Large grasslands can be managed in rotational systems to benefit breeding birds. In grazed pastures with nesting birds, vegetation should cover $\geq$ 40% of the area at a minimum height of 8-12 inches (Audubon 2011, Oehler et al. 2010). During the most critical nesting periods (June 1-July 15) fields should not be grazed. Avoiding over grazing also will reduce the risk of erosion, large patches of bare ground, and decreased plant and insect diversity. Grazing and the type of livestock that is used in the field can vary, and thus it is important to monitoring the grazing site and experiment with different regimes. Experimentation of grazing timing, frequency, and intensity will assist with maintaining uplands, wetlands, and vegetative diversity, while reducing erosion (Audubon 2011).

Bird response to grazing will vary, for example, bobolinks attain greatest densities on grazed grasslands (Herkert et al. 2004), whereas, grasshopper sparrows (*Ammodramus savannarum*) and eastern meadowlarks favor moderate grazing. Many species can tolerate light grazing, but heavy grazing greatly reduces and can eliminate some species from the field (e.g., northern harriers, and short-eared owls). Habitat quality may be reduced at greater stocking rates (Morgan and Burger 2008). Further, even in rotational grazing systems, when livestock are grazed at relatively high densities they may even negatively impact vegetation characteristics below the thresholds required by grassland birds.

Grazing may be a good option for grassland management, and can be conducted within the project site and still provide opportunity for successful bird breeding if it is managed and monitored closely (Morgan and Burger 2008). Best management requirements for grazing can be met by maintaining a low stocking rate and ensuring that only a small portion of the pasture (the areas being actively grazed at any given time) is used.

Prescribed Burning

Prescribed burning can be one of the most effective management tools to maintain and rejuvenate native grasslands (Oehler et al. 2010, Audubon 2011). Burning may be applied in combination with mowing or grazing to periodically remove excess litter, rejuvenate seed bearing annuals, and increase plant diversity. Ideally, prescribed burns should be conducted between March 1 and April 15. Burns can also be conducted later in the summer (after August 15) and early fall to reduce woody plants that invade grassland fields. Grasslands burned every 3-5 years often have greater densities of grassland nesting birds than unburned sites. Most grassland birds will occupy a burned site within 1-2 years (Audubon 2011). Burning produces more succulent vegetation, which is more palatable to rabbits and deer and supports a greater number of insects that are readily available to young birds (Oehler 2010). Burning every 3-5 years provides the best habitat for grassland birds (USDA 2001). Do not burn more than 50% of the grassland area in any one year (ideally 20-40% annually; Audubon 2011). It is best to burn sections of fields (or individual fields within a complex) allowing adjacent grasslands to provide habitat for nesting birds during the burn and regeneration periods.

Before starting any prescribed burn check with state fire authorities to determine if restrictions exist for the proposed burning. Similarly, a burn plan including designation and location of all firebreaks should be prepared prior to initiation of the prescribed burn. Relative humidity, wind, air temperature, and fuel conditions influence burn conditions and should be monitored before and during the burn. However, burning may be less practical for widespread application. Costs associated with personnel and training, equipment, and difficulty of coordinating resources and planning can make burning an unviable option for many public land managers (Morgan and Burger 2008).

Burning can increase forb diversity, promote vigorous warm-season grass growth, release nutrients back to the soil, and suppresses invasive competition. Burning, unlike other routine management practices, removes accumulation of vegetative litter from the ground's surface (Oehler et al. 2010). Removal of this excessive thatch can be critical to ground-nesting birds that travel through the fields to forage for food and escape from predators. Early spring burning often has the added benefit where potential fuels in adjacent habitats (e.g., dormant vegetation or compressed ground litter that take longer to dry out than residual warm season grasses) may hold high moisture contents, and thus help to limit the unintended spread of fires (Morgan and Burger 2008).

Monitoring and Conclusions:

Monitoring should be a component of all habitat restoration projects. Unfortunately, these activities are traditionally under-funded, and thus rarely completed. Typical monitoring efforts should include annual bird and vegetation surveys that are reproducible at designated plots. At a minimum, data collected in vegetation surveys should include species present, percent cover, structural diversity, woody plant and cool-season grass encroachment and ground litter density.

A multi-faceted approach is essential in dealing with grassland habitat loss (cool- and warm-season) and the associated breeding bird declines on a regional basis. This includes maintenance

of existing grassland habitat, restoration of degraded grasslands, creation of new grasslands (where feasible), outreach regarding grassland values and development of mutually beneficial agricultural-grassland wildlife operations, and development and continuation of monitoring and evaluation programs (Oehler et al. 2010).

Areas of restoration aimed at attracting area-sensitive grassland birds should be at least125 acres and preferably over 250 acres. As a result of differences in plant responses to various management techniques, managers are often encouraged to provide a mosaic of burned or unburned, grazed or ungrazed, and mechanically treated or untreated grasslands to provide for a full range of grassland bird habitat preferences (Herkert et al. 2004). A multi-faceted approach is essential in dealing with grassland habitat loss (cool- and warm-season) and the associated breeding bird declines on a regional basis.

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Appendix 3:

NYSDEC Protocols for Winter Raptor Monitoring

Short-eared Owl and Northern Harrier Driving and Stationary Survey Protocols

Driving survey protocol

We will conduct single-observer driving surveys 1-5 times per week from 15 December-1 March in six grassland focus areas in New York State (Fig. 1). We will begin surveys from one hour before sunset until dark. Driving surveys will be conducted along established transects that will begin at intersections near grasslands that contain focal species (e.g., short-eared owls and northern harriers) and continue through grassland habitat (Fig. 2). Transect surveys will incorporate stops every 800 m (0.5 mi) to scan for focal species**.** Each transect sample will begin at a random distance 0-799 m after the start location of defined transects to ensure a random distribution of stop points along each transect during successive surveys. We will generate random numbers using a random number table. At the randomly established transect endpoints and at each stop along transects, observers will turn the vehicle off and exit the vehicle to scan the horizon for focal species in all directions with binoculars. Each focal species individual will be recorded in one of three groups based on the time of first observation: Group A: 0-3 min., B: >3-5 min., and C: >5-10 min. We will record the distance of first observation with the aid of a laser rangefinder. Where individuals are flying or otherwise difficult to collect distance information, we will use a stationary object at about the same distance as the target individual to estimate distance. We will record the behavior of each individual observed during stops: foraging, perched, etc. (see data sheet for behavior definitions). Observations collected when vehicle is in motion will be recorded on a separate sheet and treated separately in the analysis. To determine inter-observer differences in detection probabilities, we will conduct surveys using two observers once per week, with each observer following the same protocol as single-observer surveys. No communication will be allowed between observers until the survey is completed.

We will begin each transect survey at the opposite end that was begun during the previous survey we will survey all transects in random order without replacement. Once all transects are surveyed, a second round of surveys will begin using the same methods, and so on.

Stationary Survey Protocol

We will conduct single-observer stationary surveys 1-5 times per week from 15 December-1 March in six grassland focus areas in New York State (Fig. 1). Stationary surveys will have two objectives: (1) determine the most effective stationary survey protocol for detecting focal species (e.g., short-eared owls and northern harriers) and (2) census short-eared owls and record behavior at potential roost sites. Both objectives will be met by conducting two surveys simultaneously, which are described in detail in the following sections. We will conduct all stationary surveys from one half hour before sunset until dark. Surveys will be conducted near grassland complexes (i.e., sites) that contain focal species from within the vehicle or blind at vantage points with clear visibility in all directions (Fig. 3). In geographic regions where there are spatially clustered sites that may experience different weather patterns than the majority of other sites within the region, we will conduct stationary surveys using a randomized block design, whereby we survey each block (i.e., group of sites) in random order without replacement. Once all sites are surveyed, a second round of surveys will begin using the same methods, and so on. To determine inter-observer differences in detection probabilities, we will conduct surveys using two observers once per week, with each observer following the same protocol as single-observer surveys. No communication will be allowed between observers until the survey is completed. The maximum number of short-eared owls observed at any one time will also be recorded at the end of the survey period.

Survey Protocol Assessment

To assess survey protocol, we will record each observation by placing it into groups based on the time of first observation: Group A: 0-5 min., B: >5-10 min., and C, D, E, and so on at 10 minute intervals thereafter until dark. We will also record the distance and bearing of first observation with the aid of a laser rangefinder and compass, respectively. Where individuals are flying or

otherwise difficult to collect distance information, we will use a stationary object at about the same distance as the target individual to estimate distance. We will record the behavior of each individual observed: foraging, perching, etc. A behavior will be defined as the state the individual was in for more than 50% of the time it was observed. For example, foraging will be defined as an individual that was observed capturing or eating prey, or swooping and contacting the ground. See data sheet for definitions of other behaviors.

Short-eared Owl Scan Samples

To assess focal species numbers and behaviors, we will perform scan samples in a 360^{o} angle using binoculars at regular intervals. Scans will take place outside of the vehicle and will be a snapshot of short-eared owl activity, so they will be completed with one sweep of a 360^{o} angle. We will conduct scans at the following times: 0 min. (start time), 5 min., 10 min., 20 min and so on until dark. We will also record the distance and bearing of the first observation of each individual with the aid of a laser rangefinder and compass, respectively. Where individuals are flying or otherwise difficult to collect distance information, we will use a stationary object at about the same distance as the target individual to estimate distance. We will record behavior as the state the individual was in when scanned with binoculars (see data sheet for behavior definitions).

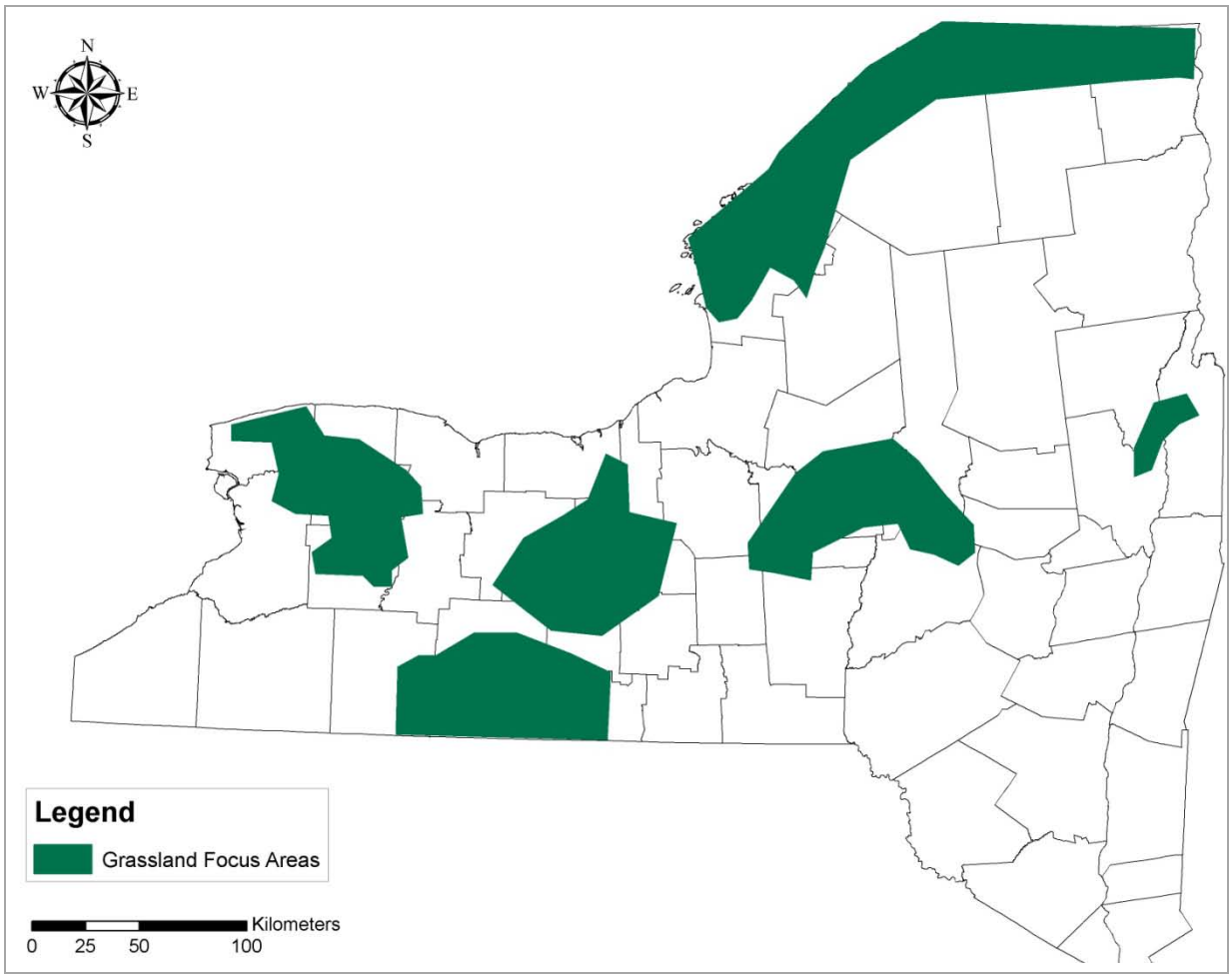


Figure 1. Grassland focus areas surveyed for shot-eared owls and northern harriers in New York from 15 December-1 March 2010.

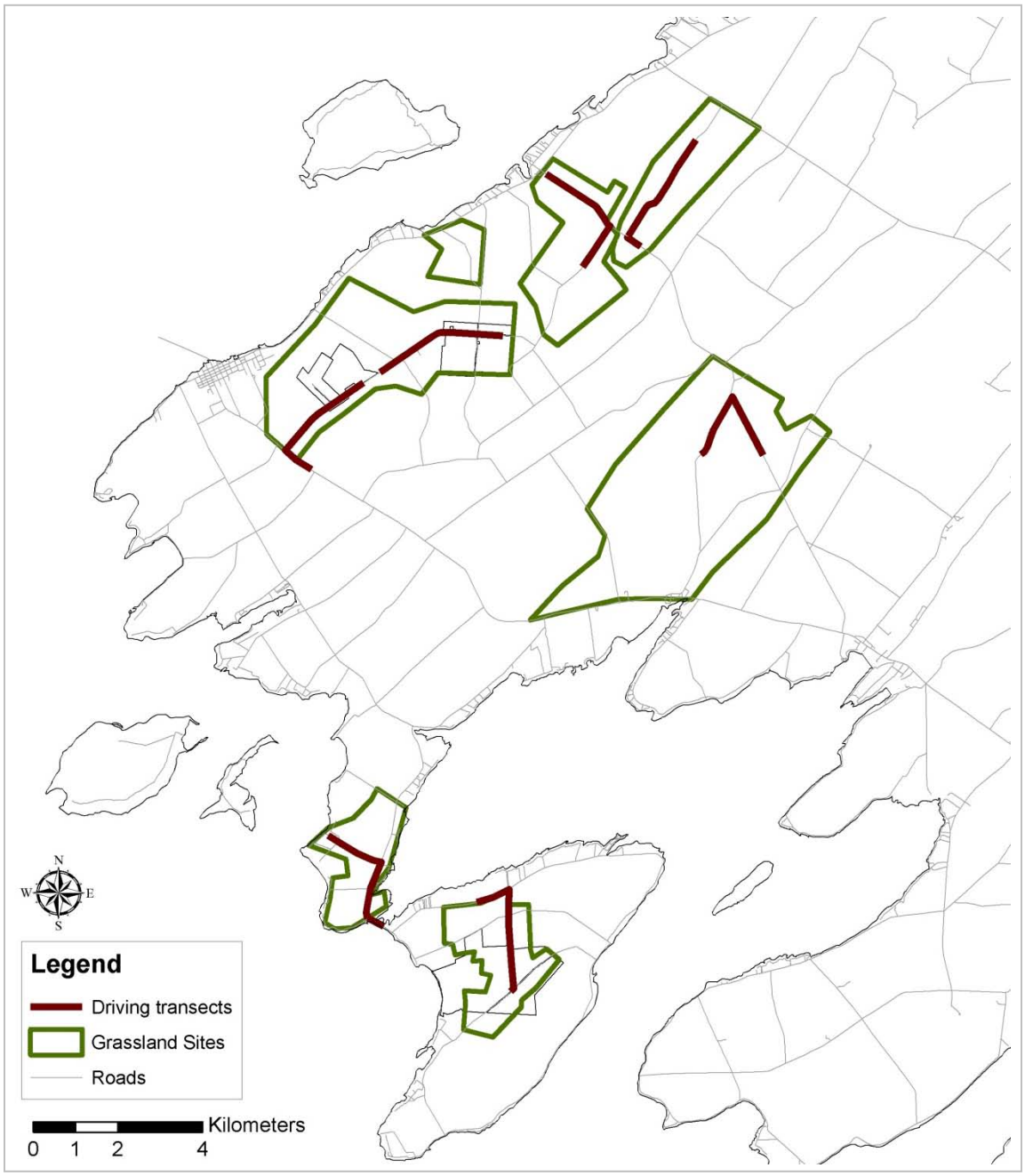


Figure 2. Short-eared owl and northern harrier driving transect survey locations in the Cape Vincent area, New York, from 15 December-1 March 2010.

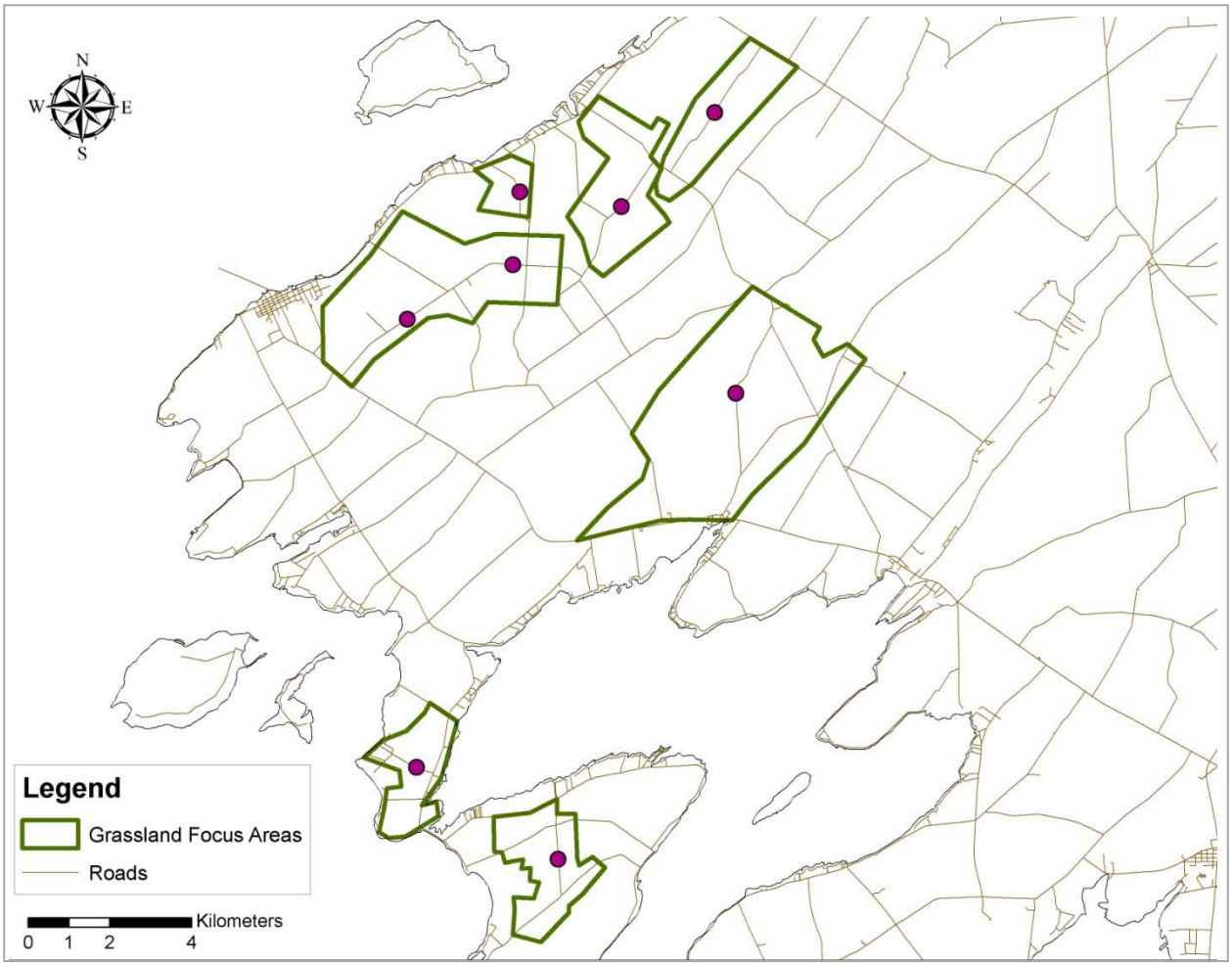


Figure 3. Short-eared owls and northern harrier stationary survey points in the Cape Vincent area, New York, from 15 December-1 March 2010.

Appendix 4

DU's 2010 Conservation Report

DUCKS UNLIMITED
GREAT LAKES / ATLANTIC
REGIONAL OFFICE

New York

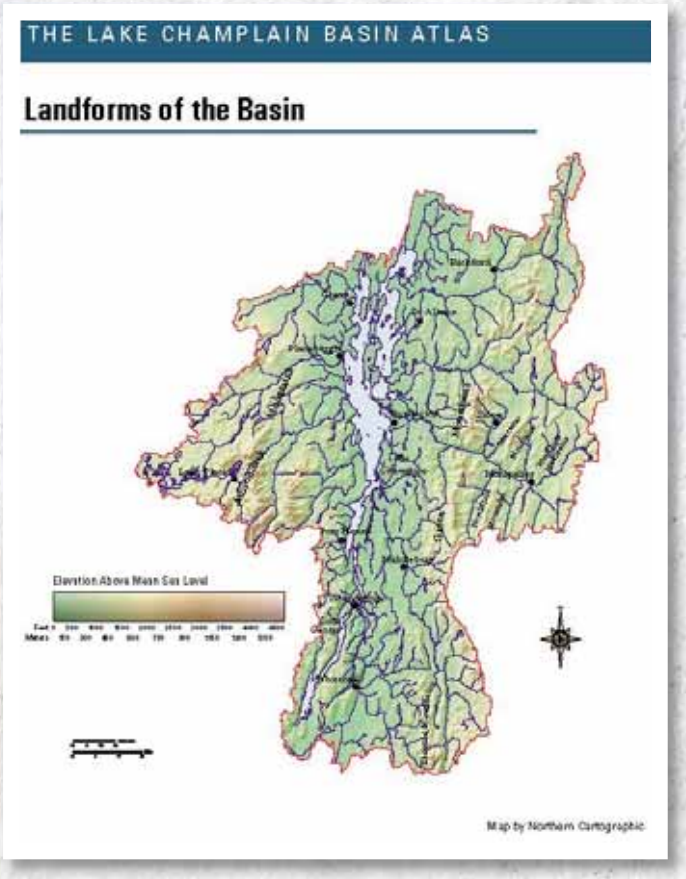
2010 Conservation Report | Great Lakes / Atlantic Regional Office

DU BEGINS NEW "WET BY CHOICE" INTIATIVE IN LAKE CHAMPLAIN BASIN

The Lake Champlain Basin encompasses over 8,200 square miles of forest and farmland between the Adirondack Mountains of New York and the Green Mountains of Vermont. This fertile valley supports some of the most diverse plant and animal communities in the entire Northeast and is widely recognized by numerous state, federal and conservation organizations for its natural resources value. The basin is also recognized as a Ducks Unlimited Level II priority under the International Conservation Plan.

Since the days of early settlement, over 35 percent of the basin's historic wetlands have been lost or converted to agriculture or other land uses, adversely affecting waterfowl and other species of fish and wildlife. Of equal concern is the decline of water quality in Lake Champlain, due largely to phosphorus and sediment in runoff from farm and urban non-point sources across the watershed.

The "Wet By Choice" initiative provides DU the opportunity to work in Vermont and New York with the National Resource Conservation Service (NRCS), US Fish and Wildlife Service (USFWS) and the State Departments of Fish and Wildlife and others to promote, fund, implement and monitor wetland restoration on private lands. "Wet by Choice," as the name implies, is a voluntary opportunity for landowners who wish to participate in a comprehensive wetland restoration program.



Work on the initiative began in Vermont in the fall of 2009 and using the Vermont side of the basin as a model, DU is developing a similar strategy for New York. DU will structure a restoration and protection effort that incorporates existing federal and state programs in Clinton, Essex, Warren and Washington Counties. DU will lead an effort in New York to identify and prioritize wetland restoration potential by developing a GIS mapping tool similar to a one used in Vermont to meet the goals for water quality and fish and wildlife habitats across the basin.

Lake Champlain Basin Atlas, Lake Champlain Basin Program

MONTEZUMA WETLANDS COMPLEX

NORTHERN MONTEZUMA NAWCA PHASE 4

The fun has just begun for the Ducks Unlimited engineers and biologists at Montezuma. 2009 marked the first year of the Northern Montezuma Wetlands project, an ambitious restoration, enhancement and protection undertaking funded in part by a North American Wetlands Conservation Act (NAWCA) grant. The goal is to restore and enhance 571 acres of habitat and acquire or protect another 575 acres of land. All of these sites will eventually fall under the ownership and management of the New York State Department of Environmental Conservation (NYSDEC).

DU engineers Warren Weirich and Gregg Bachman spent several weeks working in the muck to collect survey data and develop topographic maps of hundreds of acres of planned restoration. They are working closely with DU Regional Biologist Doug Gorby and NYSDEC Biologist Jim Eckler to design wetland restorations at five different locations within the Montezuma complex. Some of the sites will require construction of earthen berms and placement of water control structures to restore the heavily altered hydrology to the muck soils. Other sites will benefit from reshaping the topography of drained farm acreage to restore floodplain wetlands that are critical for flood storage, water quality, and waterfowl habitat. Construction is slated to begin in late 2010. Upon completion of the project, waterfowl, shorebirds, wading birds, and other fauna will have access to hundreds of acres of new habitat in a high-priority focus area for DU in New York. And because all the lands will be public, outdoor enthusiasts will have more recreational opportunities.

The Northern Montezuma NAWCA grant is the latest example of the importance of NAWCA funding to DU's mission. Without NAWCA, implementing projects of this scope would be far more difficult. Collaboration is what makes NAWCA and DU successful. Valuable partners like NYSDEC, The Nature Conservancy, New York Audubon, The Friends of Montezuma, Pheasants Forever, National Wild Turkey Federation, Vanderbilt Marsh Club, and DU members are providing match funding and expertise that make this project possible.

TSCHACHE POOL AT MONTEZUMA NWR

Tschache Pool encompasses roughly 1,100 acres within the Montezuma National Wildlife Refuge (NWR) and provides important migratory habitat for waterfowl in the spring and fall. In the decades since its construction, the berm forming the pool has been degraded by floodwaters from the Erie Canal and burrowing muskrats. After repairing the north end of the berm by modifying the existing structure and building up the berm, DU engineers turned their attention to the south end. Working in concert with Tom Jasikoff and Bill Stewart of Montezuma NWR, DU raised the elevation of the berm, designed more gradual side slopes, and incorporated features to deter muskrat damage. These improvements will provide better management capability of the unit and improved habitat conditions. Tschache Pool is open to controlled waterfowl hunting, so both waterfowl and waterfowlers will benefit.

DUCKS UNLIMITED MITIGATION ADDS HABITAT IN NEW YORK

Ducks Unlimited's wetland mitigation projects provide restoration and enhancement of wetlands in New York. Flood attenuation and storage, food chain support, breeding and migration habitat for migratory birds, habitat for amphibians and other wildlife, connectivity of habitat types, and water quality can all benefit from wetland mitigation by DU. Two important DU mitigation projects are located within the Northern Montezuma Wildlife Management Area (WMA) in the Seneca River Watershed. A management plan and agreement between the New York States Department of Environmental Conservation (NYSDEC) and DU were established to restore and protect this critical wetland habitat.

MORGAN ROAD

Ducks Unlimited was hired to provide compensatory mitigation and develop 16 acres of emergent marsh in Northern Montezuma WMA. This project will provide habitat, improve water quality, and reduce fragmentation of wetland habitats in the Montezuma Wetlands

Complex. By partnering with the NYSDEC, DU was able to restore high-quality wetlands at a location that will have ecological significance and provide public use on a state wildlife area.

Wetland construction began in late summer 2009 and will be completed in spring 2010. Once a wetland with muck soils, the site was ditched and drained decades ago for agriculture. Wetland hydrology is being restored by constructing a low berm at the site, which will be flooded in fall 2010 after wetland seeds have germinated and plants are established. DU staff will monitor the restored wetland for five years and the NYSDEC will provide management and permanent protection of the site.

SOUTH BUTLER

Ducks Unlimited restored a 20-acre site near South Butler, also within the Northern Montezuma WMA, as mitigation for impacts to forested wetlands elsewhere in the watershed. This wetland project restored forested and emergent wetlands at a site that was surrounded by existing wetlands. The site had been cleared, ditched and drained for farming in the early 1900's. DU designed the site with an emphasis on wetland plant diversity and hydrology to maximize the ecological value of the wetland. The restored wetland was reconnected with nearby Butler Creek and seeded with native plants. Vegetative response has been tremendous and waterfowl used the site steadily during the first year to feed on seed and invertebrates in the emergent wetland. Permanent protection and management will be provided by NYSDEC.

FORGE RIVER RESTORATION ON LONG ISLAND

Ducks Unlimited is partnering with the Waterways at Bay Pointe Homeowners Association (Waterways) in Suffolk County to restore and enhance 16 acres of salt marsh and nearshore habitats. These areas are important to waterfowl, especially wintering black ducks.

Waterways, a senior living community located north of Moriches Inlet along the Forge River, lies in the hamlet of Moriches in the Town of Brookhaven. Waterways has applied for project funding via a small NAWCA grant which, if approved, will be available in March 2010. The grant will be used to control invasive species, including Japanese knotweed and Phragmites, remediate eroded shoreline, and restore native vegetation to provide a shoreline buffer area and enhance wetlands along the river. Vegetative communities include high salt marsh, brackish tidal marsh, freshwater tidal marsh, and upland communities such as maritime shrubland.

The control of Phragmities along the shoreline of Forge River will enhance wetlands important to waterfowl, especially black ducks.

ST LAWRENCE VALLEY
ASHLAND GRASSLANDS

The St. Lawrence Valley is the prairie pothole region of the Northeast. A close-knit patchwork of small wetlands and large grasslands make this a very attractive area for breeding waterfowl. Ducks Unlimited works tirelessly to protect and restore wetlands across the entire valley, but we also work to maintain and protect the grasslands that provide nesting habitat for mallards, blue winged-teal, American black ducks, and Canada geese. At Ashland WMA in Jefferson County, DU is working creatively with several partners to restore 40 acres of native grasslands and enhance several hundred acres of managed grassland. This is an area where DU is also actively restoring wetland habitat by constructing two wetlands totaling over 80 acres.

Ducks Unlimited partnered with the USDA Natural Resource Conservation Service, Irene Mazzocchi of the New York State Department of Environmental Conservation, Jefferson County Soil and Water District, and the USFWS (United States Fish and Wildlife Service) St. Lawrence Valley Field Station to utilize USDA Wildlife Habitat Incentive Program (WHIP) funds to perform the restoration of the native grasses and to clear brush and manage the grasslands for nesting birds. Additionally, DU was the recipient of grant funds from the USFWS via the Great Lakes Fish and Wildlife Restoration Act to perform enhancement of several hundred acres of grasslands that have become choked by invasive species and scrub growth.

ST LAWRENCE VALLEY CONTINUED...

ST. LAWRENCE VALLEY NAWCA PHASE I

The landscape in the St. Lawrence Valley is home to several new marshes thanks to the completion of three wetland projects and the beginning of another, all part of the St. Lawrence Valley NAWCA (SLV NAWCA). The U.S. Fish and Wildlife Service, via the North American Wetlands Conservation Act (NAWCA), provided funding to Ducks Unlimited to restore wetlands in the western end of the St. Lawrence Valley, and 2009 marked the home stretch for projects under this grant. Restorations were completed near Clayton, Alexandria Bay, and on Grindstone Island, and groundbreaking took place on a fourth project at Ashland Wildlife Management Area (WMA).

Ashland WMA in Jefferson County is becoming a centerpiece for collaborative success in habitat restoration between Ducks Unlimited and the New York State Department of Environmental Conservation. Grassland (see related article in this report) and wetland restorations, past and ongoing, are juxtaposed in this setting, providing nesting and brood rearing habitat for breeding waterfowl. The latest addition to the mix is a 65 acre wetland slated for completion in 2010. This wetland lies in close proximity to a smaller wetland built by Ducks Unlimited's mitigation program in 2008. These wetlands are surrounded by hundreds of acres of managed grasslands and other existing wetlands.

Wetland restorations near Clayton, and on Grindstone Island, are examples of the great partnership between DU and the Thousand Island Land Trust (TILT). TILT, under the direction of Andrew Wood, not only seeks to conserve and protect lands in and around the St. Lawrence River, but also to improve the habitat conditions of the land it manages. DU and TILT have collaborated on wetland and grassland projects in the past and the latest wetland projects will provide additional acres in this priority area. These projects total more than 20 acres of restored wetlands, including potholes and shallow water marshes. Private lands restorations have always been an important part of DU's mission, and the range of projects completed under the SLV NAWCA are an example of the role these sites can play in a regional restoration effort.

FEMRF

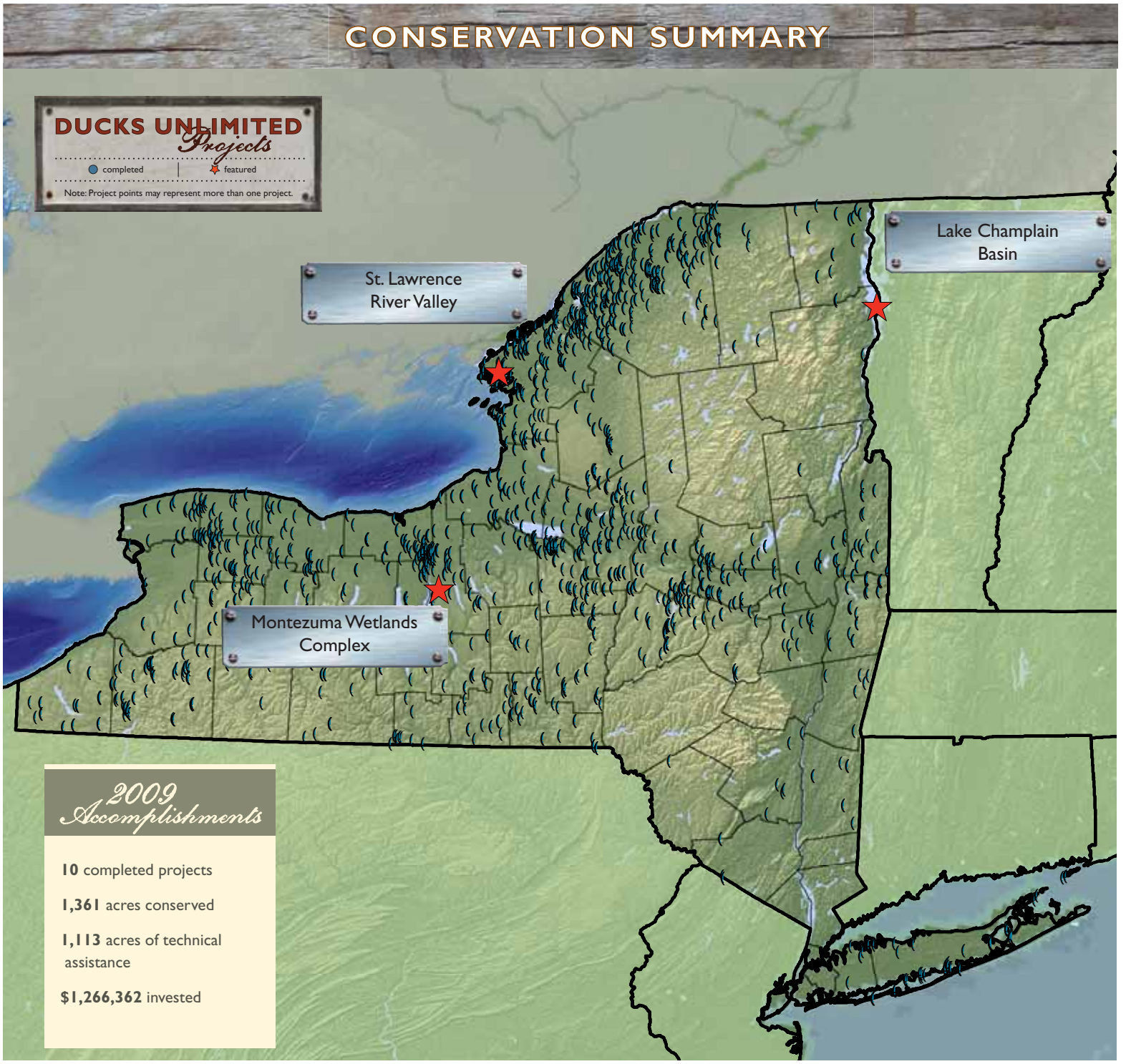
The Fish Enhancement, Mitigation, and Research Fund (FEMRF) project took a big step forward this year. This project is restoring diverse wetland habitats at French Creek WMA and other sites in Jefferson County under a partnership between Ducks Unlimited, U.S. Fish and Wildlife Service (USFWS) Partners Program, the State University of New York School College of Environmental Science and Forestry (SUNY-ESF), and New York State Department of Environmental Conservation (NYSDEC).

Water levels in Lake Ontario and the St. Lawrence River are regulated by The International Joint Commission via dams in the St. Lawrence Seaway to promote shipping, generate hydropower, and protect shoreline property owners. French Creek, like many coastal wetlands in the Lake Ontario basin, has seen declining habitat conditions and impaired wetland function as a result of the water level management. The result has been dense stands of cattail (Typha spp.) and degraded habitat quality along the shoreline and in rivers and tributaries. These impenetrable and homogeneous areas are poor habitat for waterfowl...and for fish. And fish is what FEMRF is targeting. By partnering with fisheries expert Dr. John Farrell of SUNY-ESF, DU is able to identify and design opportunities for habitat enhancement that benefit both fish and ducks by creating a good mix of open water and emergent plant cover.

One mechanism to perform this cattail enhancement is an amphibious excavator procured in 2008 by the USFWS Partners using FEMRF funds. The big step forward in 2009 was the addition of a supplemental power pack to the excavator that allows the machine to cut and disperse mud and mulched cattail at high efficiency. Under the direction of Carl Schwartz, USFWS Partners Biologists Steve Stroka and Eric Rozowski ran the new equipment through its paces at French Creek and created stretches of improved habitat in record time. DU biologist Doug Gorby and NYSDEC's Bill Gordon and Irene Mazzocchi are excited to see this work continue at French Creek and continue to other sites within the St. Lawrence Valley.

Slinging mud at French Creek with the amphibious excavator creates deeper water features that result in diverse plant communities and improved fish and waterfowl habitat.

CONSERVATION SUMMARY



2009 Accomplishments

10 completed projects

1,361 acres conserved

1,113 acres of technical assistance

$1,266,362 invested

MEET YOUR NEW YORK CONSERVATION STAFF

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DU WORKS FOR WATERFOWL THROUGH PUBLIC POLICY

A strong biological foundation has always been the cornerstone of Ducks Unlimited's conservation programs since the organization's founding in 1937. DU remains true to this foundation as it works to guide development of national policies that benefit waterfowl.

The North American Wetlands Conservation Act and legislation involving clean water, climate and energy are among the current priorities for the DU staff in D.C. The Farm Bill, although not set for renewal until 2012, also remains on DU's radar because Farm Bill programs like Conservation Reserve Program and Wetlands Reserve Program have significant implications for waterfowl habitats.

The Clean Water Restoration Act passed the Senate Environment and Public Works committee in 2009. This was a positive move toward reinstating protections for wetlands important to breeding ducks and small streams connected to many of the nation's drinking water resources. Progress on clean water legislation stalled in the House, but DU remains poised to work with House leadership to ensure waterfowl interests are considered in future bills.

At the end of 2009, a bill that will enhance the power of NAWCA unanimously passed the House and the Senate Environment and Public Works Committee. It will go to the Senate floor for a vote sometime in 2010. The bill would allow increased investment from Canadian resources to fulfill the requirement for private funds to match the federal contribution.

To receive DU's latest policy news go to WWW.DUCKS.ORG/CIB and subscribe to the Conservation Issues Briefing.

Wetlands for Tomorrow

North America's Vanishing Wetlands: Facing the Challenge

Poets write about it. Conservationists strive to continue it. Sportsmen dream about it. The migration of North America's waterfowl and other birds is one of nature's grandest and most anticipated events.

Wetlands make this migration possible. Wetlands also provide the foundation for North America's water supply. We rely on them for clean and abundant water, flood protection and recreation. Wetlands are vital to us all, yet every 10 minutes another acre of wetlands is drained.

Ducks Unlimited: Answering the Challenge

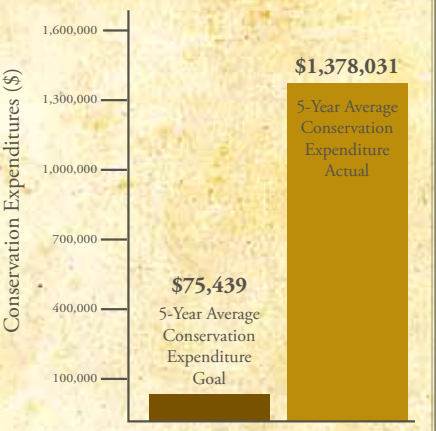
To answer the challenge to save North America's wetlands, grasslands and waterfowl, Ducks Unlimited has embarked on the *Wetlands for Tomorrow* campaign, an ambitious continental effort to raise at least $1.7 billion for wetland habitat conservation.

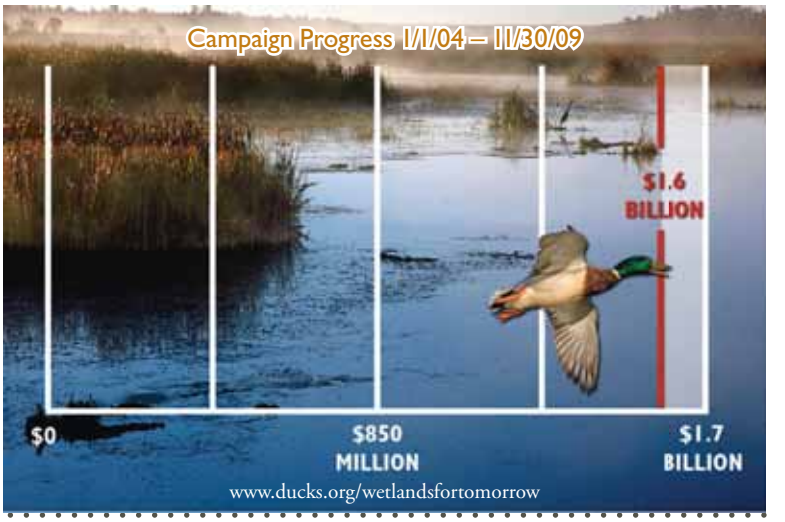
With a proven track record of partnering with the private sector, government and other conservation organizations for nearly 70 years, Ducks Unlimited has restored and conserved over 12 million acres of crucial habitat that benefits waterfowl, other wildlife and people.

Please join us to learn more about *Wetlands for Tomorrow* and the initiatives to conserve North America's critical wetlands.

DU New York Grassroots & Conservation: 2004 - 2008

The minimum conservation goal for each state is to spend the equivalent of 7.5% of total grassroots income raised in that state. This is based on a five-year average.





IS THE RECOVERY SUSTAINABLE?

Jim Ringelman, *Director of Conservation Programs at the Great Plains Regional Office*

No, not that recovery. The other recovery. The duck recovery.

A record setting snowfall across much of the U.S. prairie, coupled with an abnormally wet summer, filled wetlands to the brim. It seemed like every pothole was home to one or more breeding duck pairs. Let the good times roll.

But will they roll on forever? Ominously, we are still poised to lose 1.66 million acres of grassland in the Prairie Pothole Region when Conservation Reserve Program (CRP) contracts expire in 2012, and those potholes that attracted ducks were a real irritant to farmers attempting to plant or harvest their crops. It's ironic that the most favorable conditions for ducks can lead to a backlash against the very resources that create duck prosperity.

The great news is that we are making real progress. Since our Rescue the Duck Factory campaign began, DU members have contributed $3.6 million to secure 68,000 acres of grasslands and wetlands. That's a remarkable achievement.

As farmers are pinched with smaller profit margins, one response is to put new land into production – often at the expense of native prairie or CRP. At DU, we are working hard to offer alternative financial solutions, like easements and farm bill conservation programs. And thanks to a new partnership with Bayer CropScience, when land is destined to grow crops, we are well positioned to promote winter wheat as a duck-friendly alternative.

So is the recovery sustainable? The answer is "yes," as long as we have members like you!

North America's most important waterfowl breeding habitat is being plowed under on a massive scale. Surging global demands for food, federal mandates for corn-based ethanol production and the new Farm Bill are encouraging cultivation of every available acre.

Act Now To Help DU Save Vital Prairie Breeding Habitats

The "Rescue the Duck Factory" campaign has become a priority for Ducks Unlimited because of new pressures on landowners within the Prairie Pothole Region (PPR). The funds raised through this campaign will be directed toward perpetual land easements on native grasslands in the PPR, also known as the "duck factory."

The Opportunity is Now

But we are making a difference thanks to supporters like you. So far, we've rescued over 67,000 acres, but more help is needed. At an average per acre cost of $360, your contribution to this campaign will allow DU to purchase easements in the Prairie Pothole Region that will permanently protect this vital habitat for future generations.

The Goal

Our vision is wetlands sufficient to fill the skies with waterfowl today, tomorrow and forever. With your contribution we can continue to work toward that goal.

This prairie acreage is vital to North American waterfowl production and it's crucial that we act now.

The decisions we make in the duck factory right now will directly affect waterfowl populations and our waterfowl hunting heritage for future generations.

www.ducks.org/support/rescueduckfactory

ACUB – PRESERVING GRASSLANDS ONE FARM AT A TIME

Agricultural grasslands in the St. Lawrence Valley have long provided the foundation for healthy breeding populations of waterfowl and other resident and migratory bird species. This area has a rich history of dairy farming, and vast expanses of pasture and hay guaranteed ample nesting habitat. Recent trends in land use within the valley are threatening the extensive grasslands and the species that rely on them. A difficult economic environment for livestock farmers has led to idle farms, and the pastures that supported grassland nesting birds are transitioning into scrub/shrub habitat. Conversely, one place where the economy has been strong is around Ft. Drum, home to the U.S. Army's 10th Mountain Division. As the number of soldiers deployed overseas from Ft. Drum grows, so does the infrastructure surrounding the base. Shopping and housing building projects continue to increase, encroaching on the base and transforming farms on the base perimeter from grasslands to high-density development.

The Army Compatible Use Buffer Program (ACUB) is a Department of Defense (DOD) program that seeks to protect agricultural and natural lands surrounding the base at critical locations so the base may continue to train effectively without adversely impacting neighbors. Ducks Unlimited and the Army entered into an agreement to have DU serve as the primary partner on this program at Fort Drum, and the program is beginning to pay dividends. Using DOD funds, DU has purchased one easement and is in negotiations on several more that would protect agricultural acreage on the north side of the base. These lands include grasslands, small dairy farms, riparian corridors, forested wetlands, and wooded uplands.

This program is gaining interest from small farmers and conservationists in Jefferson, Lewis, and St. Lawrence counties, and the number of landowners interested in placing conservation easements on their lands continues to grow. DU is working closely with the Tug Hill Tomorrow Land Trust to secure the easements and provide monitoring of the protected parcels in perpetuity.

NEW YORK CONSERVATIONIST OF THE YEAR: TOM HUMBERSTONE

The streams and lakes of central New York have stirred the soul of more than one young person and Tom Humberstone is no exception. Born and raised in Syracuse, he spent summers fishing at Black Lake. His interest in hunting and fishing grew into a passion; in 1964 Tom and his father built a cottage at Black Lake.

Tom and Betsey Humberstone

In his early teens, his interest and involvement in waterfowling and "everything ducks" led him to learn the skills required to make his own gunning blocks. The birds started in styrofoam – baked in the kitchen oven– and progressed to cork and wood. Summers on Black Lake with his parents and brothers fostered a love of nature and family, and the passion continued with a new generation when Tom took his sons with him on fishing and hunting trips. As his sons grew, Tom taught them the importance of being responsible caregivers to the environment as they learned to hunt and fish under his careful tutelage. The future sportsmen should always have the same advantages as previous generations.

Tom served as President of the Central New York Waterfowlers Association with honor and distinction. Active in Ducks Unlimited since 1976, Tom helped form the Skaneateles Chapter twenty-nine years ago and served as NYS Chairman from 2001-2003. Ducks Unlimited is honored to have Tom and Betsey Humberstone as Life Sponsors, further cementing the family's commitment to the preservation of wetlands. In 1995 Tom was honored with the NYS Outdoorsman of the Year Award (inducted into the NYS Outdoorsman Hall of Fame). Over the years Tom has continued to hone his skills for making waterfowl decoys. Through his involvement with Ducks Unlimited and other conservation groups and his participation in waterfowl art shows, he and his wife have met people from all over the country who share their passion for the environment, conservation and preservation, and share their view that stewardship of the resource is a responsibility shared by all.

"The fishermen and hunters have always been conservationists because they are the people who protect the environment and pave the way for all those who follow." This statement sums up the years of beliefs and practice that define Tom's fierce dedication to all things wild and beautiful. On behalf of the Conservation staff of the Great Lakes Atlantic Regional Office, congratulations to Tom and thanks for all he has done to support DU's mission in the state of New York!

Ducks Unlimited conserves, restores and manages **wetlands** and associated habitats for North America's waterfowl. These habitats also **benefit other wildlife and people.**

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