

REVIEW AND APPROVALS

POTOMAC RIVER NATIONAL WILDLIFE REFUGE COMPLEX

ELIZABETH HARTWELL MASON NECK NATIONAL WILDLIFE REFUGE

Lorton, Virginia

OCCOQUAN BAY NATIONAL WILDLIFE REFUGE

Woodbridge, Virginia

FEATHERSTONE NATIONAL WILDLIFE REFUGE

Woodbridge, Virginia

ANNUAL NARRATIVE REPORT

Fiscal Years 2005 – 2006

Refuge Manager Date

Refuge Supervisor – South Review Date

Regional Office Approval Date

POTOMAC RIVER NATIONAL WILDLIFE REFUGE COMPLEX

Woodbridge, Virginia

INTRODUCTION

In 1998, Elizabeth Hartwell Mason Neck National Wildlife Refuge, Occoquan Bay National Wildlife Refuge, and Featherstone National Wildlife Refuge, were reorganized into the Potomac River National Wildlife Refuge Complex. Reasons for the reorganization were the realization that Occoquan Bay NWR (National Wildlife Refuge) rivaled Elizabeth Hartwell Mason Neck NWR in complexity and to better apportion staff and resources to the needs of the three refuges. All three refuges border Occoquan Bay at the junction of the Fairfax County and Prince William County. Elizabeth Hartwell Mason Neck NWR (on the northeast side of the bay) is the oldest refuge, being established in 1969 and the largest at 2,227 acres. As the first national wildlife refuge specifically established under the Endangered Species Act for bald eagles, its focus is on forest, marsh, and riverine habitat important to the bald eagle. On the southwest side of Occoquan Bay is Featherstone NWR, 325 acres of marsh and riverine habitat important to both waterfowl and eagles. Occoquan Bay NWR is on the west edge of the bay between the other two refuges and is the most recently established of the three. It was established in 1998 as a combination of land previously acquired as Marumsco NWR and recently acquired military surplus lands to form the new 640 acre refuge. Its primary values are the extensive grasslands interspersed with marshes and early successional shrub and forest areas with value to neotropical migrants and grassland dependent species.

The office for the complex is located in Woodbridge, Virginia, about 9 miles from Elizabeth Hartwell Mason Neck and a mile from Occoquan Bay and Featherstone Refuges. The office is a store front managed rental space in a small strip mall.



ELIZABETH HARTWELL MASON NECK NATIONAL WILDLIFE REFUGE
Mason Neck, Virginia

INTRODUCTION

Elizabeth Hartwell Mason Neck National Wildlife Refuge is located in Virginia, 18 miles south of Washington, D.C. Nestled on an 8,000 acre boot-shaped peninsula jutting out into the Potomac River, the refuge is dominated by mixed hardwood and pine forests, high bluffs, and about 300 acres of freshwater marshes. From the initial acquisition of 845 acres in 1969, Mason Neck has grown to 2,277 acres, including 7789 acres leased in 1982 from the Northern Virginia Regional Park Authority. Until 1974, the Mason Neck National Wildlife Refuge was a subunit of Blackwater National Wildlife Refuge, based out of Cambridge, Maryland. Mason Neck then became an independent unit with a manager and two subunits of its own, Featherstone NWR and Marumsco NWR (which later became Occoquan Bay NWR).

The refuge was established in 1969 as the Nation's first bald eagle refuge using funds provided under the Endangered Species Act. Eagles nested and wintered on the peninsula as far back as colonial times but in the 1950's and 1960's, succumbed to development and pesticides. With greater awareness, better protection nationally and regionally of the birds and their habitat, and reduction in pollution, the eagle population has been making a recovery. In 1999, there were 3 eagle nest sites on the refuge, one on the adjacent state park, one on the adjacent Gunston Hall Plantation, and two on private lands elsewhere on the peninsula. In an expanding ring, there are at least 3 more nests within a five mile radius on the Virginia side of the Potomac River and reports of several more nests on neighboring Maryland lands.

Although the refuge is located within driving distance of approximately 10 million residents of Virginia, Maryland, and Washington, D.C., the refuge's annual visitation is only around 20,000 people. Low visitation may be due to the limited amount of public use facilities or the fact that there are over 400 nearby Federal, state, regional, county and community parks. On the Mason Neck peninsula alone, the refuge is bordered by the Bureau of Land Management, Mason Neck State Park, Gunston Hall Plantation, and Pohick Bay Regional Park. Together in a loose association entitled the Mason Neck Management Area, the federal, state, and regional government agencies can share manpower and material resources and minimize duplication of effort by coordinating recreational activities. Each agency can focus on its strengths of general recreation, outdoor or wildlife dependent recreation, resource protection, and historical interpretation. Collectively the Mason Neck Management Area ensures that the public has the opportunity to enjoy a variety of activities without diminishing the purposes for which we were all created.

On August 14, 2006 the refuge name was officially changed to "Elizabeth Hartwell Mason Neck National Wildlife Refuge" to honor the significant contributions to conservation by Elizabeth Hartwell. Ms. Hartwell, a resident of Mason Neck and a conservation activist, spearheaded the movement to protect habitat on the Mason Neck peninsula.

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A. HIGHLIGHTS



American Bald Eagle

B. CLIMATIC CONDITIONS

In Fiscal year 2005 (October 2004 – September 2005), the climate in the region was mild and pleasant for the most part. Precipitation was normal until we experienced snow storms in December and January. The storms occurred at the end of both months and netted a total of 11.6 inches of snow. February turned out to be drier than usual. Spring was pleasant and mild, with temperatures averaging in the low 60's. Summer exploded on us with June and July bringing above normal temperature averages. September was notable being the driest on record ever in our area with .11 inches of rain.

In Fiscal year 2006 (October 2005 – September 2006), the climate in the region was below and above average throughout the entire fiscal year. This was truly the season of record highs and lows for temperatures as well as record rainfall. October 2005 was the wettest on record ever in the area with 9.41 inches of precipitation for the month. The winter months were unusually warm and dry with records indicating that March was the driest ever in our region. The spring and summer brought typical weather with record days of temperatures and rainfall.

C. LAND ACQUISITION

1. Fee Title – Nothing to Report
2. Easements – Nothing to Report
3. Other – Nothing to Report

D. PLANNING

1. Master Plan – Nothing to Report
2. Management Plan – Nothing to Report
3. Public Participation – Nothing to Report
4. Compliance with Environmental Mandates – Nothing to Report
5. Research and Investigations

Refuge biologist Joe Witt completed six years of bald eagle surveys along the shoreline of the Potomac River, between Fort Washington, MD and Aquia Creek, VA. The field study was designed to examine the distribution and abundance of the bald eagles and to assess potential human impacts or the effects that activities might have on their distribution and relative abundance. In general, there has been approximately a three fold increase in the overall number of eagles observed along the shoreline since the beginning of the surveys in 2000. The relationship between their distribution and the availability of perching and foraging habitat along the river suggest(s) that the eagles are avoiding developed areas along the river.

Staff coordinated studies and surveys

Deer spot-lighting

Great Blue Heron nest survey

Great Blue Heron reproductive survey

Bald Eagle reproductive surveys

Forest interior/upland bird point count surveys

Amphibian egg mass survey

Bald Eagle shoreline surveys along the Potomac River

Collateral surveys by permit on refuge

Christmas Bird Count - Audubon Society

MAPS station (n=2) - Institute for Bird Populations (IBP)

Wood Duck banding (Fall) - Virginia Department of Game & Inland Fisheries

Mid-winter raptor survey - The Raptor Society

Bluebird Nest Box - Larry Brindza

Research studies and surveys by permit on refuge

Dendrological Study – Stephen Paull, George Mason University

Archeological Survey of Mason Neck Shoreline – Fairfax County

Table 1. Elizabeth Hartwell Mason Neck National Wildlife Refuge nesting territories and productivity for the bald eagle, between 1990 and 2005.

The definitions for occupancy and reproduction in the text and the table were based upon definitions by Postupalsky (1974).

Territory/ Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Great Marsh I					Occu	Unk	2	2	1	Active/Unsu	2	2	1	2	3	1
Rookery + River								2	Active/Unsu	1	2	Active/Unsu	Unoc	Unoc	Unoc	Unoc
High Point Creek	3	1	2	1	1	2	Unsu	2	Active/Unsu	1	Active/Unsu	Occu	Unk Moved nest	2	1	1
Great Marsh II											Occu	Occu	Single adult	Unoc	Unoc	Unoc

Occu = Occupied Breeding Territory but no nesting behavior observed; Active = Nesting behavior observed
Unoc = Unoccupied site; Unsu = Active site but no fledges produced; and Unk = Unknown

6. Other - Nothing to Report

E. ADMINISTRATION

1. Personnel

- Greg Weiler, Refuge Manager, GS-13, EOD 11/23/97 from WASO Arlington VA, PFT
- Daffny Jones, Refuge Operation Specialist, GS-11, EOD 11/16/03 from Back Bay NWR Virginia Beach VA, PFT, GS-11 effective 06/12/05
- Stacie Allison, Administrative Assistant, GS-7, EOD 8/10/03, PFT
- Joseph Witt, Wildlife Biologist, GS-11, EOD 6/20/98 through 5/12/2006 from BLM, PFT
- Marty McClevey, Outdoor Recreation Planner, GS-9, EOD 1/17/99 from NPS, PFT GS – 9 effective 08/21/05
- Steve Boska, Maintenance Worker, WG-10, EOD 8/26/90, PFT, WG-10 effective 09/18/05
- Gareth Williams, Refuge Officer, GS-9, EOD 2/19/06, PFT
- Tina Steblein, IT Specialist, GS-11, EOD 10/1/2005 through 7/21/06, PPT
- Christopher Revis, Maintenance Worker, WG-5, EOD 7/29/01 through 9/1/06, PFT
- Melvin Bolden, Eco-Intern Associate, 5/15/05 through 8/13/05
- Elvin “Drew” Steans, Eco-Intern Associate, 5/22/06 through 9/1/06

Meetings and Travel Sessions for refuge personnel not listed elsewhere:

October 19-20, 2004

Mid-career Retirement Seminar
Patuxent National Wildlife Refuge, Witt, McClevey

December 2004	Leadership and Management Skills for Non-Managers National Conservation Training Center (NCTC), McClevey
January 11-12, 2005	Avian and Shrub Habitat Regional Workshop Patuxent National Wildlife Refuge, Witt
January 13, 2005	Region 5 Invasive Species Workshop Patuxent National Wildlife Refuge, Witt
March 21- 25, 2005 August 16 -19, 2005	SAMMS Training Instructor National Conservation Training Center, Jones, Boska
April 15 - 29, 2005	Region 5 Wage Grade Safety Workshop Edwin B. Forsythe NWR, Boska, Revis
September 2005	Wage Grade Maintenance Workshop Panel Participant National Conservation Training Center
February 22-June 29, 2006	Federal Law Enforcement Training Center Brunswick, GA, Williams
February 26- March 1, 2006	Grant Writing NCTC, Witt
February 11-17, 2006	Computer Systems Management in the FWS NCTC, Allison, Steblein
March 13-17, 2006	Administrative Workshop/Project Leaders Meeting R5 NCTC, Allison, Weiler, Jones, Steblein
May 2006	USFWS Motorboat Operator Certification Course Annapolis, Maryland, Revis
May 25-29, 2006	SAMMS Training NCTC, Revis
June 18-23, 2006	Internet Web Site Developments National Conservation Training Center, Allison
July 9-21, 2006	ROBS – Refuge Officer Training NCTC, Williams
July 31-Augus 25, 2006	LE Training at Great Dismal Swamp NWR Suffolk, VA, Williams
September 3-29, 2006	LE Training at Long Island NWR Complex Shirley, NY, Williams

All staff completed various mandatory training online courses and designated staff completed fire refresher training. Boska and Revis completed CPR/First Aid Training.

2. Youth Programs

In August 2005, Girl Scout Melinda Hopper obtained community service credit by assisting with the installation of interpretive panels. See 3. Volunteer Program – second paragraph for additional information.



New Great Marsh Trail Kiosk Panels

3. Other Manpower Programs – Nothing to Report

4. Volunteer Program

Students from a biology class at the Northern Virginia Community College assisted with the annual great blue heron colony nest count. The February count enabled several new individuals an opportunity to visit and view the colony. Eight students and their biology professor conducted a survey of nest trees. Approximately 50 percent of the trees in the colony were identified by species and measured for diameter breast height. Eighteen volunteers participated in the count.

Refuge volunteers assisted with the cleaning of the interpretive kiosks at the Woodmarsh Trail parking lot, Sycamore Road and the Great Marsh Trail. Kathy Obrien and Paul Dodd helped power wash the kiosks. Paul helped install plywood backings inside the frameworks at the kiosk on Sycamore Road. In August, volunteers assisted in installing three new panels at Great Marsh, two panels at the Woodmarsh parking lot and 5 panels at the Sycamore Road kiosk.

Marty McClevey conducted Trail Management training for volunteers on January 2005. This training consisted of a series of Forest Service videos on general tool use and construction and maintenance of trails in wet areas. A trail patrol report form was introduced for use at the Occoquan Bay and Elizabeth Hartwell Mason Neck National Wildlife Refuge's (NWR's).

On March 5, 2005, members of the Pentagon Chapter of Ducks Unlimited (20 youth and 19 adults) erected 11 wood duck nest boxes and replaced 3 old boxes. The project was completed as a “Green Wing” event for members under the age of 18. They will return in March of 2006 to conduct a follow up event.

In FY 2006, Volunteer Coordinator Marty McClevey facilitated a work project on the Woodmarsh Trail involving the demolition of a bridge at Eagle Point and the subsequent rerouting of trail around the bridge site. This project was coordinated through the Friends of the Potomac River Refuges who supported the project by providing food and encouraging friends’ members to participate. Eight individuals provided two mornings of work on the trail. The project was so successful that the Friends indicated a desire to work with refuge staff on planned projects on a monthly or quarterly schedule.

Members of the Quantico Chapter of Ducks Unlimited (DU) maintained 14 wood duck nest boxes on the refuge. The project is an outreach of DU’s Green Wings, a program for members under the age of 18. This group erected the boxes in fiscal year 2005 and has indicated an interest to provide this service in the future.

Volunteers assisted with cleaning and staining of kiosks at the Great Marsh Trail and the Woodmarsh trail. Volunteer Paul Dodd accumulated several hundred hours of volunteer service by assisting Maintenance Worker Jamie Revis and Steve Boska with maintenance projects at Mason Neck. Paul completed the defensive driving course which enabled him to further assist the staff by driving refuge vehicles. He also obtained instruction in the use of the refuge’s Toro Workman, a utility vehicle that can be driven down narrow trails. Paul learned to use the pull behind blower and brush chipper.

5. Funding

<u>Fiscal Year</u>	<u>Appropriation</u>	<u>Source</u>
2005	\$556, 100	1261
2005	\$ 15, 190	1262
2005	\$ 14, 790 (rental funds)	1262
2005	\$ 5, 000 (fire)	9264
2005	\$ 3, 242 (rec fee)	6351
2006	\$316, 384	1261
2006	\$147, 141	1262
2006	\$ 50, 855 (equip. replacement)	1262
2006	\$ 19, 540 (rental funds)	1262
2006	\$176, 970	1263
2006	\$ 8, 300 (challenge cost share)	1263
2006	\$ 79, 930	1264
2006	\$ 5, 684 (rec fee)	8081

Revenue sharing checks were delivered to Fairfax County and Prince William County.

6. Safety

On February 3, 2005, Maintenance Worker Boska and Assistant Manager Jones completed the Collateral Duty Safety Officers' Course. During the Staff Meeting held on February 9, 2005, Maintenance Worker Boska highlighted to the Staff several items discussed at the Course.

On June 21, 2005, the Regional Manager of Safety and Health conducted a Safety and Occupational Health Assessment. The general synopsis of the assessment was "Most of the deficiencies were minor or recommendations on upgrading a borderline condition." were given.

In October 2006, Maintenance Mechanic Boska and Assistant Manager Jones attended a two day course on the Resource Conservation and Recovery Act. The training was conducted at the Northeast Regional Office.

In January 2006, Maintenance Mechanic Boska briefed the staff on "Bloodborne Pathogens and Related Facts". A discussion followed the briefing.

In March 2006, Maintenance Mechanic Boska provided handouts and briefed the staff on First Aid "What is My Responsibility?". A discussion followed the briefing.

In June 2006, Maintenance Mechanic Boska briefed the Staff on Fire Extinguisher Operation. A hands-on training followed a short video and discussion.



McClevey Operating Fire Extinguisher I

In June 2006, Maintenance Mechanic Boska sustained a laceration to his left knee. Because of the severity of the laceration, Refuge staff called Emergency Medical Services. EMS treated him at the scene of the injury and transported him to a hospital for further treatment. The injury did not cause lost time from work.

7. Technical Assistance

Network and DSL installation at Occoquan NWR - Mar. 2004

Dan Greeley and Tina Steblein successfully networked the Potomac River NWR, Occoquan Bay NWR Visitor Contact Station. This included the installation of a network switch, cabling, wall jacks, DSL Modem, and a Cyberguard router. The ISP (Internet Service Provider) is Verizon. The configuration was established to support part-time use by Marty McClevey, and the new Regional Zone Officer DiJon Jones.

Satellite upgrade at Potomac River HQ - Apr. 2005

The existing Direcway 4020 system was no longer meeting office needs of 5-6 users, and performance speeds were no longer what they were before. The question was raised whether or not this was as a result of increasing online applications and use by all users, or the Service provider. Several hours were spent conferring with Provider Tier 2 technical specialists. An on-site visit was made to confirm that there were no 'dish pointing' issues. Essentially, the existing system was no longer meeting office needs, and the providers were no longer able to provide acceptable performance on the earlier installed system. Therefore, after much deliberation, the decision was made to upgrade the system so that basic online/internet functionality could be met with the new system providing 800-1024k download speeds and about 128-200k up. The new DSL system performed adequately, and provided some improvement over speed of the previous system.

8. Other Items – Nothing to Report

F. HABITAT MANAGEMENT

1. General

Only support activities were accomplished at Mason Neck in FY2005, as focus was put on getting Occoquan Bay NWR up and running. As programs settle at Occoquan Bay, staff will be able to take a more balanced approach to all the complex units.

Located along the Potomac River and Occoquan Bay, the Refuge consists of 2,277 acres of the over 8,000 acre Mason Neck peninsula and consists of the following habitat types:

<u>Habitat</u>	<u>Acres</u>
Woodland	1,883
Wetland	364
Grassland	15
Brush	10
Administrative areas (i.e. buildings, parking lots)	5

Habitat management has primarily been directed at providing relatively undisturbed habitat for the bald eagles and maintaining and creating habitat for wintering and migrating waterfowl and other resident wildlife populations.

2. Wetlands

The wetlands are split between the broad Great Marsh fronting onto the Potomac in the arch of the boot shaped peninsula and High Point Creek, an impounded drainage system near the toe of the peninsula. The Great Marsh has several meandering creek mouths and is dominated by wild rice, spatterdock, and other open marsh species favored by a constant freshwater tidal exchange. High Point Creek is narrow, protected by forested promontories except at the narrow impounded (large dike) mouth with little exchange of water beyond storm surges and runoff.

High Point Creek was drawn down during late spring as much as it could be drawn down in an effort to provide better foraging opportunities for young eagles and great blue herons.

3. Forests

Upland hardwood forest (1,883 acres) is the predominant vegetative type on the refuge and the peninsula. The dominant deciduous species in the upland forest include: white oak (Quercus alba), chestnut oak (Quercus prinus), red maple (Acer rubrum), American beech (Fagus grandifolia), and yellow poplar (Liriodendron tulipifera). Virginia pine (Pinus virginiana) and loblolly pine (Pinus Taeda) constitute the principle conifer species. Thirty-six species of trees have been recorded on the refuge.



Mason Neck Forest

4. Croplands – Nothing to report

5. Grasslands

Only about 15 acres of grasslands remain on the refuge. During colonial times and up to the early 1900's, numerous acres was used for agriculture (crops and dairy) and logging. Natural

succession has converted the grasslands into hardwood forests leaving basically a monotypic habitat of mixed hardwoods with small patches of conifers. Most of the refuge has not been logged in last 40 to 50 years and some areas on refuge have stands of 100+ year old trees.

Grassland management activities are directed at rotational and cyclical mowing of designated fields. One-third (approximately two acres) of the environmental education field is mowed annually as part of a three year rotational strip mowing program designed for educational interpretation and habitat diversity. Maintenance worker Steve Boska mowed the Environmental Education field and the old dairy area at the end of Sycamore Road to maintain these grasslands. Other areas mowed included the weather station field near the maintenance shop and the old home site at the end of Anchorage Road.

6. Other Habitats – Nothing to Report

7. Grazing – Nothing to Report

8. Haying – Nothing to Report

9. Fire Management

On Mar 13, 2006, at approximately 3:45 p.m., Maintenance Worker Revis and Maintenance Mechanic Boska(FWS) arrived at the maintenance shop and noticed the power was off. Maintenance Mechanic Boska called Mason Neck State Park (MSNSP) and spoke with David Stapelton, Assistant Park Manager. Mr. Stapelton said the power at MSNSP Headquarters was also off. Mr. Stapelton said he would check the lines and see if he could find the cause of the outage. Within a few minutes Jess Lowry, Park Manager MSNSP, called the shop and said David Stapelton reported there was a fire on the Refuge on the “other side of Woodmarsh Trail”. The cause of the fire appeared to be a pine tree had fallen on the power line. Maintenance Worker Revis and Maintenance Mechanic Boska left for the scene.

David Stapelton was at the scene. At approximately 4:00 p.m. FWS arrived at the fire – located along the power line right-of-way near the “Hunter Check-In” area and started to cut a fire line. David Stapelton’s son had called 911 to report the fire. Jess Lowry arrived at the scene and provided law enforcement coverage along High Point Road. Within 10 or 15 minutes, one pumper arrived from Station 20. Captain Pray from Station 20 became the Incident Commander. Later two brush trucks, another pumper, a tanker truck and assistance from Station 19 arrived. Approximately 16 firefighters from Fairfax County were at the scene.

At approximately 5:15 p.m. Dominion Power arrived with two service trucks. At approximately 5:30 p.m., Captain Pray said the area was safe and asked if FWS personnel could remain for another ½ hour to check the fire perimeter. Maintenance Worker Revis and Maintenance Mechanic Boska left the scene at approximately 6:00 p.m. David Stapelton said he would periodically check the area at night. An estimated .39 acre was the area of the fire. The fire incident was named High Point Power line Fire.

Later Maintenance Mechanic Boska met with Fairfax County Fire Captain to ensure that if another wildfire broke out on the Refuge, the fire captain would have a list of Refuge staff, maps of Refuge roads, trails, fire roads, storage areas of fuel, and sources of water. He also reviewed the Fire Management Plan with the Fire Captain and provided the Fire Captain with a list of all chemicals in use at the maintenance shop and a current site map of the maintenance compound.



High Point Power Line Fire



High Point Power Line Fire

The Refuge purchased a variety of hand tools, e.g., fire combination tools, fire flails, backpack pumps, and fire rakes, to increase the amount of fire hand tools in the fire tool cache.

10. Pest Control – Nothing to Report
11. Water Rights – Nothing to Report
12. Wilderness and Special Areas – Nothing to Report
13. WPA Easement Monitoring – Nothing to Report

G. WILDLIFE

1. Wildlife Diversity

Mason Neck is located just 18 miles south of our Nation's capital and is adjacent to a rapidly growing metropolitan area where habitat is constantly being altered and degraded. The Refuge is located at the end of a boot-shaped peninsula which extends out into the Potomac River and provides a relatively remote area of upland forests and freshwater marshes which are frequented by a diverse group of wildlife species. The monotypic mature upland hardwoods, freshwater marshes, and small grassland areas which comprise the Refuge habitat hosts over 211 species of birds, 31 species of mammals, and 44 species of reptiles and amphibians.

2. Endangered and/or Threatened Species

The primary objective for which the refuge was established was to protect essential nesting, feeding, and roosting habitat for the Bald Eagles (Haliaeetus leucocephalus). There are three primary or historic areas for nesting activity on the refuge: the Great Marsh, the heronry and Potomac River shoreline near High Point, and the middle and upper reaches of High Point Creek. Other significant areas in the vicinity of the refuge are the roost and a nest site on Kanawha Creek in the neighboring state park, a nest and roost on the north border of the refuge and Gunston Hall, a nest site between Gunston Manor and Hallowing Point communities, and a nest site on undeveloped land on the north portion of the peninsula.

Historically, the eagles abandoned the nest near the heronry and moved out in along the shore between Anchorage and High Point. Though active for three years, the nest in the heronry seemed in conflict with the herons and the High Point Creek Nest so the move was not surprising. In 2002 the occupied breeding site was abandoned and has not been occupied for the last four years.

As in the past, portions of Woodmarsh Trail beyond Eagle Point were closed mid December and reopened in late June early July. The trail has closed every year since 1994, when the nest was discovered.

3. Waterfowl

Although Mason Neck is out of the mainstream of the Atlantic Flyway, the refuge, as part of a series of small marshes along the Potomac River, provides migrating and wintering habitat for dabbling and diver ducks. Over 20 waterfowl species have been reported on the refuge. Tundra swans and snow geese, while not numerous, are new additions to the list and have become regular winter visitors in the last six years. Rafts of canvasback, lesser and greater scaup, ruddy ducks, mergansers, and buffleheads are frequently seen offshore.

4. Marsh and Water Birds

Historically, marsh bird surveys were conducted at Elizabeth Hartwell Mason Neck and Occoquan Bay National Wildlife Refuges in June and July of 1999 using two passive listening intervals (initially a 0-5 minute period and 1-minute final period) and in-between a broadcast response (playback) portion. Only two species of colonial waterbirds (Great Blue Heron and Great Egret) have been identified on the refuge. The population size of the colony in the southwest corner of the refuge has grown from 30 nests in 1979 to over 1,500 in the last few

years. During this interval the reproductive potential for the herons in the colony has varied considerable, and maybe related to weather factors prior to fledgling in June (*Waterbirds* 29(3):345-348, 2006).



Little Marsh and Heron Rookery

5. Shorebirds, Gulls, Terns, and Allied Species – Nothing to Report

6. Raptors – Nothing to Report

7. Other Migratory Birds

Volunteer Larry Brindza has continued to maintain nest boxes at various sites on the refuge. Nest boxes are on Sycamore Road, Anchorage Road, the field and shop yard near the end of High Point Road, and on the High Point Creek Dike. Blue birds use most of the boxes but he regularly reports chickadees, prothonotary warblers, and tree swallows also using the boxes. It is unsure how much longer this activity will continue. Due to permitting procedures, participants are not as willing to continue with the program.

8. Game Mammals

The deer are in relatively good health with multiple sets of twins and few pied bald deer being observed occasionally on the refuge. Information about the whitetail deer hunt is listed in the public use section.

9. Marine Mammals – Nothing to Report

10. Other Resident Wildlife

Wild turkeys have been seen on a more frequent basis near the end of Sycamore Road, the end of Anchorage Road and along High Point road near the head of Little Marsh Road. It appears, based on frequency of sightings, that the turkey population may be increasing.

11. Fisheries Resources - Nothing to Report
12. Wildlife Propagation and Stocking - Nothing to Report
13. Surplus Animal Disposal - Nothing to Report
14. Scientific Collections - Nothing to Report
15. Animal Control - Nothing to Report
16. Marking and Banding

The Institute for Bird Populations from Port Reyes Station, California continued operating two Monitoring Avian Productivity and Survivorship (MAPS) stations on Mason Neck, which were started in 1995. The refuge was involved as part of a partnership with nearby Ft. Belvoir letting the refuge piggyback on a military program “Monitoring Avian Productivity and Survivorship (MAPS) Program on Military Installations and other Federal Lands in the Midwest and East: ...” The refuge’s stations are Mason Neck-1 located on Sycamore Road near Old Barn Road and Mason Neck-2 on Little Marsh Road northwest of the High Point eagle nest. Volunteers, trained by IBP, operate the stations and conduct an average of 8 banding sessions between May and August each summer. At the site the birds were captured with mist-nets, identified, sexed, and measured. The 2005 field season resulted in 38 birds being newly banded with 11 recaptured from previous years at Mason Neck-1 site; and 54 birds being newly banded with 6 recaptured from previous years at Mason Neck-2 site during. The 2006 field season resulted in 66 birds being newly banded with 19 recaptured from previous years at Mason Neck-1 site; and 66 birds being newly banded with 17 recaptured from previous years at Mason Neck-2 site during.

17. Disease Prevention and Control – Nothing to Report

Chronic Wasting Disease was detected in deer herds in several states in the Region in 2005. In 2006, CWD was detected in deer near the West Virginia/Virginia state line. The refuge is in a medium risk area based on distance to known CWD areas and captive cervid herds. A CWD Surveillance and Contingency Plan was developed for the Complex in 2006. Based on the State CWD plan, detection within a 5 mile radius will result in increased surveillance and sampling of the deer herd. Additional cases will result in the designation of a Population Reduction Area and the refuge would work with the State and Counties to implement herd reduction.

The Refuge also completed an Avian Influenza Surveillance and Contingency Plan in response to the threat of H5N1 occurring in the migratory bird population on the east coast.

H. PUBLIC USE

1. General

Major accomplishments were made at the Elizabeth Hartwell Mason Neck NWR this Fiscal Year. All interpretive panels at the Joseph V. Gartlan Great Marsh Trail were replaced with updated panels. One 3’ X 3’ panel provides information on Joseph Gartlan and trail information. A 3’ X 5’ panel provides information on the Great Marsh with photographs of typical plants and wildlife. New panels were installed at the Woodmarsh parking lot including a 3’ X 5’ trail map

and a 2' X 3' angled aluminum trail head map and information panel. Six panels at the Sycamore Road kiosk were replaced. New panels include the White-Tailed Deer, a 3' X 5' panel on the bald eagle, invasive plants, a trail map and wildlife you may see.

High Point Trail was dedicated at the Elizabeth Hartwell Earth Day on April 2005. The refuge staff, volunteers and members of the Friends group set up a tent with displays on the Elizabeth Hartwell Mason Neck Refuge as well as other topics of interest. The refuge provided van tours to the Little Marsh Creek great blue heron colony. We were treated to a visit by Bill Hartwig, the Chief of the National Wildlife Refuge System. Assistant Manager Daffny Jones coordinated the dedication of the paved bike path which parallels High Point Road from the Mason Neck State Park Visitor Center to Gunston Road. Use of the trail has not been as high as initially anticipated. The trail affords bikers, joggers and hikers with a safe, level pathway into the State Park. A public trail connects with the High Point Trail at Gunston Road and travels into Pohick Bay Regional Park. A local citizen group is spearheading an effort to eventually extend the trail system on the Mason Neck peninsula to Route 1.

The Friends of the Potomac River Refuges was chartered in 2002 to support the refuges of the Potomac River Complex. Since that year the emphasis of the organization has mainly involved the operation of the Occoquan Bay National Wildlife Refuge. This has resulted in a continued decline in visitor services activities and support through the volunteer program. In FY2006, a major effort was placed on increasing volunteer assistance at the refuge and to involve the Friends of the Potomac River Refuges in specific projects and public use activities. We began by encouraging members of this organization in to participate in the annual Mason Neck Eagle Festival by assisting refuge staff with setting up and staffing the refuge and Friends' displays. Several members contributed in this effort and the refuge staff was freed up to facilitate other activities such as the heron colony tours and migratory bird activities. A second goal was to orient the Friends' membership and Friends' Board to the Mason Neck Refuge. This goal was accomplished by coordinating a workday for the organization on the Woodmarsh Trail. The third goal of increasing the volunteer assistance at the refuge was fostered through the use of the monthly Volunteer Newsletter by posting specific needs and opportunities. No one responded to the requests.

Visitation to the refuge was monitored through the use of trail counters on the Woodmarsh and Great Marsh Trails. A decline in visitation in 2006 was noted and confirmed by data collected at the adjacent Mason Neck State Park. A new counter has been proposed for installation along the new High Point Bike trail to determine the number of individuals who walk and bike through the refuge to access the State Park.

Other than the visitor services activities provided at the Eagle Festival and through the media of interpretive panels at three kiosk locations, no environmental education, interpretation or special tours are routinely provided for the public by the service. Kathy O'Brien, a volunteer for the Complex worked with Visitor Services Specialist Marty McClevey to conduct visitor use monitoring at Mason Neck and Occoquan Bay to determine the specific activities in which visitors engage themselves while visiting these refuges. A monitoring scheme and data sheet was created this fiscal year as a first step in accomplishing the monitoring. It is anticipated that a coordinated monitoring program will take place at Mason Neck and Occoquan in fiscal year 2007. The results of these observations and greater emphasis on patrolling the trails of Mason Neck will hopefully provide insight into the kinds of visitor services activities that should be offered.

The Complex continued to utilize lottery hunts to manage the white-tailed deer population on the Refuge and State Park. Over two hundred hunters participated in the hunts.

Fishing is not accommodated on the Refuge and it is unlikely that this activity will be allowed in the future. Wildlife Photography was facilitated through the use of a photography blind located on Raccoon Creek. This blind was damaged by a tree toppled in a summer storm and is no longer available for use by the public.

Finally, Visitor Services Specialist Marty McClevey sought to increase the use of the Great Marsh Trail by mobility impaired individuals by offering a Ranger guided tour during the Eagle Festival. He contacted Carmen Sanchez, the Special Needs coordinator for Fairfax County to seek advice in promoting and facilitating the program. In spite of this effort, for the second consecutive year, no one participated. The Refuge staff recognizes the need to do more to promote this trail and accommodate visitors with special needs. This emphasis will continue in fiscal year 2007.

2. Outdoor Classrooms-Student

Biologist Joe Witt and Assistant Manager Daffny Jones-Hoskie continued to facilitate research projects with students from Thomas Jefferson High School. Sixty students per year carry out several projects involving the monitoring of salamanders at points along High Point Road and Anchorage Road.



Device used to count salamanders as they travel to pool



Salamander egg mass

3. Outdoor Classrooms-Teachers – Nothing to Report

4. Interpretive Foot Trails

As noted in the General section for Public Use, new interpretive panels were installed at the kiosks for the Woodmarsh and Great Marsh Trails. A new trail head panel was erected at the Woodmarsh parking lot.

In May 2005, maintenance workers Boska and Revis along with volunteer Stephanie Leon installed the Mark I telescope. The telescope is handicap accessible and is installed on the observation platform located at the end of Great Marsh Trail. The Trail is a paved $\frac{3}{4}$ mile handicap accessible trail that terminates at the Great Marsh portion of Elizabeth Hartwell Mason Neck National Wildlife Refuge.



New Telescope on Great Marsh Trail

Annually there is a closure of a small portion of the Woodmarsh Trail from December to June so as not to disturb nesting behavior by eagles. This limits the trail's attraction to visitors, leaving only the late summer and fall when visitors can get close to the nest. Flies and mosquitoes discourage a lot of potential visitation to the site in the summer. In FY 2006, a fallen tree heavily damaged a boardwalk on the Woodmarsh Trail. Maintenance Worker Revis and Volunteer Stephanie Leon accomplish repairs on the boardwalk.



Woodmarsh Trail boardwalk before repair



Volunteer Leon adds finishing touches

In June and July of 2006, repairs continued on Woodmarsh Trail. Drainage improvements, erosion control, bridge construction, and general trail rehabilitation kept the maintenance staff and their volunteers busy during these months.



Woodmarsh Trail Improvements

Because one boardwalk was rotted and damaged by past storms, it was necessary to remove the dilapidated bridge and re-route the trail.



Maintenance Worker Revis removing sections of bridge

As noted in the volunteer section, the bridge at Eagle Point on the Woodmarsh Trail was demolished by the Friends of the Potomac River Refuges and staff and hauled off the trail. Several hundred yards of new trail was constructed to route hikers around this bridge site. New hiker and directional arrow trail signs were purchased this year and will be installed in 2007. The Woodmarsh Trail is in need of major trail restoration work including the replacement of at least three forty foot boardwalks.

5. Interpretive Tour Routes – Nothing to Report

6. Interpretive Exhibits and Demonstrations

Marty McClevey and Volunteer Otto Swoboda attended the 18th annual Mount Vernon District Town Meeting on February 5 at Hayfield High School. An exhibit on the Elizabeth Hartwell Mason Neck refuge was displayed for the public. Hundreds of citizens attended the event.

Refuge staff participated in the annual Elizabeth Hartwell Earth Day at Mason Neck State Park. A large tent was set up to hold a variety of displays and information on the Elizabeth Hartwell Mason Neck Refuge and refuges of the Complex.

As in previous years, the wildlife biologist set up a viewing area station across from the heron rookery during Elizabeth Hartwell Day in May for visitors to observe the scope of the rookery and their behavior during the breeding season in colony.

In FY2006, Marty McClevey and Volunteer Otto Swoboda attended the 19th annual Mount

Vernon District Town Meeting on February 4 at Hayfield High School. An exhibit on the Elizabeth Hartwell Mason Neck refuge was displayed for the public. Hundreds of citizens attended the event. 54 people were contacted during the event.

Refuge staff participated in the annual Elizabeth Hartwell Earth Day at Mason Neck State Park. A large tent was set up to hold a variety of displays and information on the Elizabeth Hartwell Mason Neck Refuge and the refuges of the Complex. Marty attended several planning meetings for this festival and coordinated the involvement of the Complex at the festival. This year the Refuge and Mason Neck State Park staff cooperated in the interpretation of migratory bird themes at the festival. The refuge hosted Jennifer Wheeler and Joy Korones from the Service's International Migratory Bird Day office who set up a bird collisions obstacle course. Bill Teetz, volunteer bird bander, coordinated the operation of a banding station at the State Park visitor center for the day. Here kids were measured and banded with "bird buddy wrist bands" which were purchased by the Friends' organization. Patricia Wood worked with Marty McClevey in presenting a puppet show for kids featuring a yellow warbler. The migratory bird activities were very well attended. The refuge also hosted van tours to the Little Marsh Creek great blue heron colony. This is always a popular tour. Marty conducted an accessibility tour of the Joseph Gartlan Great Marsh Trail. In spite of great efforts to promote the tour through Fairfax County to reach out to individuals with impaired mobility, the tour was not successful. This is the second year for the special tour and the second year that no one has attended. Heavy rains lowered the attendance numbers for the event but did not dampen the enthusiasm of the refuge staff and volunteers. Though it was the intention of the Refuge to do less at this event due to time and staffing shortages, we actually ended up doing much more than anticipated.

7. Other Interpretive Programs – Nothing to Report

8. Hunting

The annual Mason Neck Management hunt took place over the course of two days in November and a third day in December. Three hundred hunters participated in the hunt in 2004. Three hunt orientation sessions were held in October at the Northern Virginia Community College, Woodbridge Campus. In November 2004, hunters and their families were permitted to walk in any area of the refuge and State Park to scout for deer. About 90 hunters and family members participated in the day of scouting.

Table 1b. Combined Fall Deer Shotgun Harvest at Mason Neck State Park/National Wildlife Refuge, 1995-2005.

<u>Year</u>	<u>Does</u>	<u>Bucks (antlered/button)</u>	<u>Totals</u>
1995	25	34	(28/6) 59
1996	15	40	(25/15) 55
1997	62	51	(28/23) 113
1998	44	53	(38/15) 95
1999	34	60	(34/26) 93
2000	53	56	(33/22) 109
2001	48	44	(27/17) 92
2002	41	31	(23/8) 72
2003	48	67	(46/21) 115
2004	39	60	(54/ 6) 99
2005	39	50	(37/13) 89
2006	60	61	(46/15) 121

Hunter Orientation taking place in October annually occurs at the Woodbridge Campus of the Northern Virginia Community College. This facility, rented by the Complex for this function, has convenient parking and access to the interstate and can comfortably accommodate a large number of hunters in each session. Two hundred and nineteen hunters attended the sessions in FY 2006.

In November, the Refuge and State Park hosted the annual Scouting Day in which hunters and their families are invited to visit the refuge and state park to scout the hunt area. Seventy-five people, fifty-five hunters and their families, took advantage of this outing to look for white-tailed deer sign and obtain a feel for the land in November 2005. Ranger Marty McClevey monitored the Scouting Day and recognized how important this opportunity is not only for the hunters, but for their families as well. McClevey said, "It was heartwarming and encouraging to see dads pointing out deer tracks and sign to their kids."

The annual Mason Neck Management hunt took place over the course of two days in November and a third day in December in 2005. Two hundred and ninety-six hunter days were recorded for the three days of hunting. The Complex continues to see a decline in the number of applicants for the hunts. This is representative of a State wide trend.

9. Fishing – Nothing to Report

10. Trapping – Nothing to Report

11. Wildlife Observation

During the Hartwell Earth Day event, the refuge hosted van tours to the Little Marsh Creek heron colony. This portion of the refuge is closed to the public. Around 60 people took advantage of this opportunity to view the colony in FY2005 and 30 people in FY2006. Several Baltimore orioles were seen during the excursions.

12. Other Wildlife Dependent Recreation

Northern Virginia Audubon Society conducted a Christmas Bird Count on the Elizabeth Hartwell Mason Neck Refuge. This is an annual permitted event for the refuge.

13. Camping – Nothing to Report

14. Picnicking – Nothing to Report

15. Off-Road Vehicling – Nothing to Report

16. Other Non-Wildlife Oriented Recreation

As in previous years Gary Knippling, a local running enthusiast and resident was permitted to use a portion of the Woodmarsh Trail for a leg of the Eagle Run, a 10K foot race. The race is a fund raiser and generally has no more than 25 participants. The race has been allowed to take place on the refuge trail because of it being an annual event and a tradition on the peninsula.

17. Law Enforcement

In FY 2005, a visitor who frequented the Great Marsh Trail was cited for the possession of controlled substances. Refuge staff had observed this individual on occasions with beer and observed numerous crack cocaine cans in trash cans and along the trail in relation to this persons visit.

On March 30, 2006, the maintenance staff installed a culvert on Sycamore Road, The work site was at the turn around area near Sycamore Point Landing. Maintenance Worker Revis was operating the Deere 1250 tractor. The tractor's front tire moved an object. Maintenance Worker Revis dismounted the tractor and mentioned he found an artillery projectile. The projectile was about 1 to 2 inches below the ground's surface. Maintenance Mechanic Boska directed that operations cease. He made the area safe, contacted the Refuge Manager and the Fairfax County Police. Fairfax County Police responded with three officers and the Bomb Disposal (EOD). After examining the ordnance, the EOD Team determined the projectile had been fired and it may be a 155mm possible World I era. The EOD team retained possession of the item.



155mm Artillery Round found on Sycamore Rd.

In July 2006, a van carrying four clients from a group home in Woodbridge was struck by a falling tree on High Point Road about a mile off Gunston Road. No one was hurt in the incident but the van sustained a large dent in the roof above the driver's head. A wind storm blew a large tree into a dead snag on the edge of the road. This tree then broke off and fell across the roadway. Fairfax Police investigated the incident as damage to private property. The State Park and Refuge filed reports on the incident because it could not be immediately determined if the tree and the van were on State or Refuge property. It was later determined that the tree was on State property. Ranger McClevey and Maintenance Worker Christopher Revis assisted the park maintenance crew with clearing the tree out of the roadway.



High Point Trail

Since the opening of the High Point Trail there have been numerous incidents of visitors accessing closed portions of the State Park and Refuge by walking up Sycamore Point Road from the bike trail. Several visitors were encountered walking off the Woodmarsh Trail and using Sycamore Point Road to return to the bike trail. Area Closed signs posted on Sycamore Point Road at the Woodmarsh Trail kiosk warn visitors not to use the roadway. It is hoped that the placement of signs at the bike trail to warn visitors that they are entering a closed area through the State Park may alleviate some of this trespass.

18. Cooperating Associations – Nothing to Report

I. EQUIPMENT AND FACILITIES

1. New Construction

In November 2004 and September of 2006, two new open carports, 21'X 21'X12', were constructed at the Mason Neck maintenance compound. The buildings will be used for storing lumber, equipment and the like.



New Carports at Shop Area



2. Rehabilitation – Nothing to Report

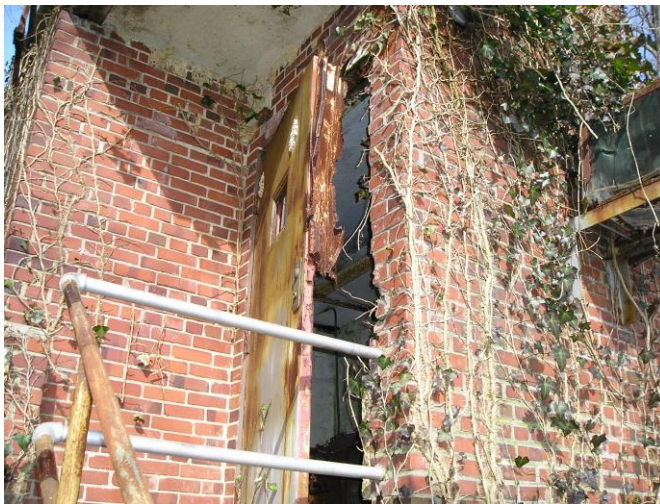
3. Major Maintenance

In December 2004, the primary hydraulic take up line failed on the Caterpillar D4 dozer. A Caterpillar field service technician completed the repair.

In February 2005, Maintenance Worker Revis replaced the old shop lights in the maintenance shop. The old shop lights of more than 20 years had served their usefulness and needed replacement.

In June 2005, the Ford 900 dump truck required repairs to the clutch and the radiator. The radiator by-pass hose required replacement.

In January 2006, Maintenance Worker Revis and Volunteer Paul Dodd sealed the entrance to the 1950's era bomb shelter at the former Davy house site at the end of Anchorage Road. Over the years the bomb shelter became structurally unsound. Some rooms of the bomb shelter collapsed. The blocked entrance prevents trespass to the former bomb shelter.



Entrance to Shelter before being sealed



Entrance to Shelter after being sealed

In April Maintenance Mechanic Boska, Maintenance Worker Revis, and Volunteer Paul Dodd installed a culvert at the turnaround near Sycamore Point landing. This area was prone to flooding and washing away of the road. Coupled in with this project was construction of a vernal pool. The vernal pool will be used by Thomas Jefferson High School as part of their environmental education/research activities.



Flooded area before culverts and vernal pool



Flooded area after culverts



Vernal Pool created for Run-off (Boska and Witt above standing in vernal pool)



Vernal Pool in summer

In May 2006, Maintenance Mechanic Boska, Maintenance Worker Revis, Volunteer Paul Dodd, and Eco-Intern Drew Steans completed extensive repairs to Tree Stand Road. The team added gravel and geo-textile to the roads and replaced two rusted out culverts.



New culverts on Tree Stand Road



Eco-Intern Steans operating Dingo Four-Paw

During the month of August the Refuge said “good-bye” to two exceptional workers. Here Maintenance Worker Revis and Eco-Intern Steans stand by another completed project – the installation of the Refuge Sign at the High Point Creek impoundment.



Maintenance Worker Revis(L) and Eco-Intern Steans(R)

4. Equipment Utilization and Replacement

In June 2006, the Refuge received a replacement Deere 110 Loader/Tractor/Backhoe. This piece of equipment replaced the Deere 1250 tractor. The old Deere 1250 was purchased in 1984. The tractor was in excellent condition and received a “high value” trade in. Both pieces of equipment are shown below.



Out with the old and in with the new

In July 2006, the Refuge received a Toro Workman 2110 Off Road Utility Vehicle. The vehicle replaced a “vintage” Yamaha All Terrain Vehicle (ATV). The Refuge purchased the ATV in 1985.



Workman 2110 ORUV

In August 2006, the Refuge received a steel hazardous materials storage building. The building replaces an older wooden storage building. The new building meets the storage criteria set forth in 29 CFR, 1910.106(d) (6).



HAZMAT Storage Building

5. Communications Systems

In the spring of 2005 the Complex installed a new radio system with a repeater located on Mason Neck. The tower and radio repeater is used jointly by the refuge and BLM. The tower was located next to the BLM office with the repeater inside the office. The system worked great until the first thunder storm when the tower took a lightning strike. The strike blew out the coaxial cable and inline fuses but the repeater survived. Unfortunately, utilities and computer cables for BLM's office run underground and the surge burnt out a number of computers, phones, and electrical systems. Repairs were made and plans for additional precautions were discussed, however, before they were implemented there was another lightning strike which repeated the damage to BLM equipment. A grounding halo with additional ground rods was installed around the tower with ground lines to the office and lightning protectors installed in the breaker panel. Since then there have been no problems. The new system works well and allows communications virtually anywhere in the area. Previously there were large areas where neither radios nor cell phones would work.



Tower on BLM property



Satellite next to Refuge Shop

6. Computer Systems

From February 22 until February 28, 2005, maintenance worker Revis attended the Computer Support Overview Course conducted at the National Conservation Training Center in Shepherdstown, West Virginia. Also see E-7. Technical Assistance.

In December 2006, the maintenance staff and a contractor replaced the maintenance shop's satellite dish and router system. The older system's speed was insufficient to support SAMMS. The newer system provided much improved service.

7. Energy Conservation

In March 2006, the Refuge started a recycling effort for technotrash, e.g., printer cartridges, diskettes, CD's. etc. The Refuge purchased a prepaid collection box for easy disposal of these materials. Once the box is full, the materials are mailed to a commercial company for the safe disposal of these technotrash items. Throughout this report period, the Refuge recycled 2.8 tons

of metal, 1.5 tons of paper, and 345 pounds of plastic and glass containers. The Refuge also recycled more than 100 gallons of used oil. Other items disposed through recycling include fluorescent bulbs, all types of batteries, and vehicle tires.

8. Other – Nothing to Report

J. OTHER ITEMS

1. Cooperative Programs

In November 2004, Maintenance Workers Boska and Revis received Certificates of Appreciation from the Virginia State Parks Director. The certificates were awarded for contributing to the success of the Virginia State Parks Program by working with the Virginia State Parks Youth Conservation Corps.

2. Other Economic Uses – Nothing to Report

3. Items of Interest

Volunteers Elaine Haug and Nicky Staunton inventoried and mounted the Mason Neck plant herbarium collection. This collection has been maintained in an unfinished state for several decades. Elaine and Nicky transferred specimens that had not been mounted onto formal museum standard and referenced mounting sheets. They then transferred the remainder of the collection to the same mounting and labeling system. This provided an opportunity to formally document the specimens into the museum property inventory.

The museum property artifact collection for Mason Neck was inventoried and placed in museum storage boxes. This was the first time an extensive inventory and physical check of the entire collection had been completed in several years. Paperwork for the collection was also updated and a master file was created for the refuge headquarters filing system.

The complex received a final report of the archeological work done on several shoreline sites on Mason Neck by Michael Johnson, Senior Archeologist for the Fairfax County Park Authority. The document discusses the effects of shoreline erosion on these sites. Mr. Johnson plans to pursue obtaining additional permits to do a more extensive archeological survey in the future. A copy of the report was sent to John Wilson, Regional Archeologist.

In May 2006, Marty McClevey met with Lisa Stewart of the US Geological Service to assist her in the collection of samples of sediment from marshes at locations on the Elizabeth Hartwell Mason Neck and Occoquan Bay Refuges. The purpose of the collections was to analyze the sediments for the presence of the avian influenza virus deposited through the excrement of waterfowl. The only site found suitable for the collection of samples at Mason Neck was the Little Marsh Creek impoundment. Samples were also collected from ponded areas along Catamount Creek at Occoquan Bay. Lisa and her assistant found it very difficult to maneuver through the marshes by boat or on foot. She indicated that the samples probably would not serve well in determining the presence of the virus because of the low numbers of waterfowl that use these marshes and the fact that the waterfowl that are present continually move about to different locations within the marsh making it virtually impossible to find fresh excrement in the sediment at any one location.

Marty McClevey, Christopher Revis and Joe Witt attended a pesticide applicator's preparatory course in Fredericksburg, Virginia. This course was facilitated through the Virginia Tech Cooperative Extension Service.

4. Credits

Everyone on the staff contributed to the writing of this report. Manager Weiler reviewed and signed it. Refuge Staff and Refuge Volunteer Bill Wallen contributed the pictures.

K. FEEDBACK – Nothing to Report

OCCOQUAN BAY NATIONAL WILDLIFE REFUGE
Woodbridge, Virginia

INTRODUCTION

Located about 20 miles south of Washington, D.C., Occoquan Bay National Wildlife Refuge is a 644 acre parcel on a peninsula bordered by the sandy river shoreline of Belmont Bay, Occoquan Bay and the tidal flats of Marumsco Creek. It lies approximately 4 miles east of the fall line separating the Coastal Plain from the Piedmont Uplands Province, resulting in alluvial terrace deposits underlain by sand, silt, clay, and gravel in a massive eastward-thickening wedge of sediments. "Occoquan" is derived from a Dogue Indian word meaning "at the end of the water". Adjacent to the confluence of the Occoquan and Potomac Rivers, tributaries to the Chesapeake Bay, the location made this area a stopover site for migrant birds as well as a natural site for Native American and colonial settlement.

Occoquan Bay NWR is made up of two parcels formerly known as the Woodbridge Research Facility and the Marumsco National Wildlife Refuge. The research facility, which served as an Army communications in the 1950's and 1960's and a top secret research center in the 1970's and 1980's, closed its operations in September of 1994 under the Base Realignment and Closure Act (BRAC). Local citizen initiatives and political support led to the signing of legislation by President Clinton in September 1994, authorizing transfer of the entire facility to the U.S. Fish and Wildlife Service. The site was formally transferred in June, 1998. Marumsco NWR had been established in 1973 when the Army exsessed the creek p0ortion of the property. Recombining the two parcels with the new name Occoquan Bay gave the site more community recognition and management capability.

As a classified Army site, the Woodbridge Research Facility was closed to the public. Mowed and cleared for electronics testing, the site contains a diversity of grassland and wetland plant species unusual in the heavily developed Potomac region. Its diverse habitats support a correspondingly high number of wildlife species, particularly migrant land and waterbirds and grassland nesting species. Wetland habitats cover about 50 percent of the sire, and include wet meadows, bottomland hardwoods, open freshwater marsh, and tidally influenced marshes and streams. About 20 percent of the unit is upland meadows, with the remaining vegetated areas consisting of shrub and mature or second growth forest. The refuge is managed to provide early successional habitats and appropriate wildlife dependent recreational opportunities, to educate visitors on the results and benefits of habitat management for wildlife, and for the enjoyment and benefit of people.

The Refuge is located in Prince William County, one of the fastest growing counties in the Commonwealth of Virginia, with more than 241,000 residents. The county consists of 222,305 acres of land and 51,200 acres of water. It is comprised of single family and multi-family residential homes, agriculture, parks and open space, and government, commercial, and industrial facilities. Employment is high, predominately in government and government-associated services or activities.

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A. HIGHLIGHTS



New Year Eve's Sunrise, Occoquan Bay NWR

B. CLIMATIC CONDITIONS

See Elizabeth Hartwell Mason Neck NWR

C. LAND ACQUISITION

1. Fee Title – Nothing to Report
2. Easements – Nothing to Report
3. Other – Nothing to Report

D. PLANNING

1. Master Plan – Nothing to Report
2. Management Plan – Nothing to Report
3. Public Participation – Nothing to Report
4. Compliance with Environmental Mandates – Nothing to Report

5. Research and Investigations

Refuge wildlife biologist initiated a grassland/shrub bird field study in 2000 and completed the project and final report in FY2006. The overall purpose of the study plan was to determine the distribution and abundance of shrub and grassland birds at the Occoquan Bay National Wildlife Refuge and the influence that burning and mowing has on the birds distribution and abundance. The secondary objective of the study was to compare and contrast two sampling approaches used for surveying bird populations. The first method is the widely used fixed-radius point count methodology (Hutto et al., 1986; Verner 1985). The second method involved an area searched and territorial mapping approach (Williams 1936; Bond 1957; and Svensson 1970). Several species were distinctly influenced negatively or positively by the prescription during the experiment. There were several species that showed no effect during the experiment and were probably either responding to yearly or more global or landscape attributes occurring outside the refuge. Clearly, the burning and mowing negatively impacted the Orchard Oriole, Yellow-breasted Chat, and Yellow Warbler, while mowing alone negatively impacted the American Goldfinch. The analysis of the area searched/territorial data found that the Field Sparrow and the Northern Cardinal species were favorably influenced by the burn prescription, while the analysis of the point count data gave uncertain results for both species. In conclusion, the report suggested based on the positive and negative results observed during the experiment, resource management agencies should plan the use of burning and mowing in a manner that includes provisions for both the shrub and the grassland birds.

Staff coordinated-

Grassland bird point count surveys
Territorial mapping surveys
Quantitative grasslands vegetation surveys
Deer spot-lighting
Bald Eagle surveys along the Potomac River

Collateral surveys by permit-

Mid-winter raptor survey - The Raptor Society
On-going (monthly) bird surveys - Prince William Natural Resources Council
Christmas Bird Count Occoquan Bay NWR - Prince William Natural Resources Council
Deformed frogs surveys - Ecological Services, CBFO
Bluebird Nest Box – K. Parker (Friends of PWNRRWC)
Spring Woodcock survey - Fairfax Audubon Society
Dragonfly/Butterfly Survey - Kim Hosen and James Waggener

6. Other - Nothing to Report

E. ADMINISTRATION

1. Personnel

See Elizabeth Hartwell Mason Neck NWR – Staff shared as part of Potomac River NWR Complex.

2. Youth Programs

The Complex continued its involvement with Boy Scouts of America and Girl Scouts of the USA. Two girls completed work towards Gold Awards in this FY2005. Girl Scouts provided substantial assistance in the eradication of Japanese knotweed and in the establishment of a butterfly garden and path at the main parking lot. One Girl Scout badge event was facilitated on the refuge. Marty McClevey attended the Courts of Honor for two Boy Scouts, Brian Parks and John Krukar, who were given Eagle Scout Awards. Brian completed his work in FY 2004 by constructing a trail at the banding station and John completed his work in FY 2004 by installing gate posts in the Taylor Point portion of the refuge.



Girl Scouts with McClevey constructing garden

Refuge Visitor Services Specialist, Marty McClevey, met with Girl Scout Kathleen Berry, also from Troop 1696, to discuss a Gold Award project. Kathy agreed to work in coordination with Sam Smith's project so that the girls would have the opportunity to learn about native plants. Kathy proposed establishing a butterfly garden at the main parking lot to enable visitors to observe butterflies on native plants and to provide an accessible path for mobility impaired visitors. She coordinated her work with Nicky Staunton, former president of the Virginia Native Plant Society, to insure the use of native plants that are found on the refuge and those that would attract specific species of butterflies. Kathy's project began in April of 2005 with the assistance of employees of the Osprey Gold Course who roto-tilled the planting areas. Refuge Maintenance Workers Steve Boska and Jamie Revis excavated the paths and hauled recycled concrete material to the site as tread material for the path. Boska and Revis constructed a 10 foot by 10 foot framework at the end of the path to serve as a level pad for setting two park benches. On April 1, Girl Scouts backfilled the path with gravel and weeded the tilled planting areas. On two additional Saturdays, the girls completed the planting of foxglove, blackeyed Susans, and blue

vervain. They filled the framework for the benches and set two benches in place. Kathy and other volunteers returned through the summer to weed the garden and keep the new plants watered.

McClevey also met with Sam Smith, a Gold Award candidate, to discuss the details on her specific project to be completed in the spring of 2005. She made a proposal to complete work related to the eradication of invasive plant species. Her project would begin in November by assisting with an invasive plant workshop and then continue in April in the coordination of Girl Scouts in attacking a colony of Japanese Knotweed at the old Dawson family home site. She would include an educational component in the project in which she would teach the girls why invasive plants are harmful, what specific plants threaten the Occoquan Refuge and what means can be employed in eradicating the plants. Sam completed her work in early May after coordinating three work days at the home site. Sam's project was officially approved as completed in June, 2005.

Youth Conservation Corps enrollees participated in work projects at the Occoquan Refuge. The resident camp was hosted by Mason Neck State Park. The 20 individuals helped Maintenance Workers Steve Boska and Jamie Revis remove chain link fence from the shoreline perimeter of the refuge. The group cleared about a half mile of fence. (See I. Equipment and Facilities, 2. Rehabilitation)

In June 2005, Freedom High School presented the refuge with a certificate for its contributions as a business partner. The Complex staff has afforded Freedom High with opportunities to involve its students in community service and research oriented work on the Occoquan Bay Refuge.

In FY 2006, the Complex continued its involvement with Boy Scouts of America and Girl Scouts of the USA. A handful of inquiries were made by Boy Scouts seeking to complete Eagle Projects at the Refuge. However, none met with the staff to discuss how they might obtain a meaningful experience within the Complex. This was a significant change from previous years in which we facilitated at least one Eagle Scout project each year. We continued to maintain a relationship with the Girl Scout Council of the Nation's Capital. The Council has been a viable partner with this refuge since 1999. Marty McClevey, Visitor Services Specialist and Volunteer Coordinator for the Complex encouraged the participation of local Girl Scouts in refuge projects and annual events. Marty coordinated the involvement of girls with Sandy Saha, Programs Specialist for Council. Much fruit was derived from this collaboration including the future planning of a celebration of Rachel Carson's 100th birthday in 2007. Marty also provided Sandy with guidance on the construction of an environmental education boardwalk at the Council's Cole's Trip facility located in Stafford County, Virginia.

The Church of Jesus Christ and Latter Day Saints involved their teens in a variety of activities at the Occoquan Bay Refuge in 2005 and 2006. Norma Maestri, who had facilitated a stewardship walk on the refuge in 2005, rallied the teens to complete volunteer service at the site. The weekend before the refuge's second Fall Festival, youth from the church set up tents, raked wood chips and helped set up the migratory bird banding station to prepare for this hugely successful community event. It was the conclusion of the Friend's group leadership and refuge staff that the work of these teens saved hundreds of hours of staff time. In November, five adults and six youth returned under the leadership of Devin Huling to set up tripod and ladder hunt stands in preparation for the manage white-tailed deer hunts. In March of 2006 twenty-eight youth and five adult leaders returned for a third time to help install the newly acquired Occoquan Bay

National Wildlife Refuge, Blue Goose entry sign. They also spread gravel at the main parking lot and excavated a drainage ditch at the entry gate to alleviate a safety hazard and create a wetland planting site. We greatly appreciated their hard work and enthusiasm.

In June of 2005, Freedom High School, an environmental science High School located in Woodbridge, Virginia, presented the refuge with a certificate for its contributions as a business partner. The Complex staff has afforded Freedom High with opportunities to involve its students in community service and research oriented work on the Occoquan Bay Refuge. We especially appreciated the effort made by Dr. LouEllen Brademan, Education Specialist at Freedom High in aligning the work of the school with that of the Refuge and providing the use of the school's greenhouse and horticulture class to start native plant seedlings for use in the Occoquan butterfly garden.

3. Other Manpower Programs – Nothing to Report

4. Volunteer Program

The volunteer program continues to grow. In FY2005, the Regional Office provided \$4000.00 in special funding for promoting and enhancing the program. This money was used to purchase badly needed volunteer uniform items and hour milestone awards. Over 4,700 hours of service was documented for the Complex. Volunteer Otto Swoboda complete 1,400 hours of service, placing him within 100 hours of an accumulated 2000 hours since he began working in 2003. Otto has served as gate greeter for the refuge. Two other volunteers contributed significantly to the volunteer program. Dorothy Estep completed over 1000 hours of service and Kathy OBrien completed over 200 hours of service. Each served in the public use program by working the entry booth, closing the refuge in the evening or assisting at special events. Volunteer Bill Wallen served as the official Complex photographer. Bill facilitated three photography workshops, provided high quality digital photographs of events and for use in several interpretive panels. Marty McClevey continued as volunteer coordinator. He facilitated interpretive training and trail maintenance training for volunteers. Due to an increase in annual visitation to the refuge along with an increase in accidents and incidents, an emphasis was placed on ensuring volunteer safety. McClevey worked with Law Enforcement Specialist Dijon Jones in implementing the use of a witness observation form to be used by volunteers to report incidents and violations.

The Defense Intelligence Agency Rod and Gun Club continued to assist at our annual youth fishing event and managed deer hunts. Volunteers from the club erected hunt stands on the refuge and assisted during the 3 days of deer hunting. Several members assisted at our youth fishing event by serving as fishing instructors and mentors.

Suzanne Miller supervised volunteers at the Occoquan Bay bird banding station. Over 365 hours of service was completed by the banders. Suzanne then completed an additional 80 hours of administrative work for the operation of the station. The banding station, in operation since April 2001, has served to provide valuable migration data and invaluable educational opportunities for the public. On July 30, 2005, Biologist Joe Witt and Outdoor Recreation Planner Marty McClevey hosted a pizza gathering for the bird banders at the contact station. Twenty people attended the gathering.



Bird banding volunteer at Station

Suzanne was awarded a floppy volunteer hat and a 500 hour pin. Dave Mitchell received a pin, mug and patch for running the program with Suzanne. Elizabeth Sellers received a mug, patch and pin. Bill Teetz constructed a shed for the station last year and received a pin, mug, and patch. He had 147 hours this season. Paul Napier received a mug. Joanna Taylor received a mug, pin and patch. Bev Smith received a mug and patch. Lannie Graham received a mug. Gordon Knight received a mug patch and pin. Eagle surveyors were also recognized at the gathering including Larry Cartwright, Marcie Haeker-Skeens, Paul VanRijn, and Larry Springer.

In April of 2005, volunteers from the Back Bay National Wildlife Refuge constructed a ramp and stairway to a dock at Painted Turtle Pond. (See I – 1. New Construction for picture)

Volunteer Patricia Wood coordinated the annual youth fishing event and began preliminary planning for a fishing educational and mentoring program.

Marty McClevey met with Educational Specialist, Dr. LouEllen Brademan of Freedom High School in Woodbridge, Virginia to discuss volunteer opportunities for students on the refuge. Freedom High School presented the refuge with a certificate of appreciation for the partnership between the refuge and the high school.

A monthly volunteer newsletter was created for the fiscal year. This newsletter has enhanced communications between the refuge and the volunteers. The newsletter contains a calendar of events, upcoming volunteer training, upcoming volunteer opportunities, event descriptions and a special section to highlight specific volunteers and their work. Marty McClevey has served as the creator and editor of the newsletter.

Recognition of Volunteers

On May 12, 2006, International Migratory Bird Day, Volunteer Coordinator Marty McClevey hosted a Volunteer Recognition reception for all of the volunteers of the refuge complex. A dozen or more volunteers attended and ate sandwiches while hour milestone awards were presented. Bill Wallen was recognized as Volunteer of the Year for 2005 in Visitor Services and Suzanne Miller was recognized as Volunteer of the Year for 2005 in Biology. Bill's photographic skills provided the complex with photographs and digital images that were used in numerous interpretive panels, on the web site, to document special events including our prescribed fire operation at Occoquan and in refuge brochures and reports. Bill also conducted photography workshops at the Fall Festival and at the National Conservation Training Center in Shepherdstown, West Virginia. In this fiscal year, Volunteer Otto Swoboda reached the milestone of over 4000 hours of volunteer service. He was awarded a certificate from the Secretary of Interior. Dorothy Estep, a volunteer at the Occoquan Bay Refuge, was awarded a certificate from the Director of the Fish and Wildlife Service for accumulating over 3000 hours of volunteer service.

Volunteer Highlights

Patricia Wood, who has volunteered at the Complex since 1999, coordinated the youth fishing event on May 20 and under her own self directed initiative, took the event a step further by creating a fishing mentoring program called Fishing for our Future. Patricia created a curriculum to teach kids about the basics of fishing and recruited fishing enthusiasts from the region to serve as mentors. Though the program did not attract as many youth as anticipated, her work now serves as the basic groundwork for future efforts in advancing a formal fishing program at the refuge. Patricia created handbooks, a power point teaching presentation and a special patch for this program. She was presented a special recognition plaque for her service in this effort.

Volunteer Kathy O'Brien worked with Marty McClevey to create a visitor monitoring program at the Occoquan. Through this effort, Kathy positioned herself in the main parking lot of the refuge and observed what activities the visitors engaged themselves. Since the establishment of the refuge, no data has been collected on hiking, wildlife observation and photography. These observations, conducted at different times of the day and days of the week and throughout the year will provide invaluable data for future visitor services planning. Kathy's work mainly involved refining a data collection sheet for conducting the observations.

ExxonMobil Corporation holds its annual refuge shoreline cleanup in April. At this cleanup, ExxonMobil employees and their families are invited out to help pick up litter and construction debris along the refuge shoreline. This event which has been conducted since the site was an Army facility, has been extremely fruitful for ExxonMobil and the Service. In addition to providing the volunteers, Exxon also donates a set amount of money based upon the number of employees that participate. In past years the Friends organization has received up to \$5,000.00 for the Complex through this event. Approximately two miles of shoreline were cleaned along with the entire refuge boundary from Dawson Beach Road, along the Ospreys golf course to Taylor Point. In FY 2005, due to the bad weather, the cleanup effort lasted about 2 hours, but much work was completed and a roll off dumpster was filled to capacity. In FY2006, a roll-off dumpster was filled and three truckloads of material were transported to Mason Neck State Park to be placed in a dumpster provided by the Allison Ferguson Foundation.

Volunteer Management

Volunteer Coordinator Marty McClevey held monthly volunteer meetings at the Occoquan Bay Visitor Contact Station. Tailgate training was offered at these meetings on a variety of topics to enhance the knowledge and skills of volunteers. The meetings were generally well attended. McClevey also continued to publish a monthly volunteer newsletter to keep refuge volunteers and other interested groups and individuals up to date on current events, upcoming events, training, safety and specific opportunities for volunteer service. A three hour Visitor Services training session was conducted in 2006 to help volunteers learn about compatibility determinations and the Big Six public uses. Defensive driving, IT and fire extinguisher training was also provided for volunteers during this fiscal year. New restrictions and requirements were placed on volunteers who routinely access refuge computers and the internet. Internet security training and Privacy Act training will now be required for these individuals. In addition, background checks will be required for long term and high hour volunteers.

Volunteer Donna Rae Dean provided invaluable support by taking over some of the basic administrative functions of the volunteer program. Donna Rae, a talented lady who has traveled extensively in the US and Africa, donated a substantial amount of time in updating the volunteer database, updating volunteer agreements, formulating a meaningful rewards scheme and inputting data on a monthly basis and assisting with the recognition reception.

5. Funding

See Elizabeth Hartwell Mason Neck NWR – combined funding for Potomac River NWR Complex.

6.Safety

See Elizabeth Hartwell Mason Neck NWR.

7. Technical Assistance

See Elizabeth Hartwell Mason Neck NWR

8. Other Items – Nothing to Report

F. HABITAT MANAGEMENT

1. General

Previously, site rehabilitation focused on the compound area in the center of the refuge, whereby the area was seeded with winter wheat and rye in fall of 2003 to provide an organic base for the seeding of Switch Grass, Big Blue Stem, and Indian grass the following year. This year a Girl Scout troop under M. McClevey supervision planted a butterfly garden next to pond in the compound area.

2. Wetlands – Nothing to Report

3. Forests – Nothing to Report

4. Croplands – Nothing to Report

5. Grasslands

Each year starting in February and continuing sporadically into March the staff mowed approximately 90 to 100 acres to suppress the shrub component from over-whelming the Eastern Gama Grass grasslands. Similarly, during the spring the refuge burned approximately 40 to 50 acres to suppress the shrub component from over-whelming the Eastern Gama Grass grasslands.



Grassland field with Sweet Gum growth

In FY 2005, Maintenance Worker Boska began the hydro-axe operation at Occoquan Bay NWR. The hydro-axe was used in the areas of sweetgum encroachment and in areas for brush reduction. This is the first opportunity the Complex has had for use of the hydro-axe.



Regional Hydro-Axe

6. Other Habitats – Nothing to Report

7. Grazing – Nothing to Report

8. Haying – Nothing to Report

9. Fire Management

In late April-2005 the refuge planned on burning four units, but weather conditions limited activities and put the burn out-of-prescription and two units (ca. 45 acres) were burned with the assistance of the Fire Management Officer and teams from two other refuges in the region. In addition, fire lines were both mowed and plowed by the maintenance staff prior to burning. In preparation for conducting prescribed burns and maintaining safety standards, staff went to the refresher course and completed physicals and pack tests prior to burning.



Prescribed Burn in progress

10. Pest Control

Marty McClevey obtained his Pesticide Licensing from the state of Virginia so that the Complex will be ready and able to treat pest invasive species if needed. Some acreage was treated in 2005.

11. Water Rights – Nothing to Report

12. Wilderness and Special Areas – Nothing to Report

13. WPA Easement Monitoring – Nothing to Report

G. WILDLIFE

1. Wildlife Diversity

Over 215 species of birds, 60 species of butterflies, and numerous mammals, amphibians, reptiles, and other species inhabit the site making it one of the most varied in northern Virginia. Factors that contribute to diversity are the over 600 species of plants that have been documented, the site's location at the junction of two rivers, and the many uses the land has been put to in the past.

2. Endangered and/or Threatened Species

Bald eagles have been seen frequently using the shoreline for perching and resting. A pair of eagles was seen roosting and perching along the eastern shore during months of January through March in 2004, and this past year a pair established a territory and built a nest along the shore. On February 24, two prominent birders observed a pair of bald eagles bringing sticks to a large tulip poplar along a tidal inlet off Deephole Point Road. Further observation confirmed that the two were building a nest. The section of the Deephole Point Road and trail from the end of Fox Road to the end of Easy at Deephole Point was closed to foot traffic until it could be determined if the eagles would actually nest. The trail was reopened in May when the nest site was officially declared abandoned. Plans have been made to close the trail in December in anticipation of a further interest by the birds to nest. Gate posts will be set at each end of the trail to facilitate closing.



Eagle at Occoquan Bay NWR

3. Waterfowl

The man-made pond in the compound receives constant use, primarily by pairs of Canada geese, hooded mergansers, and wood ducks. In the winter, black ducks, mallards, and wood ducks seemed to prefer the beaver impounded creek paralleling Easy Road. Ruddy ducks and lesser-and-greater scaup often raft off the southern shoreline near the mouth of Marumsco Creek. For example, during the Christmas Bird Count between 20,000 and 25,000 scaup were using the Occoquan Bay and adjacent shoreline.

4. Marsh and Water Birds

Historically, marsh bird surveys were conducted at Elizabeth Hartwell Mason Neck and Occoquan Bay National Wildlife Refuges in June and July of 1999 using two passive listening intervals (initially a 0-5 minute period and 1-minute final period) and in-between a broadcast response (playback) portion. Only two species of colonial waterbirds (Great Blue Heron and Great Egret) have been identified on the refuge. However, in recent years additional waterbirds have been sighted on the refuge by visitors.



Yellow-crowned night heron in marsh

5. Shorebirds, Gulls, Terns, and Allied Species

Woodcock have become very visible during the spring with peenting activity noted in all quadrants and liable to occur well into early summer. With the mild winter, some woodcock were even heard “peenting” during the Christmas bird count in January.

6. Raptors

The open expanses draw many raptors. Red-shouldered hawks utilize many of the smaller meadows fringed by trees while red-tailed hawks soar over the larger areas in competition with bald eagles and osprey. Kestrels can be seen near the main compound on light posts and the fence while harriers sweep the western half of the refuge. During the winter the Northern Harrier are common sites in the grassland areas of the refuge.

7. Other Migratory Birds

Refuge biologist Joe Witt completed four years of grassland bird surveys at the refuge and plans on completed a summary report. The field study was designed to examine the distribution and abundance of neotropical birds and to assess the potential impacts of mowing and burning. In general, it was found that fifteen species (see PLANNING, in the Research and Investigations section) that either showed a positive or negative response based on either their general location in the fields, prescription, and or simply they were affected by the year the survey was completed (that is, stochastic annual variation within the population). The relationship between the distribution and prescription suggested some species are affected by a variety of influences (proximity to edge, severity or completeness of the burn, yearly variation within the grassland, and prescription). In addition, migratory birds using the river corridor were captured using mist nets near Marumsco Creek during April and May, with 539 birds identified and banded (see Marking and Banding section for more details).

8. Game Mammals

Spotlight counts to census the deer population were initiated in September 1998 and demonstrate an increasing population, followed by a decreasing trend in 2001 due to hemorrhagic disease and implementation of a hunt program on the refuge. (See Figure 3 and H – 9. Hunting)

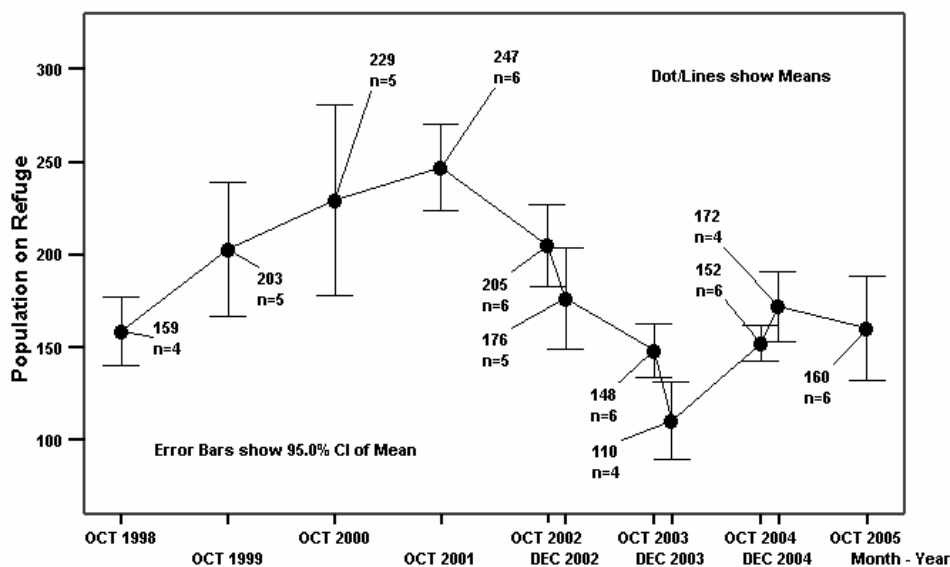


Figure 3. Estimated deer population at Occoquan Bay NWR between 1998 and 2005, based on spotlighting approximately 190 acres of habitat and extrapolating estimates to 550 acres of meaningful and suitable deer habitat on the refuge.

9. Marine Mammals – Nothing to Report
10. Other Resident Wildlife – Nothing to Report
11. Fisheries Resources – Nothing to Report
12. Wildlife Propagation and Stocking – Nothing to Report
13. Surplus Animal Disposal – Nothing to Report
14. Scientific Collections – Nothing to Report
15. Animal Control – Nothing to Report
16. Marking and Banding

In 2001 a spring (April-May) banding station was established on the refuge with cooperation and assistance of several volunteers near the mouth of the Marumsco Creek. At the banding site valuable data on resident and migratory bird species using the refuge is collected with the purpose of establishing a long-term monitoring site. Staffing for the station is totally composed of volunteers under the supervision of the refuge biologist and lead volunteer/coordinator (Suzanne Miller, a resident of Fairfax County and volunteer bird bander with the Institute for Bird Population and their MAPS project at Mason Neck). Initially, funding for the station came primarily through the biological program of Potomac River NWR, but more recently the Friends group for the refuge has taken the activities of the banding under their wing and built a storage building for the project. See attached Table for summary of all the birds banded on the refuge.



Volunteer banding a bird

Name	Code	2001	2002	2003	2004	2005	2006
Red-bellied Woodpecker	RBWO	1	2	1	3	1	3
Downy Woodpecker	DOWO	4	3	2	4	4	5
Hairy Woodpecker	HAWO	1		1	2		1
Northern Flicker	YSFL	2	1		2		1
Pileated Woodpecker	PIWO		1		1	1	1
Eastern Wood-Pewee	EAWP				1	5	
Acadian Flycatcher	ACFL	1	1	1		3	4
Traill's Flycatcher	TRFL					6	5
Eastern Phoebe	EAPH		2	1	1	4	
Great-crested Flycatcher	GCFL				1	1	
Eastern Kingbird	EAKI		5		1	1	2
White-eyed Vireo	WEVI	1			2		1
Warbling Vireo	WAVI					3	1
Philadelphia Vireo	PHVI				1		
Red-eyed Vireo	REVI	1	4	2	2		3
Blue Jay	BLJA	3			7	4	1
Tree Swallow	TRES			2		2	
N. Rough-winged Swallow	NRWS	1		2		1	
Carolina Chickadee	CACH	2	4	4	1	4	2
Tufted Titmouse	ETTI	6	7	3	5	2	4
White-breasted Nuthatch	WBNU		1		1		
Brown Creeper	BRCR				1		3
Carolina Wren	CARW	7	3	6	11	7	9
House Wren	HOWR	2	1		2		1
Winter Wren	WIWR		1			1	2
Marsh Wren	MAWR	1					
Golden-crowned Kinglet	GCKI				1		
Ruby-crowned Kinglet	RCKI	4	1	4	3	9	5
Blue-gray Gnatcatcher	BGGN		3	6	4	4	5
Eastern Bluebird	EABL		1		2	3	5
Veery	VEER	2		3	1	1	7
Gray-cheeked Thrush	GCTH			1	3		6
Swainson's Thrush	SWTH		4	3	2	10	9
Hermit Thrush	HETH			1	2		
Wood Thrush	WOTH		1	1			
American Robin	AMRO	2	1	1	1	1	3
Gray Catbird	GRCA	36	22	15	39	27	38
Northern Mockingbird	NOMO	3		3	1	1	
Brown Thrasher	BRTH	6	6	4	8	7	6
Cedar Waxwing	CEDW	1	1			1	3
European Starling	EUST			3	1		1
Northern Parula	NOPA		1	2	1		1
Yellow Warbler	YWAR		12	4	4	6	8
Chestnut-sided Warbler	CSWA			1			
Magnolia Warbler	MAWA		1	3		5	
Black-throated Blue Warbler	BTBW	1		2	1	1	4
Black-throated Green Warbler	BTGW						1
Yellow-rumped Warbler	MYWA	104	48	57	48	35	96
Yellow Palm Warbler	YPWA		2	4	5	12	32
Western Palm Warbler	WPWA			1			
Blackpoll Warbler	BLPW		12	6	2	42	13
Black and White Warbler	BAWW			1		1	1
American Redstart	AMRE		2	1		5	2
Prothonotary Warbler	PROW	4	3	5	3	3	4
Worm-eating Warbler	WEWA	1					

Ovenbird	OVEN				1	2	
Northern Waterthrush	NOWA	7	25	17	14	31	58
Mourning Warbler	MOWA					1	
Common Yellowthroat	COYE	19	87	64	43	48	108
Hooded Warbler	HOWA	1					
Wilson's Warbler	WIWA	1					2
Canada Warbler	CAWA	1		1		4	1
Yellow-breasted Chat	YBCH	1		2		2	5
Scarlet Tanager	SCTA		2				
Eastern Towhee	EATO	6	2	1	14	10	10
American Tree Sparrow	ATSP						1
Chipping Sparrow	CHSP			3			
Field Sparrow	FISP	9	8	7	7	7	7
Savannah Sparrow	SAVS	1					
Song Sparrow	SOSP	16	10	5	14	26	18
Lincoln Sparrow	LISP	2	1		2	1	1
Swamp Sparrow	SWSP	12	4	8	7	12	16
White-throated Sparrow	WTSP	62	84	29	66	59	76
Slate-colored Junco	SCJU						1
Northern Cardinal	NOCA	23	17	15	16	24	37
Blue Grosbeak	BLGR			1	1		1
Indigo Bunting	INBU	4	6	4	6	5	5
Red-winged Blackbird	RWBL	14	14	8	27	31	42
Rusty Blackbird	RUBL			1			1
Common Grackle	COGR	20	26	9	36	29	35
Brown-headed Cowbird	BHCO		2	4	4	1	3
Orchard Oriole	OROR	3	3	11	7	4	5
Baltimore Oriole	BAOR	1	2	5	1	3	5
House Finch	HOFI			3			
American Goldfinch	AMGO	7	11	3	8	14	10
Species caught in net but not banded: Spotted Sandpiper(2), Ruby-throated Hummingbird(24), Northern Bobwhite(2), Fish(1), Frog(1), Crayfish(1)							
Number of Species counted for the Year		45	48	55	57	58	62
Number of birds banded for the Year		407	463	358	455	539	746
Number of Species counted to-date		45	62	72	78	81	83
Number of Species banded to-date		407	870	1228	1683	2222	2968

17. Disease Prevention and Control

See Elizabeth Hartwell Mason Neck NWR – G.17 Disease Prevention and Control

H. PUBLIC USE

1. General

Marty McClevey continued to serve as the Outdoor Recreation Planner for the Complex. He coordinated all visitor use activities for the three refuges.

January 2005 began on a sad note when it was learned that Donald Ruffner, a new and dynamic member of the Friends of the Potomac River Refuges Board passed away unexpectedly. Don was an avid photographer and outdoors person. He loved the Occoquan Bay Refuge and contributed greatly to enhancing the organization and promoting membership. Refuge staff and the Friends board attended a special memorial service at his home in Centerville.

Occoquan Bay National Wildlife Refuge was selected for participation in a visitor satisfaction survey for the Refuge System in Fiscal Year 2004. Visitor questionnaires were provided for use on the refuge and volunteers were trained to carry out the surveys in late summer of 2004. The survey period ran from around August through October, and was completed in the beginning of Fiscal Year 2005. Annual visitation was calculated on the basis of tallies and traffic counter readings to be around 23,000.

Refuge staff began working on the first Annual Work Plan for the Complex which addressed projects and events planned for the public use program at each of the refuges. The establishment of an entrance fee program was given a high priority along with the completion of interpretive panels and installation of kiosks.

Work was started on a fee program for the Occoquan Refuge. Fee envelopes were purchased, a fee vault was designed and ordered and fee signs were drafted. In Fiscal Year 2006, an honor fee system was implemented at the Occoquan Bay Refuge. Much preparation and research went into the establishment of the program. A fee vault was fabricated and installed at the entry booth. Temporary fee signs and instructional signs were created and installed at the entry gate along with an envelope box. Annual passes specific to the Occoquan Bay refuge were purchased for resale to the public. Additional Golden Age, Golden Eagle, Golden Access and holograms were obtained to provide additional options to refuge visitors. Approximately eighty annual passes were sold through the remainder of the fiscal year. The implementation of the fee program caused a reduction in annual visitation. The Complex also implemented a new permit system in which researchers and special users were required not only to obtain a permit but to pay a \$20.00 administrative/processing fee. Many bird groups that had previously used the refuge without prior approval or issuance of a permit strongly objected to the enforcement of the permit system and the associated \$20.00 fee.

The Complex signed an agreement with the Alliance for the Chesapeake Bay, a non-profit organization committed to the protection of the Chesapeake Bay and related resources. The agreement provided the Alliance with an opportunity to obtain grant money to carry out projects at the Occoquan Refuge. Marty McClevey worked closely with Scott Meyers of the Alliance to coordinate an emphasis on invasive plants on the refuge. In November 2004, Scott Meyers and Marty McClevey held a 4 hour workshop for volunteers and representatives of local conservation organizations. Seventeen individuals attended the workshop including individuals from Audubon, the Osprey Golf Course, Boy Scouts of America, Freedom High School, the Virginia Native Plant Society, Northern Virginia Park Authority and the Smithsonian Institute. The workshop specifically covered the concept of Bayscapes or planting to enhance water quality,

defined invasive plants, problems in eradication of invasive plants and the use of special references for identifying and managing invasive plants. The workshop was a success and provided a great stepping stone to the actual workday. In August of 2005, a special workday was held at Occoquan in which volunteers attacked a colony of Japanese knotweed along the shore of the Occoquan River north of Deephole Point. Seventeen individuals cleared approximately 100 hundred meters of knotweed. Mike Lusk, Invasive Plant Coordinator for the Service attended the workday. It was apparent from this work project and the work completed by Girl Scouts at the old Dawson Family home site that pulling knotweed is not effective whether done early in the growing season or late. However the participants for these projects gained a greater appreciation for the extensiveness of invasive plants and the difficulty in controlling their spread.

The first annual Fall Festival was held on October 23, 2004. Members of the Friends organization coordinated the planning for the event. The festival was held at the main parking lot with parking provided at the main lot as well as along the entry road. Refuge volunteers worked along side members of the Friends organization to park cars, staff displays and direct visitors. Organizational participation included the Science Museum of Virginia, which sponsored a science pavilion, the Raptor Conservancy which put on a special live raptor show and reptiles alive which also put on a show for the event. George Mason University displayed a research boat. Friends' members conducted special tours of the refuge. Volunteers opened the banding station for the day to demonstrate the capture and banding of migratory songbirds. Over 400 people attended the event.



FY 2005 Fall Festival - October 2004

The second annual Fall Festival was held on October 15, 2005. Members of the Friends organization coordinated the planning for the event. The festival was held at the main parking lot with parking provided at the main lot as well as along the entry road. Refuge volunteers worked along side members of the Friends organization to park cars, staff displays and direct visitors. Organizational participation included the Science Museum of Virginia's Celebra Scienza, which sponsored a science pavilion, the Raptor Conservancy which put on a special live raptor show and reptiles alive which also put on a show for the event. George Mason University displayed a research boat. Friends' members conducted special tours of the refuge. Volunteers opened the banding station for the day to demonstrate the capture and banding of migratory songbirds. Over 500 people attended the event.

Volunteers and staff participated in the Spring Fling held in March of 2005 at the Belmont Development. This outreach was sponsored by the Science Museum of Virginia and was held as an opportunity for science and conservation groups to provide demonstrations and displays in a carnival setting. Special van tours were conducted from the Belmont site to the refuge. The tours provided an opportunity for guests to view the new eagle nest site on the refuge. Fifty-four people took the van ride. Over 300 people visited the refuge display tent.



Belmont Bay's Spring Fling Eaglets



Refuge information tent

In FY 2005, Joe Witt and Marty McClevey attended a Career day at The University of Mary Washington. Twenty students expressed and interest in the SCEP, internships and general careers.

A new pavilion at the pond and main parking lot enhanced event organization and facilitation on the refuge. The new pavilion at Painted Turtle Pond will greatly aid in our ability to conduct programs, events and environmental education.



Pavilion located at Painted Turtle Pond

In May of 2006 Marty McClevey attended the three day Working with Friends Organizations course at the Conservation training Center. Annette Baker-Toole, President of the Friends of the Potomac River Refuges, also attended the training.

Denise Stevens a volunteer, created a special handout for the refuge which graphically listed the rules and gave an explanation for the rules. This “Welcome” handout has been extremely valuable for refuge staff and volunteers to present the rules as well as provide the visitor with a listing of specific rules and requirements. The Refuge general brochure was updated and the Friends’ organization completed the organization and printing of an official refuge bird list.

Refuge Law Enforcement Officer Gareth Williams joined the staff in 2006 and took possession of the remaining office space in the Contact Station. Ranger McClevey scrambled to move items stored in that space to other sites and to prepare the main lobby of the building for use by the Visitor Services staff and volunteers. This move encouraged more efficient use of current space while providing on-site law enforcement coverage for the refuge.

Manager Greg Weiler and Assistant Manager Daffny Jones-Hoskie facilitated a meeting of the Friends organization and individuals who have a specific interest or tie to the Refuge to review proposals for the placement and construction of a visitor center on the site. The meeting included time in the field in which specific locations were walked and discussed in the context of impacts and feasibility of utilizing these sites.

2. Outdoor Classrooms - Students

Nature's Wonder World continued to provide EE for students from the PW school system. 1400 kids participate in the program each year. Twenty spring sessions were held on the refuge.



Student holding crayfish

Endangered Animals of America, a 4th grade student environmental club at Aldie Elementary School visited the refuge for a field trip to learn about refuge management and endangered species. Ten kids visited the refuge during the morning. The club donated \$50.10 that they raised for endangered species. The money was used to purchase trail signs for use on the Woodmarsh trail.

3. Outdoor Classrooms-Teachers

Eighteen individuals from the Northern Virginia Audubon Society attended a dragonfly workshop at the refuge. The workshop was part of the Master Naturalist Program. They utilized the Visitor Contact Station and the new environmental education pavilion at Painted Turtle Pond for the workshop.



Common Pondhawk (dragonfly)

4. Interpretive Foot Trails

In April 2005, Maintenance Workers Boska and Revis, along with volunteer Stephanie Leon, laid the ground work for the Butterfly Interpretive Garden. Their work included constructing the trails, clearing debris, and general site prep before the plantings started. The site Butterfly Garden is located on a portion of the former Army Base's inner compound. See the next page for an example of old cable troughs the crew ran into.



Maintenance Workers Revis and Boska

Girl Scouts from the Nation's Capital continued the construction of the butterfly garden. The garden includes a trail that is about 100 feet in length and is composed of a two short loops and a pad with two benches overlooking a small man-made pond. Marty McClevey coordinated with the Girl Scout Council of the Nation's Capital for the construction of a butterfly garden and path at the main parking lot. The short path has two benches and a small compacted gravel loop to accommodate wheel chairs. Linda Kelley, the Golf Course Superintendent for the Osprey Golf Course provided the services of two workers to till the planting beds.

In FY 2006, a LeConte's sparrow, very rare to this region of the country was discovered in tall switchgrass located off Bayview Road. This discovery touched off a flurry of birding activity and related use on the refuge. The refuge biologist, manager and visitor services specialist agreed that given the location and the current viewing opportunities that it would not be necessary to open other areas to the public to view the bird.

The remainder of chain link fence along the shoreline was removed which has presented new problems to maintaining the perimeter roads and trails. Debris washed ashore from storms, in the past, had been stopped by the fence. Now that the fence is gone from the entire shoreline, this debris freely floats up over the rip-rap and deposits in the roadway. The debris, which is a hindrance and safety hazard must be monitored and removed by Maintenance Worker Steve Boska after each high water event.



Before fencing was removed



After fencing was removed

A one mile section of Deephole Road from the gazebo to Deephole Point was closed briefly after reports of bald eagles exhibiting nesting behavior. Two prominent birders observed a pair of bald eagles bringing sticks to a large tulip poplar along a tidal inlet off Deephole Point Road. Further observation confirmed that the two were building a nest. The section of the Deephole Point Road and trail from the end of Fox Road to the end of Easy at Deephole Point was closed to foot traffic until it could be determined if the eagles would actually nest. The trail was reopened in May when the nest site was officially declared abandoned. Plans have been made to close the trail in December in anticipation of a further interest by the birds to nest. Gate posts were set at each end of the trail to facilitate closing the trail.

5. Interpretive Tour Routes

Work continued towards finalizing a series of interpretive panels for the refuge. Two cedar kiosks and four aluminum angled frameworks to hold wayside exhibits were purchased and delivered to the Complex. The cedar kiosks will have space for a 3' X 3' interpretive panel and a bulletin board. One kiosk has been erected at the bird banding station parking lot and the other outside the refuge entry gate near the contact station satellite parking area.

6. Interpretive Exhibits and Demonstrations

In FY 2005, Marty McClevey attended a meeting of the Belmont Bay Homeowners Association to present information on the refuge and how they can be better neighbors. About 100 people attended. Larry Underwood, President of the Friends of the Potomac River Refuges and Annette Baker-Toole attended the meeting and presented information on the work of the Friends organization.

Volunteer photographer Bill Wallen and Recreation Planner Marty McClevey obtained photos of towers, tall buildings and power lines in the Northern Virginia region for use by the International

Migratory Bird Day Office in Arlington. The photos were used at an exhibit at the National Zoo on International Migratory Bird Day.

In FY 2006, the Friends of the Potomac River Refuges completed the approval of the final drafts of interpretive panels to be placed in the pavilion at the main parking lot of the refuge. Ten fiberglass embedment panels from Wilderness Graphics arrived in July. The six, 3' x 3' panels were installed by Kevin Parker in August. Marty McClevey coordinated the installation of a cedar kiosk with bulletin board at the banding station and at the satellite parking lot located adjacent to the Visitor Contact Station.



Bird Banding Kiosk

Marty installed a 3' x 3' fiberglass panel in the kiosk at the banding station which interprets the banding process. He worked with Eco Intern Drew Steans, Volunteer Paul Dodd and Manager Greg Weiler in the installation of angled aluminum frames at the four locations on the refuge. A 2' x 3' fiberglass panel on birding was installed in the frame at the gazebo. A 2' x 3' fiberglass panel on wetlands was installed at the mouth of Catamount Creek on Deephole Point Road. A panel with photographs of butterflies was installed in the butterfly garden at the main parking lot.

The final drafts for panels to interpret the Woodbridge Research Facility, grasslands management and to welcome visitors to the refuge were sent off to Wilderness Graphics for fabrication. These panels will be installed in 2007.

7. Other Interpretive Programs

In FY2005, the Friends of the Potomac River Refuges conducted six special walks for Friends members. Topics of the walks included a birding walk, a flower identification walk, a butterfly walk and monarch butterfly lecture, a photography workshop and a special lecture on bird migration and a woodcock walk.

The Occoquan Bay Refuge was inducted into the Chesapeake Bay Gateways Network in 2004. A sign designating this membership was posted at the entry gate and in the main parking lot in 2005 to alert visitors that this site has cultural and natural amenities that greatly contribute to the Chesapeake Bay.

Ranger McClevey presented an evening program in March 2006 on the Woodcock. Sixteen people participated in the program and, in spite of the cold, had a great time. Many were able to view a woodcock for the first time. McClevey recruited Friends' board member Kevin Parker to co-lead a Birding Basics walk and two walks on International Migratory Bird Day. McClevey, Visitor Services Specialist, emphasized to the Friends' organization the importance of the use of a theme and outline in presenting walks the need to keep the walks short in length and duration.

In July of 2006, McClevey provided a tour of the refuge to Laura Lutz, a freelance writer with the Alliance for the Chesapeake Bay. Laura has written numerous articles about sites that are part of the Chesapeake Bay Gateways Network for the Alliance's Bay Journal. She made the visit to obtain information about refuge for an article to be published in the Bay Journal.

8. Hunting

Maintaining and improving the quality of the habitat of the grasslands and wetlands on the refuge and providing optimum conditions for migratory birds by maintaining the whitetail deer population within biological carrying capacity of the habitat is the main goal of the hunting program at Occoquan Bay National Wildlife Refuge (NWR). The Refuge hunting program will serve this goal by reducing the local deer herd through removal of a higher percentage of females and young of the year.



Hunter Swithenbank in Hunt Stand

The Complex partnered with the Virginia Department of Game and Inland Fisheries (VDGIF) to host different opportunities in FY 2005 and FY 2006. In 2005, VDGIF hosted a day of youth hunting and a day of novice hunting. The youth hunt, dubbed by the State as the Generations

Hunt, provides youth age 12 to 16 years with advanced hunter instruction and time on the refuge to test their skill at harvesting deer from a hunt stand. Thirteen hunters with a parent or adult helper participated in the one day hunt in FY2005. Nineteen youth participated in the hunt in FY2006. An additional day of hunting for novice hunters of any age was also hosted by the State in FY2006. The novice hunt was cancelled due to hunter participation. The Generations Hunt was continued and it successfully fosters a partnership with the State to provide youth with the opportunity to take part in a hunt program, while providing the Service with an opportunity to reduce the deer population and provide hunting opportunities on a National Wildlife Refuge.



VDGIF Youth Hunters

In cooperation with the state, the refuge increased the number of days hunting to four and harvested 55 deer in FY 2005 and 51 deer in FY2006 (see Table C).

Table C. Daily Take Percentages for the Combined Shotgun Harvest (2005) and overall take for the four days of hunting at Occoquan Bay.

<u>Date</u>	<u>Does</u>	<u>Bucks (antlered/button)</u>		<u>Totals</u>
12/3/05	11	5	(4/1)	16
12/5/05	4	2	(1/1)	6
12/6/05	10	6	(3/3)	16
12/7/05	13	4	(4/0)	17
TOTALS	38	17	(12/5)	55
2002	% of TAKE	50	50	(42.86/7.14)
2003	% of TAKE	66	34	(28.13/6.25)
2004	% of TAKE	58	42	(36.84/5.26)
2005	% of TAKE	69	31	(21.82/9.09)

Occoquan Bay NWR and VDGIF hosted thirty-six hunters in FY 2005 and 64 hunters in FY2006.

The refuge hosted 2 hunt days in FY2005 and 3 hunt days in FY 2006 to ensure that ample time is provided for deer population control. With the state cancelling the novice hunt in FY2006, there was a recognized need to increase our efforts in deer management. Hunters participating in the Mason Neck Management Hunt were very much interested in the hunting opportunities at Occoquan Bay NWR and it is expected to be a popular hunt for years to come.

9. Fishing

The Fourth and Fifth Annual Youth Fishing Event is held in the month of May at Painted Turtle Pond, a 2-1/2 acre pond on the southwest portion of the refuge. The event targets youth 5-12 years old. Seventy-eight kids participated in the event in FY2005. In addition to the 70 kids, over 100 individuals (parents, family members and visitors) attended the event. The entry gate visitation log indicated that 283 people visited the refuge on the day of the event between 0800 hrs and 1700 hrs. We estimate that 66 kids and approximately 55 individuals (parents, family members and visitors) attended the event in FY2006. Entry gate visitation log indicated 177 people visited the refuge on the day of the event between 0800 and 1700 hrs.



Farther with daughter at fishing event

Event Summary FY 2005:

Volunteers from DIA Rod and Gun Club (8), the Friends organization (1) Boy Scout Troop 888 (3), Trout Unlimited (3) and refuge volunteers (9), assisted with registration, traffic control and monitoring the kids who were fishing. Twenty-six volunteers donated 134.5 hours. Wal*Mart

contributed a \$400.00 gift card to be used for prizes and food. Gander Mountain contributed bobbers, hooks, rods and tackle boxes.

Patricia Wood the volunteer event coordinator arrived around 0640 and began coordinating set up. Volunteers started to arrive around 0800 with the majority checked in between 0830 and 0845. Marty McClevey, Park Ranger, coordinated parking and by 0915 had parked 36 cars. There were over 50 cars at the pond by 1000 hrs.



Gino was very excited about catching this bass

Refuge Volunteers, Barbara Mitchell and Patricia Wood used Polaroid cameras to take photos of the kids as they fished or after they had caught a fish. The Polaroid photos were laid out at the registration table to show off the success of the kids. Each child was given a photo, a certificate for participating in the event and a goody bag filled with a variety of fishing information, bobbers and creel bag. Wal*Mart donated 10 packs of Polaroid film.

Event Summary FY2006:

Volunteers from DIA Rod and Gun Club (10), the Friends Organization (0), US Fish and Wildlife Service (2 - Bob Pos, Carol Pollio), Refuge Volunteers (11), assisted with registration, traffic control, assisting kids with fishing and serving food.

The volunteer sign-in log indicated 23 volunteers donated 121 hours at an average of 5.2 hours per person.

Wal*Mart (local store) contributed a \$400.00 gift card to be used for the purchase of prizes and food.

Worms were purchased at Dawson=s at approximately \$.4.00 per box for a total of \$270.00

Virginia Department of Game and Inland Fisheries contributed fishing guides, creel bags and coloring books: \$93.75

We utilized 26 loaner rods and reels to equip kids and families that did not have fishing gear. Twenty-four of the rods were used during the event. This reinforces the annual task of checking and maintaining workable gear for the event.

The Potomac News posted an announcement for the event on May 15. Reporter Elisa Glushefski and photographer Joe Brier covered the event for almost two hours which resulted in a front page article in the Sunday edition highlighting the kids and volunteers.

Highlights of the Events

One DIA member brought a young boy to the event so that the boy's father could attend the funeral of a fallen police officer in Fairfax County. Two new individuals from the DIA Rod and Gun Club attended the event. Both, brothers, were thrilled to participate and offered to help out next year. The weather was spectacular and though the number of kids was less than last year, the event couldn't have been more fun and relaxing for all.

This event was the kick-off for a pilot fishing program called Fishing for our Future, in which kids were offered the opportunity to sign up for special training and a morning of fishing with a mentor. Two men participated in mentor training hosted by Patricia Wood in April. Six kids from the event were enrolled in the mentor program. This program took place on June 9 and 10, 2006.



Fishing for our Future participants couldn't believe they caught a fish

10. Trapping – Nothing to Report

11. Wildlife Observation

The very nature of the refuge serves to promote wildlife observation. The open grasslands and tidal marshes provide prime viewing of wildlife and waterfowl.

In FY2005, three photography workshops were conducted by volunteer Bill Wallen. Bill is a photographer with Twentieth Century Fox and Nikon Camera. His workshops have provided a basis for the initiation of an annual photography contest while providing and emphasis on wildlife photography.



Baby Great Horned Owl

Two great horned owl nests were found on the refuge in January. The two nest locations provided opportunities for wildlife observation and photography. One nest was found near the banding station and the second was found in a grove of trees at Taylor Point near the intersection of Delta Road and Taylor Point Road. Four young were observed and apparently fledged from the nests.

In FY 2006, to further the ability of the public to view wildlife, the refuge explored the feasibility of constructing a photographic blind either along Deephole Point Road at Catamount Creek or along the Marumsco Creek. Also, interpretive panels at the main parking lot focus on viewable wildlife. One panel which was fabricated through a grant from the Chesapeake Bay

Gateways Network allows the visitor to see a sampling of wildlife during each season of the year.

Although the refuge has been managed for grassland dependent birds, it was a tremendous surprise to the refuge staff and birders throughout the region when a LeConte's sparrow was observed on the site. In early November of 2005, four regular birders to the refuge observed an unusual looking sparrow in the southeast portion of the old military compound along Bayview Road. They discovered the LeConte's sparrow in the tall switchgrass that was planted in 2003 for site rehabilitation.



LeConte's Sparrow at Occoquan Bay

It wasn't long before word spread by way of the Virginia birding listserve to birders through out Virginia, Maryland, Pennsylvania, New Jersey and West Virginia. Soon the refuge was being inundated by birders who seemingly demanded accommodations to view the bird. Photographer Bill Wallen captured the bird on several digital images. For several weeks following, until extreme cold weather set in, the parking lot was filled on weekends and unusually busy during weekdays. This wildlife observation opportunity caused quite a bit of consternation amongst the staff as birders petitioned the biologist and managers for more and more opportunities to view the elusive bird. However, the staff held its ground and only allowed viewing from open portions of the trail along Bayview Road. To monitor the volume of birders and ensure compliance with refuge rules of staying on the trail, staying out of closed areas and not harassing wildlife, volunteers were positioned along the trail. In spite of these control efforts word came back of individuals walking through the tall grass to flush the bird out of hiding. We learned a great deal about handling future "unique" wildlife situations. However it was also evident that even the most reputable birders were prone to unethical behavior.

1. Birders did not feel the responsibility to report this unusual sighting to the Service until it had been posted on the bird listserve.
2. Birders of the highest prominence and reputation felt that viewing the bird took precedence over refuge rules and regulations. Novice birders and "regular" visitors felt that protecting the bird was more important than viewing the bird.
3. Unethical behavior was noted on several occasions. Behavior included: Attempting to lure the bird with calls, walking off the trail, violating closed area restrictions, walking through the grasses to flush the bird and theft of a refuge Closed Area sign. A Harris' sparrow viewed at another site was frequently lured by birders into a viewing area by the

use of seed. This behavior was halted early by making it clear to certain birders that this activity would be dealt with as a violation of the Code of Regulations.

The Occoquan Bay Refuge has a reputation throughout the region as being one of the best wildlife viewing sites in Northern Virginia. The site was included in the Virginia Coastal Birding and Wildlife Trail. A sign, provided by the State of Virginia and posted at the entry gate alerts visitors and travelers of this designation.

12. Other Wildlife Dependent Recreation – Nothing to Report

13. Camping – Nothing to Report

14. Picnicking – Nothing to Report

15. Off-Road Vehicling – Nothing to Report

16. Other Non-Wildlife Dependent Recreation

A request was made to conduct a Volks March on the refuge in June 2005. After much discussion, it was determined that the march was a legitimate means for individuals to hike and observe wildlife. The event was held in June with around 98 participants. No problems were encountered in facilitating this event.

A second annual Volksmarsh was permitted at the Occoquan Refuge in June 2006. Eighty-five individuals participated in the walk and no problems were encountered in facilitating this event.

17. Law Enforcement

A ten foot portion of the chain link fence at the entry gate to the refuge was damaged when an individual fleeing police lost control and crashed. The individual made payment to the refuge to reimburse for damages and the fence was repaired by Long Fence. Other incidents included street racing on Dawson Beach Road and an incident in which an individual smeared blood on the door to the entry booth.

In July 2005, a window to a visitor's car was broken out by burglars. Nothing was taken from the vehicle apparently due to the owner returning to the area at the time of the break-in. A large bag of headless birds (pigeons, chickens and Peking ducks), beans and vegetables, was found along the shore of Belmont Bay by a Refuge volunteer. It was determined that the bag was part of a religious ritual that apparently floated ashore.

During FY 2005, a small bottle of notes, trinkets and other items was found near Painted Turtle Pond in a closed area of the refuge. It was found that the cache was being maintained and accessed by individuals conducting a geocache game. The game is controlled by an internet site in which directions to the cache are given by clues. Once the cache is found by participants they are to take and leave items and notes describing their experience. The cache was promptly removed and further observation of this activity will take place. In FY2006, there was continued vigilance on the refuge to determine if visitors were participating in geo-caching.

During FY2006, in spite of cable gates and Area Closed signs positioned at the end of Fox Road and at Deephole Point to close the area for the protection of the eagle nest, visitors continued to

ignore these fixtures to enter the area and walk the shore. A brochure insert was created to explain the closure and point out alternative routes around the closed trail. Volunteers positioned near the gazebo indicated that the violators would stop at the gate, read the sign, look around and then continue through the gate. This behavior can only be addressed through law enforcement action.

18. Cooperating Associations – Nothing to Report

I. EQUIPMENT AND FACILITIES

1. New Construction

In May, maintenance workers Boska and Revis, along with Volunteer Stef Leon completed the finish work to the ramp at Painted Turtle Pond. The team installed hand rails to the stairway. To prevent erosion and stabilize the site the team installed drain tile, rip rap, and erosion control excelsior material.



New boardwalk to pond platform

2. Rehabilitation

On June 27, 2005, maintenance workers Boska and Revis, along with Eco/Intern Bolden and Stef Leon, began removing the old security fence at the Refuge. From July 11th until July 15th, a 19 person crew from the Virginia State Parks Youth Conservation Corps (YCC) worked at Occoquan Bay NWR. The YCC team removed approximately 4/10th mile of fence. The YCC members removed vegetation from the fence and assisted Refuge maintenance workers with removing the fence. Refuge staff used heavy equipment and powered tools for removing portions of the fence. YCC members used hand tools, i.e., bolt cutters, loppers, and the like. Largely due to the YCC efforts in clearing vegetation and debris from the fence, more than 4.25 tons of fence materials were transferred to a scrap metal recycler. During the entire project, workers removed more than 6/10th mile of the 8 foot high security fence.



State YCC Group and Refuge Staff

In February 2006, maintenance mechanic Boska along with volunteer Paul Dodd removed another portion of the old security fence at the Refuge. Several old fence posts created a hazard to visitors and to wildlife. Approximately 25 fence posts and footings were removed. Refuge staff transported metal debris from the project to a metal recycler.

3. Major Maintenance – Nothing to Report

4. Equipment Utilization and Replacement

In November, the Complex purchased an Alamo Heavy-Duty Tree Cutter. This equipment will be used with the Deere 7200 tractor and control the growth of sweet gums at the Refuge. The tree cutter is capable of cutting brush and trees up to eight inches in diameter.

5. Communication Systems

See Elizabeth Hartwell Mason Neck NWR: I.5 – Communication Systems

6. Computer Systems

See Elizabeth Hartwell Mason Neck NWR: E.7 – Technical Assistance

7. Energy Conservation

The Refuge continued its participation with an aggressive recycling program. The Refuge sent more than 10 tons of trash to recyclers. These materials included used tires, metals, batteries, fluorescent bulbs, plastic, glass, and paper products. In addition the Refuge continued participation with the “closed loop: re-refined oil program. This program permits the purchase of re-refined motor oil and the disposal of used engine oil.

Throughout the year, the Refuge purchased 497 tons of recycled concrete materials for projects road construction, and trail and road repairs

8. Other – Nothing to Report

J. OTHER ITEMS

1. Cooperative Programs – Nothing to Report

2. Other Economical Uses – Nothing to Report

3. Items of Interest

Outdoor Recreation Planner Marty McClevey held a meeting on January 29, 2005 to discuss the proposal to move the two 17th century gravestones located near Taylor Point. The plan called for a cooperative effort between the refuge and Prince William County’s Historic Preservation Division. The stones, which do not mark actual graves, would be moved from the refuge to the historic Rippon Lodge, a historic home in Woodbridge. The two stones, one scribed for Martin Scarlet and the other for his son, have deteriorated significantly over the course of 316 years and are in need of protection from the elements. It was agreed upon by Brendon Hanafin, Chief of the Prince William Historic Preservation Division, John S. Wilson, Chief Archeologist for Region 5 and Outdoor Recreation Planner Marty McClevey, that the stones needed to be protected from further deterioration. The decision to remove the stones came when it was determined that moisture entering cracks in the face of the sandstone memorials was causing flaking of the face due to freezing and thawing. The Martin Scarlet stone was virtually unreadable. Historical information indicates the stones had been found discarded in the river prior to 1906, recovered and moved to the area of Dawson Beach (along the river at the end of the modern Charlie Road). The stone for Scarlet’s son is a table stone. At the time of burial, the stone would have been placed over the top of the grave, supported by 4 to 6 stone legs. This stone was replaced at the Dawson Beach site in an upright position as in the manner of a conventional gravestone lending credence to the fact that the stone had been moved over time. The stone of Martin Scarlet is estimated to weigh between 1000 and 2000 pounds. If the stones were located on the graves of these two individuals, other means of preserving them would have been utilized to allow the stones to remain at their current locations. The stones were measured and photographed during the preparation process and the Regional cultural resources staff was kept abreast of the actions. Working with the Preservation staff and Arban and Carosi, Inc, a precast concrete firm near the refuge, an extensive plan for excavating, covering, crating, hoisting and transporting was developed. On February 12, Marty McClevey and volunteer Christine Brindza measured the stones. Volunteer photographer Bill Wallen and Kathy O’Brien photographed the stones. On June 22, 2005, the above ground portions of the stones were

covered with foam blue board and framed in plywood. This work was coordinated by carpenters from Prince William County's preservation staff. Outriggers were attached to the stones to prevent movement during the excavation process.



Refuge Manager Weiler assisting with removal



Arbon & Carosi workers

For about 5 days, refuge staff and volunteers carefully excavated each stone. All soil material was screened for artifacts. After the stones were excavated to their base, the preservation staff returned to complete the framing of each stone. Marty McClevey worked with Elaine Fink, public relations specialist for Prince William County to coordinate and plan the day for media to be invited to observe the final hoisting and transport. On August 5, the stones were hoisted onto refuge trucks and transported with police escort to the Rippon Lodge. The entire refuge staff participated. Articles were posted in the Washington Post, the Potomac News and Lorton newspapers. The stones will remain on the grounds of the Rippon Lodge until they can be moved to an interior storage site.

Volunteer Christine Brindza assisted Marty McClevey in inventorying the museum property for the refuges of the Complex. Concerns were expressed by Regional Museum Property Specialist Shelley Hight that there were errors in past museum property reports. A complete accounting of the artifacts was completed by McClevey and an updated report was sent to Region. Shelley expressed further concern about a collection of Army artifacts being held by the refuge. No documentation can be found indicating an official transfer of the items to the refuge. It is hoped that this dilemma will be reconciled in FY 2006.

In FY2005, Manager Greg Weiler and Outdoor Recreation Planner Marty McClevey attended a meeting on the Potomac Heritage Trail at Prince William Forest Park. Discussions related to creating a symbol to be used to guide hikers through each political jurisdiction.

In FY2006, Visitor Services Specialist Marty McClevey obtained a State of Virginia Certified Pesticide Applicator's license by passing the State examination March 17, 2006. A general licensing was obtained along with certification in the category of Forestry. This certification enabled the refuge to move forward with a Pesticide Use Plan and begin the eradication of specific invasive-exotic plants as Japanese knotweed and mile-a-minute weed. McClevey conducted spraying at several locations on the refuge. Almost one acre of knotweed had become

established at the homesite with a large growth of mile-a minute. This plot was sprayed in April and May with glypho-kill. Because of the extensiveness of the colony and the late timing of the applications, the knotweed was not eradicated. This site will be treated in March of 2007. Other smaller colonies around the refuge were treated with similar results. Mile-a-minute was found at several new locations and is a weed of great concern. This plant will be targeted in 2007. Marty spent a great deal of time researching and ordering pesticide application spray equipment, personal protective gear and herbicide.

Prince William County's Mosquito Control placed mosquito traps at various locations around the refuge. A trap was placed at Painted Turtle Pond, on the Wildlife Drive at Lake Eva and at Deephole Point. Mosquitoes carrying West Nile Virus were found in each trap. This was not a surprise to the Refuge. However, the County required that the visitors be warned of the findings and advised to take precautions against mosquito bites. We complied by posting a notice at the front gate and providing inserts to the refuge brochure with warnings and precautionary steps to take. In September of 2006 the County decided to conduct aerial spray operations around the refuge to introduce a mosquito larvicide into waterways and marshes. The County was not permitted to conduct the application on the refuge.



Prince William County mosquito control contractor

Ranger McClevey observed a coyote on Fox Road in early February of 2006. The presence of coyotes in the region was well known and Biologist Joe Witt had believed he had seen one in previous years, but this was the first confirmed sighting on the refuge. Since the sighting, unusual dog-like scat has been observed on the entry road and along Fox Road. Though the scat has not been thoroughly examined, and analyzed for content, reasonable assumptions indicate that this is scat from a coyote that is marking a particular territory within the refuge.

4. Credits

Everyone on the staff contributed to the writing of this report. Manager Weiler reviewed and signed it. Refuge Staff and Refuge Volunteer Bill Wallen contributed the pictures.

K. FEEDBACK – Nothing to Report

FEATHERSTONE NATIONAL WILDLIFE REFUGE
Woodbridge, Virginia

INTRODUCTION

Featherstone National Wildlife Refuge is an unmanned station and is located 4 miles southwest of Mason Neck at the mouth of Neabsco Creek where it joins the Potomac River. The refuge is approximately 22 miles from Washington, D.C., in Prince William County, Virginia.

Acquired in 1979 from the District of Columbia, Featherstone NWR was originally proposed to be one of a 17 unit Potomac Estuary National Wildlife Refuge Complex. No additional Federal acquisitions were made after this plan was proposed in 1970 except Marumsco NWR until 1998. The additional land was added to Marumsco NWR, creating Occoquan Bay NWR. This addition changed Elizabeth Hartwell Mason Neck National Wildlife Refuge and its satellites (Featherstone and Marumsco NWR) into a complex.

Featherstone NWR contains 325 acres of woodland and freshwater tidal marsh along the northern shore and mouth of Neabsco Creek and north around Featherstone Point along Occoquan Bay. Topography is almost entirely flat on the east side with patches of bottom land hardwoods and tidal marsh. The Richmond, Fredericksburg and Potomac Railroad bisects the Refuge from north to south with built up elevations of 80 feet separating the east from the west with its series of sharply incised peninsulas. An abandoned railroad grade also traverses the Refuge, impacting the refuge with the compacted roadbed, castoff slag and coal from early train use, and channeling some of the drainage into vernal pools and swamps. Farm Creek passes through the northeastern portion of the Refuge before draining into Occoquan Bay and the Potomac River.

Official access is by two meandering right-of-ways, neither of which is accessible to vehicles. The staff utilize the commuter rail station built next to the refuge as a way to cross the tracks and gain quicker access to the refuge as an improvement of when they use to walk the tracks to get to the refuge without having to cross creeks and vernal unauthorized activity does occur. Refuge staff have received various reports of illegal hunting, trapping, and camping. Staff visits have been able to confirm presence of such activity but not the level due to poor accessibility and limited staff time.

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A. HIGHLIGHTS



B. CLIMATIC CONDITIONS

See Elizabeth Hartwell Mason Neck NWR for details.

C. LAND ACQUISITION

1. Fee Title – Nothing to Report
2. Easements – Nothing to Report
3. Other – Nothing to Report

D. PLANNING

1. Master Plan – Nothing to Report
2. Management Plan – Nothing to Report

3. Public Participation – Nothing to Report
4. Compliance with Environmental Mandates – Nothing to Report
5. Research and Investigations – Nothing to Report
6. Other – Nothing to Report

E. ADMINISTRATION

1. Personnel

See Elizabeth Hartwell Mason Neck NWR

2. Youth Programs – Nothing to Report
3. Other Manpower Programs – Nothing to Report
4. Volunteer Program – Nothing to Report
5. Funding – Nothing to Report
6. Safety – Nothing to Report
7. Technically Assistance – Nothing to Report
8. Other Items – Nothing to Report

F. HABITAT MANAGEMENT

1. General

Featherstone Refuge presently consists of 325 acres of which 80 acres are forested upland, 220 acres are palustrine wetland, and 25 acres are open water. This area is a tidally influence freshwater wetland. The portions of “Hidden Lake”, the main portion of Farm Creek running through the refuge was at one time diked, presumably for fisheries management in the late 1800's or early 1900's. This dike has deteriorated to a few pilings in the water and short earthen section that is no barrier to water, wildlife, or boaters.

2. Wetlands

The forested wetland sections of the refuge are comprised of red maple, sweetgum, yellow poplar and water willow. Emergent marsh is located mainly on the southern section of the property.

3. Forests

The pockets of upland forest scattered throughout the refuge are at or near climax stage and are comprised mostly of mixed oak species with Virginia and loblolly pine. In most areas there is

little ground cover. Areas bordering Neabsco Creek consist of steep slopes with an understory of mountain laurel.

4. Croplands – Nothing to Report
5. Grasslands – Nothing to Report
6. Other Habitats – Nothing to Report
7. Grazing – Nothing to Report
8. Haying – Nothing to Report
9. Fire Management – Nothing to Report
10. Pest Control – Nothing to Report
11. Water Rights – Nothing to Report
12. Wilderness and Special Areas – Nothing to Report
13. WPA Easement Monitoring – Nothing to Report

G. WILDLIFE

1. Wildlife Diversity

The refuge provides important wintering and nesting habitat for waterfowl, wading birds and shorebirds. Wintering and migrating waterfowl include black duck, mallard, blue-winged teal, wood duck, hooded merganser, green-winged teal, gadwall, and lesser scaup. The dense and diverse marsh vegetation attracts many wading birds including great blue heron, great egret and double-crested cormorants. Osprey, red-tailed and red shouldered hawks, northern harrier, kestrel, and Cooper's hawks have all used the Refuge.

2. Endangered and/or Threatened Species

Bald eagles are frequently observed using the refuge. The shoreline provides important feeding and perching habitat. The pair that nested on Featherstone initially nested in the swamp area between the railroad tracks and the river just above the mouth of Neabsco Creek. They moved the next year to a chestnut oak on the third peninsula in from the railroad bridge, and after three years moved west, possibly onto the neighboring developer's land and then back out to near the first site. Their last several locations were not productive and their current status is unknown.

3. Waterfowl – Nothing to Report

4. Marsh and Water Birds

Great blue herons are commonly seen on Featherstone Refuge. Other birds in this group which utilize the refuge include egrets and double-crested cormorants.

5. Shorebirds, gulls, Terns, and Allied Species

Due to the dense vegetation, mostly forest, the most likely places to observe species in this group is just off the refuge in the waters of the Occoquan Bay and Potomac River. Mudflats exposed at low tide are high in fine sediments and anaerobic, producing little vegetation or fauna to attract birds for feeding and unattractive for loafing.

6. Raptors

Osprey, red-tailed and red-shouldered hawks, northern harrier, kestrel, and Coopers hawks have been recorded on the refuge.

7. Other Migratory Birds

A special use permit was issued for both fiscal years to a concerned citizen wanting to install and maintain nest boxes on the refuge due to the closeness in proximity to other locations/properties where he already had nest boxes up and in use.

8. Game Mammals

White-tailed deer, red fox, raccoon, gray squirrel, and beaver all use the refuge.

9. Marine Mammals – Nothing to Report

10. Other Resident Wildlife – Nothing to Report

11. Fisheries Resources – Nothing to Report

12. Wildlife Propagation and Stocking – Nothing to Report

13. Surplus Animal Disposal – Nothing to Report

14. Scientific Collections – Nothing to Report

15. Animal Control – Nothing to Report

16. Marking and Banding – Nothing to Report

17. Disease Prevention and Control – Nothing to Report

H. PUBLIC USE

1. General

The refuge is closed to all public use. The Virginia Commuter Rail Service has a rail station along the edge of the property. This may create an opportunity for the Refuge to be in the public eye without being overrun by non-wildlife dependent uses. Refuge staff will cooperate with the rail station to construct some information panels as funding and staffing permits.

2. Outdoor Classrooms – Students – Nothing to Report
3. Outdoor Classrooms – Teachers – Nothing to Report
4. Interpretive Foot Trails – Nothing to Report
5. Interpretive Tour Routes – Nothing to Report
6. Interpretive Exhibits and Demonstrations – Nothing to Report
7. Other Interpretive Programs – Nothing to Report
8. Hunting – Nothing to Report
9. Fishing – Nothing to Report
10. Trapping – Nothing to Report
11. Wildlife Observation

Prince William Conservation Allison hosted a scenic walk through the interior of the refuge for a group of 30 two times in FY 2006. The group hoped to highlight the refuge and discuss access issues with the participants. It was a very popular walk and the Alliance plans to apply for special use permits in the coming years due to the popularity of the program.

12. Other Wildlife Oriented Recreation – Nothing to Report
13. Camping – Nothing to Report
14. Picnicking – Nothing to Report
15. Off-Road Vehicling – Nothing to Report
16. Other Non-Wildlife Oriented Recreation – Nothing to Report
17. Law Enforcement

In June 2005, Maintenance Worker Revis and Eco/Intern Bolden posted signs at the Refuge. Trespass and other illegal activity continue to be a problem. Eco/Intern Bolden stands on a “well traveled path” leading into the Refuge.



Eco Intern associated with NWR boundary signs

18. Cooperating Associations – Nothing to Report

I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to Report
2. Rehabilitation – Nothing to Report
3. Major Maintenance – Nothing to Report
4. Equipment Utilization and Replacement – Nothing to Report
5. Communication Systems – Nothing to Report
6. Computer Systems

See Elizabeth Hartwell Mason Neck NWR: E.7 – Technical Assistance

7. Energy Conservation – Nothing to Report
8. Other – Nothing to Report

J. OTHER ITEMS

1. Cooperative Programs – Nothing to Report
2. Other Economic Uses – Nothing to Report
3. Items of Interest

In 2006, Prince William County approved a proposal to place 550 housing units on 10 acres of land next to the refuge. The project is for high rise condominiums above parking garages. When completed, the refuge will be completely hemmed in by residential and commercial development.

4. Credits

Everyone on the staff contributed to the writing of this report. Manager Weiler reviewed and signed it. Refuge Staff and Refuge Volunteer Bill Wallen contributed the pictures.

K. FEEDBACK – Nothing to Report