

## COMPATIBILITY DETERMINATION

**Use:** Public Hunting of Waterfowl

**Refuge Name:** Stewart B. McKinney NWR, Great Meadows Unit

**Establishing and Acquisition Authorities:** Stewart B. McKinney National Wildlife Refuge (NWR), formerly the Connecticut Coastal NWR, was authorized for redesignation by an Act of Congress under Title II of the Wetlands Loan Extension Act (Public Law 98-548) on October 26, 1984. The legislation designated four lands, totaling 151 acres, for initial acquisition including Milford Point, Chimon, Sheffield, and Falkner Islands. The Refuge was initially established on February 25, 1985 with the acceptance of the deed to Chimon Island by the U.S. Fish and Wildlife Service from the Nature Conservancy of Connecticut. On May 13, 1987 (P.L. 100-38) the Refuge was redesignated as the Stewart B. McKinney NWR in honor of the Senator McKinney's efforts in its establishment.

The Connecticut Coastal Protection Act authorized the expansion of the Refuge on October 19, 1990 by incorporating Salt Meadow NWR as a Unit of Stewart B. McKinney NWR and permitting future land acquisitions (P.L. 101-443, H.R. 3468). The Salt Meadow NWR was established in 1971 under authority of the Migratory Bird Conservation Act of 1934, as amended.

The Refuge currently consists of the eight Units. The Units are listed with the initial date of acquisition by the U.S. Fish and Wildlife Service in parenthesis: Salt Meadow (1971), Falkner Island (1984), Sheffield Island (1984), Milford Point (1985), Chimon Island (1985), Great Meadows (1994), Goose Island (1991), and Outer Island (1995).

**Refuge Purpose(s):** The purposes ... are - (1) to enhance the populations of herons, egrets, terns, and other shore and wading birds within the refuge; (2) to encourage natural diversity of fish and wildlife species within the refuge; (3) to provide for the conservation and management of all fish and wildlife, within the refuge; (4) to fulfill the international treaty obligations of the United States respecting fish and wildlife; and (5) to provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation. 98 Stat. 2774, dated Oct. 26, 1984. ...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...16 U.S.C. 99 742f(a)(4)...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 99 742f(b)(1) (Fish and Wildlife Act of 1956) (Salt Meadow) ... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds. 16 U.S.C. 99 715d (Migratory Bird Conservation Act)

**National Wildlife Refuge System Mission:**

The mission of the National Wildlife Refuge System is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

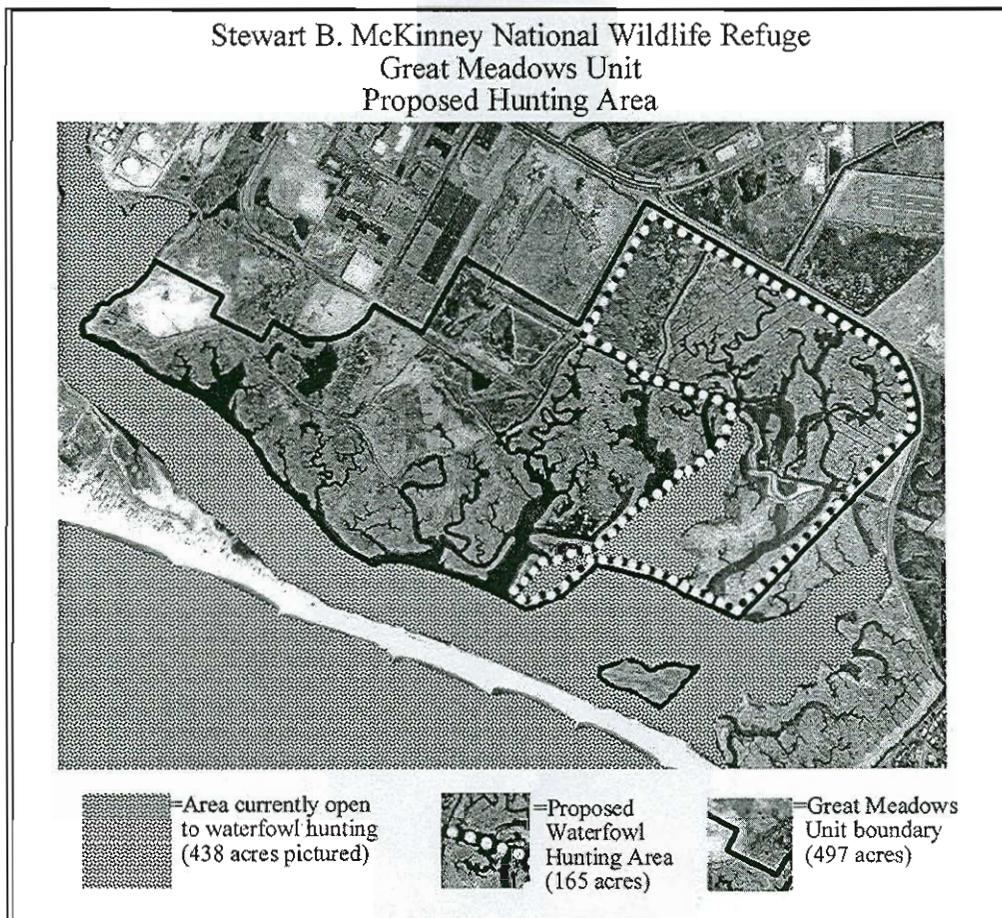
**Description of Use:**

**(a) What is the use? Is the use a priority public use?**

The use is public hunting of waterfowl, which is a priority public use of the Refuge System.

**(b) Where would the use be conducted?**

The designated area, as indicated in Figure 1, is approximately 165 acres of salt marsh dominated by smooth cordgrass (*Spartina alterniflora*) and saltmeadow cordgrass (*Spartina patens*), and finely dissected by tidal creeks and channels (USFWS 1991).



**Figure 1.** Proposed hunting area at the Stewart B. McKinney National Wildlife Refuge Great Meadows Unit, Stratford, CT.

**c) When would the use be conducted?**

The proposed use is to provide public hunting of waterfowl (ducks, coots, geese and swans) by foot or by boat in designated areas within the Great Meadows Unit according to State and Federal regulations. Hunting would take place on Tuesdays, Wednesdays, and Saturdays within the open waterfowl seasons established by the Connecticut Department of Environmental Protection Wildlife Division.

**(d) How would the use be conducted?**

Hunters would be required to obtain a Special Use Permit from the Service. The Refuge will issue permits to hunt the designated hunting area of the Great Meadows Unit for the entire State waterfowl season. Hunter numbers will be limited according to state regulations for party size and distance between parties. In the future, hunter numbers could be limited with a permit system where permits are assigned to designated blinds or areas of the marsh to ensure a quality hunting experience or to meet Refuge management goals.

**(e) Why is this use being proposed?**

The Great Meadows Unit is located in the town of Stratford, Fairfield County, Connecticut. The National Wildlife Refuge System Improvement Act of 1997 states that hunting is a priority wildlife-dependent recreational use on national wildlife refuges when compatible with the refuge's purpose and the mission of the Refuge System.

The hunting program will potentially provide 990 hunter-days of wildlife-oriented recreation per year based on a Connecticut resident average of 7.4 migratory bird hunting days/hunter/year (US DOI 1996). Connecticut regulations require hunting parties to contain no more than six individuals with a distance of 100 yards between parties (CT DEP 2002). According to DEP regulations, the 165 acre designated waterfowl hunting area at Great Meadows Unit will support a maximum of 22 parties of six individuals per day if parties hunt each day in its entirety. See the Environmental Assessment for Waterfowl Hunting at the Great Meadows Unit (Stewart B. McKinney NWR 2002 unpublished report) for more anticipated impacts.

**Availability of Resources:** Stewart B. McKinney National Wildlife Refuge received \$543,350 to fund the entire refuge program in Fiscal Year 2002. Of this total, \$210,902 was minimum level funding to pay for staff salaries and other fixed costs. A portion of staff salaries is devoted to the salary of a maintenance worker. The refuge received a permanent \$14,051 (0.5 FTE) as a Refuge Operations and Needs System (RONS) budget increase in Fiscal Year 2002 to assist with all programs on the Refuge including the improvement of existing facilities and public access. As public use projects currently in the planning or construction phase come to completion, additional staff funding will be needed for the maintenance of these facilities. Additional resources needed to conduct the annual waterfowl hunting program will come from donated funds and/or labor, such as the Friends of Stratford-Great Meadows and Milford Point Units, Connecticut Department of Environmental Protection, and Connecticut Waterfowlers who have already voiced their support.

The annual funding and manpower requirements for the waterfowl hunting program are estimated as follows based on current staff and the 2002 Federal Pay Table\*:

\*Hourly Wages: GS 12/4=28.61, GS 9=16.51, GS 7=13.49

Item	Staff Days	Cost	Grade	Hours
Planning	3	\$ 493.04	GS 12/4	8
			GS 9	16
Public Inquiries/print costs	4	\$ 600.96	GS 12/4	8
			GS 9	16
			GS 7	8
Operations	8	\$ 1,056.64	GS 9	48
Law Enforcement	15	\$ 3,433.20	GS 12	160
<b>Grand Total</b>	<b>20</b>	<b>\$5,583.84</b>		

One time costs associated with the implementation of the waterfowl hunting program revisions described in this plan are estimated as follows based on current staff and the 2002 Federal Pay Table\*:

Item	Staff Days	Equipment	Staff Cost	Grade	Hours
Planning	5		\$ 902.40	GS 12/4	20
				GS 9	20
Public Inquiries	3		\$ 493.04	GS 12/4	8
				GS 9	16
Signs and Posting	6		\$ 792.48	GS 9	48
<b>Total</b>	<b>14</b>	<b>\$ 2,716.00</b>	<b>\$ 2,187.92</b>		
<b>Grand Total</b>	<b>14</b>	<b>\$ 4,903.92</b>			

The funding received and the expected increase to the annual base maintenance and operating funding is adequate to ensure that waterfowl hunting will be compatible with refuge purposes, maintain public protection and high standards of quality, and eliminate or mitigate potential conflicts.

**Anticipated Impacts of the Use(s):** The refuge is located within the Atlantic Flyway Black Duck Joint Venture area which has a goal of increasing the black duck population. The Great Meadows Unit is identified in Connecticut as key black duck feeding and wintering areas (USFWS 1991) as well as nesting habitat for black ducks, mallards, gadwalls, green-winged teal, and blue-winged teal (King's Mark 1987 and USFWS 1989). Surveys conducted during the winter of 2001-2002 indicated use by waterfowl to be distributed throughout the channels and creeks of the Unit. The Refuge will continue to monitor use of areas within the Great Meadows Unit by waterfowl to identify important roosting and breeding sites over time. Refuge surveyors in previous years recorded waterfowl sightings in sum totals, not allowing for the delineation of key feeding, roosting, and nesting areas. Most of the refuge's breeding and juvenile waterfowl have dispersed or migrated by the opening of the waterfowl hunting season. The hunting of waterfowl, including black ducks, in designated hunting areas within the federally and state prescribed seasons and bag limits should have little or no affect on the refuge's waterfowl breeding population or national population.

Heusmann (1974) concluded that "During the past 100 years, the status of the mallard (*Anas platyrhynchos*) in the Northeast has changed from that of rare migrant to major game bird..... The close relationship between mallards and black ducks (*Anas rubripes*) is leading to increasing hybridization as the species come in contact, particularly in inland park situations. The black duck possesses few traits to prevent hybridization, and its continued existence as a distinct species is threatened." Ankney, et. al. (1987) suggest that increased mallards in an area cause a decline in black ducks through introgressive hybridization and/or competitive exclusion. Pair formation in mallards and black ducks may begin as early as August and continues on the wintering grounds (Bellrose, 1980). Black duck and mallard hybrids have been recorded during bird surveys at the Great Meadows Unit during the fall, winter, and spring seasons. Removal of drake mallards during hunting season in areas where black ducks and mallards interact may decrease hybridization.

Bergan and Smith (1993) concluded that early season body condition and extended sub-freezing weather appear to impact mallard survival most. Burnham et. al. (1984) found evidence of a highly compensatory mortality process for adult male mallards. Hepp et. al. (1986) found that mallards in poor condition at the time of banding had a greater probability of recovery during the hunting season. In general, this was true for all age and sex classes; however, the strongest relationship occurred for adult males. Hunting within the current seasons and bag limits at Stewart B. McKinney NWR is unlikely to adversely affect mallard population.

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Morton et. al. (1989) suggested that human disturbance of wintering black ducks impairs their physiological conditions, thereby reducing winter survival and/or nutrient reserves carried to the breeding grounds. The Great Meadows Unit lies in the South Zone, where the Connecticut early season for ducks, mergansers, and coots is open from October 9 to October 16, and the late season from November 26 to January 25. Although the season is open during the coldest months of the year on average, the Connecticut shoreline is usually ten degrees warmer than northern areas of the state. Smith and Reynolds (1992) concluded that, under certain conditions,

restrictive regulations can successfully increase survival rates. The Refuge will prohibit hunting at the Great Meadows Unit during periods of extreme or severe weather to help ensure the survival of wintering waterfowl. Closures notices will be posted at the Great Meadows Unit, hunters with Special Use Permits will be notified directly, and announcements may be made in local newspapers. Hunting of black ducks on designated areas of the refuge within the federally and state prescribed seasons and bag limits should not adversely affect the local or waterfowl populations.

Non-migratory Canada Goose populations have been steadily increasing throughout the Atlantic Flyway. Wintering numbers of Canada geese in New England have increased from 6,000 during 1948-1950 to 20,000-30,000 in 1993 (Serie 1993 as cited by J. Hestbeck, National Biological Service, in "Canada Geese in the Atlantic Flyway" at the website <http://biology.usgs.gov/s+t/frame/b012.htm>). The Atlantic Flyway resident Canada Goose population was estimated in the spring of 2002 to be 966,000 (+ or - 170,400) (USFWS 2002a). Large populations of non-migratory geese have the potential to become nuisances in city parks, industrial parks, and water supply reservoirs by reducing the aesthetic value of property (Conover 1985) and increasing the risk of elevated fecal coliform bacteria levels (Manney et al 1994). Significant threats to aviation by Canada geese at airports include aircraft strikes, costly damages, and loss of human life (USFWS 2002b). Surveys conducted by the Connecticut Department of Environmental Protection during the 2002 breeding season estimated 10,456 pairs of Canada geese in the state. Groups of several hundred Canada geese have been sighted in the Great Meadows vicinity throughout the fall and winter months, while **only small groups of individuals are present in the summer (20-50)**. Canada goose hunting at the Great Meadows Unit area will help reduce the risk of goose and aircraft collisions at the nearby Sikorsky Memorial Airport.

Green-winged and Blue-winged teal may be harvested on the refuge and surrounding areas when open season coincides with the migration of this species. Changes in the Atlantic Flyway harvest frameworks requiring later season openings have resulted in decreased harvest opportunities for green-winged teal. Teal have historically nested at Great Meadows, although 2002 breeding surveys conducted by the Connecticut Department of Environmental Protection (CT DEP) indicated breeding by blue-winged teal in the state is rare (CT DEP 2002 website <http://dep.state.ct.us/burnatr/wildlife/special/wfsurv02.htm>). Teal are most commonly present during migration, and are occasional winter visitors. Hunting on the refuge within the federally and state prescribed seasons and bag limits should not adversely affect local or national populations.

Other species which use the refuge include shorebirds, wading birds, osprey, piping plover, and northern harrier. Klein (1993) observed that frequent approach of wading birds may have caused some species to avoid areas and that while some great egrets and green-backed herons tolerated human presence others did not. Most shorebirds and wading birds have commenced or completed migration by the opening of the waterfowl hunting season.

Holmes et. al. (1993) found that several species of raptors are more likely to flush when approached on foot than by vehicles and that birds may become habituated to vehicles. The known osprey nests on Stewart B. McKinney NWR are located outside the hunting area. Osprey typically migrate from the area by late fall. In recent years, the Connecticut waterfowl seasons have opened after this date.

The northern harrier is listed by the Connecticut DEP as endangered, and the Great Meadows Unit contains the only documented nesting in the state. The northern harrier is also listed as a Species of Special Management Concern (USFWS 1995). Should the harrier select the designated waterfowl hunting area or any other areas open to the public use, the site will be closed to all public use activities until nesting is complete and harriers no longer frequent the area.

**Public Review and Comment:** The US Fish and Wildlife Service hosted a public meeting on January 6, 2005 from 5:00pm to 9:00pm to gather comments regarding the proposal to allow waterfowl hunting at the Great Meadows Unit of Stewart B. McKinney National Wildlife Refuge (Refuge) in Stratford, Connecticut. A News Release for the scooping meeting was sent on January 20 to the CT Post, The Hour, the Stratford Bard, and the New Haven. Attendance at the January 6, 2005 meeting was at least 34 individuals; 31 people gave their names on an optional sign-in sheet, 26 people provided written comments, and 2 news media attended the event. According to the written comments, 4 people were in support of Alternative I (no hunting), 6 supported Alternative II (hunting in designated area only), and 13 supported Alternative III (hunting throughout the Great Meadows Unit). Four others supported hunting in general. Based on the comments received, the number of waterfowl hunt days was reduced from 6 to 3 days per week during the state designated season and refuge-specific regulations were changed accordingly.

A News Release announcing the availability of the Compatibility Determination and Environmental Assessment was sent to Stratford newspapers, including the New Haven Register, the Stratford Bard, the Connecticut Post, and The Hour, on March 16, 2005. This News Release announced a 15-day comment period for the documents, which began on March 18, 2005. In addition to announcement, articles appeared in the New Haven Register (03/22/05), the Stratford Star, (03/24/05), and The CT Post (03/27/05). Although 17 copies of both the Environmental Assessment and Compatibility Determination were sent to the public, most of comments received were not specific to the documents, but to waterfowl hunting overall. Comments did not reference the Alternatives discussed in the Environmental Assessment and were either for or against hunting.

The Refuge received a total of 29 comments and 2 inquiries during the comment period, and 4 comments after the comment period ended. Of the comments received during the comment period, 26 voiced opposition to hunting and 3 supported hunting. Individuals against waterfowl hunting at the Great Meadows Unit sited multiple concerns, including the belief that hunting is not appropriate on wildlife refuges (11), hunting will jeopardize the safety of visitors, cars, and neighbors (14), hunting will create noise pollution (2), law enforcement will not be adequate (5),

and concerns of declining waterfowl populations or impact on resources (6). No changes were made to the draft Compatibility Determination and Environmental Assessment (EA) after this public comment period because the documents effectively address the concerns of the public.

*Specific Responses to Public Comments*

Hunting is a priority public use as defined by the Refuge Improvement Act of 1997 (pages 3, 4, and 6 of the EA). Waterfowl populations are adequately regulated by the U.S. Fish and Wildlife Service on the Flyway level (page 26 of the EA). State regulations adequately protect for public safety near the designated hunt area, including traffic on Lordship Boulevard and neighborhood along Oak Bluff Avenue (page 27 and Appendix E of the EA). Connecticut law prohibits “hunting or shooting across the traveled portion of any public roadway” and “shooting toward any person, building, or domestic animal when within range.” Upon opening the designated waterfowl hunting area to the public, the Refuge will make the commitment to have law enforcement officers periodically patrol the Great Meadows Unit to ensure safety of the public and that regulations are not violated. Additional assistance may be provided the Connecticut Department of Environmental Protection Conservation Officers. Hunting currently takes place surrounding the designated hunting area and no conflicts between hunting and the nearby Sikorsky Airport have been identified by the airport or the State of Connecticut. The preferred Alternative II limits the number of hunt days to Tuesdays, Wednesdays, and Saturdays of the state designated season to provide visitors who are opposed to hunting with hunt-free visitation days, to reduce the potential for noise disturbance to visitors and wildlife, and to provide additional period of rest for waterfowl and resident wildlife (pages 27 and 28 of the EA). Hunting restrictions as described in Alternative II and presented in this Compatibility Determination ensure the compatibility of hunting with wildlife management and other priority public uses.

**Determination: (check one below):**

This use is compatible X

This use is not compatible

**The following stipulations are required to ensure compatibility:** The hunting program will be reviewed annually to ensure compatibility with Service and refuge purposes and compliance with federal and state waterfowl hunting regulations. Disturbance of rare flora and other wildlife will be monitored and changes will be made in the hunt program as necessary to minimize disturbance. Examples of species to be monitored include migratory birds, the state endangered northern harrier and marsh pink.

**Justification:** The Supplemental Environmental Impact Statement (SEIS) for Waterfowl Hunting in the United States (1988) concluded that waterfowl hunting was an acceptable use of a renewable natural resource and created guidelines for establishment of seasons and bag limits. Waterfowl seasons and bag limits are revised each year based on winter and breeding ground surveys to ensure the maintenance of viable waterfowl populations. Waterfowl hunting is

recognized by the Service as a traditional form of wildlife related outdoor recreation (a primary purpose for which the refuge was established). Waterfowl hunting by boat is currently permitted by the State of Connecticut in the navigable waterways adjacent to the Great Meadows Unit. The Refuge proposes to open 165 acres of marsh to waterfowl hunting by foot or boat on Tuesdays, Wednesdays, and Saturdays throughout the state designated waterfowl hunting season. Opening the Stewart B. McKinney NWR, Great Meadows Unit to public Waterfowl hunting will not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the Refuge was established.

Project Leader: Andrew C. French 4-5-5  
(Signature and Date)

Concurrence - Regional Chief: Anthony D. Lopez 4-7-2005  
(Signature and Date)

Mandatory 15 year Re-evaluation Date: April 7, 2020

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