OHIO RIVER ISLANDS
NATIONAL WILDLIFE REFUGE

ANNUAL NARRATIVE
FISCAL YEAR 2000

Ohio River Islands National Wildlife Refuge
Annual Narrative

Parkersburg, West Virginia
Fiscal Year 2000

Jerry L. Wilson 10/15/2001

Jerry L. Wilson, Refuge Manager **Date**

Andrew C. Trumbo 10-16-01

Refuge Supervisor, National Wildlife Refuge System **Date**

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HIGHLIGHTS

- After a year of delays, a new full-color refuge primary brochure is printed.
- Volunteers plant over 3000 trees as part of bottomland forest restoration on the refuge.
- West Virginia Public Televison produces two broadcast segments, one a general introduction to the refuge and the other on refuge wildlife.
- Ohio Public Television visits the refuge to produce a broadcast segment on the zebra mussel problem in the Ohio River.
- The refuge partners with the Marietta Natural History Society to develop and place an Ohio River wildlife values interpretive sign in Marietta, OH.
- A Boy Scout completes a seed bed project on the refuge as part of his Eagle Scout requirements.
- Following 18 public meetings and three workshops, the refuge completed a draft of its CCP.
- The refuge conducted 11 mussel surveys in the Ohio River Valley Ecosystem (four on-refuge and seven off-refuge) and assisted ecosystem partners in KY, PA, WV, and IN.
- Ospreys, which were re-introduced into the Ohio River Valley in the late 1980's, are now nesting on Neal Island, above Sandy Creek, on Grandview Island, and above Rayland, OH.
- A large fish and mussel kill occurred in June and October of 1999, resulting in a 10 to 30 mile long "dead zone" in the Ohio River below a suspected discharger near Marietta, OH. Two federally listed mussel species occurred in the dead zone. Refuge staff collected fish and mussel samples, took videotape of the bottom, searched for dead endangered species, and assisted federal law enforcement officials. The investigation continues.
- Biologist Morrison was appointed to the Service's new Diving Control Board as Region 5's Regional Diving Officer.
- 52 acres of bottomland hardwoods were restored on Neal, Middle and Broadback Islands.
- 4.5 miles of riparian floodplain habitat were restored along refuge islands
- Over 200 acres were treated for multi-flora rose, japanese knotweed and mile-a-minute.

- Refuge staff assisted the Elkins FO on a Partners For Wildlife project protecting riparian habitat along Middle Island Creek.

- Refuge finally filled it's first maintenance position

- Refuge staff along with help from Canaan Valley staff and volunteers poured 40 yards of concrete to put a floor in the Middle Island Shop facility.

- Refuge opened an additional 355 acres to hunting.

- Refuge receives $400,000 Land and Water Conservation Funds for FY 2000 (Resource Protection - 6H).

- Refuge purchases Neal Island, Captina Island and Captina Mainland properties (6h).

- Refuge Manager serves as Acting Project Leader at Prime Hook NWR from August - December.

INTRODUCTION

Established in 1990, the Ohio River Islands NWR became the first national wildlife refuge in West Virginia. There are now refuges in all 50 states. The refuge currently consists of all or parts of 21 islands in the Ohio River and three mainland tracts, comprising 3,221 acres of terrestrial and aquatic habitat. As acquisition progresses, the refuge may include up to 35 Ohio River islands. The acquisition boundary stretches nearly 400 river miles from Shippingport, Pennsylvania to Manchester, Ohio and includes four states (PA, OH, WV, KY).

The geologic origin of this unique chain of islands has given them a relatively stable gravel base that has resisted natural erosion forces since the Wisconsin glacier receded 12,000 years ago. The natural character of some islands has been exploited by recent human activity but many are still relatively undisturbed.

The Ohio River islands and their back channels have long been recognized for high quality fish and wildlife, recreation, scientific, and natural heritage values. These areas provide some of the region's highest quality riverine, wetland, and bottomland habitats, and are used by waterfowl, shorebirds, songbirds, warmwater fish, and freshwater mussels. The refuge has potential to protect 5,800 acres of bottomland and wetland habitats.

Refuge management concentrates on increasing the diversity and productivity of the fish and wildlife populations characteristic of the Ohio River Valley. Although some early successional vegetation stages are present, natural succession and active reforestation are being encouraged to benefit wildlife species adapted to the mature forest floodplain and associated wetland and riverine habitats.

Many types of public uses occur on and around the Ohio River islands. The relatively undisturbed nature of many of the islands make them popular spots for nature study, fishing, hunting, and pleasure boating.

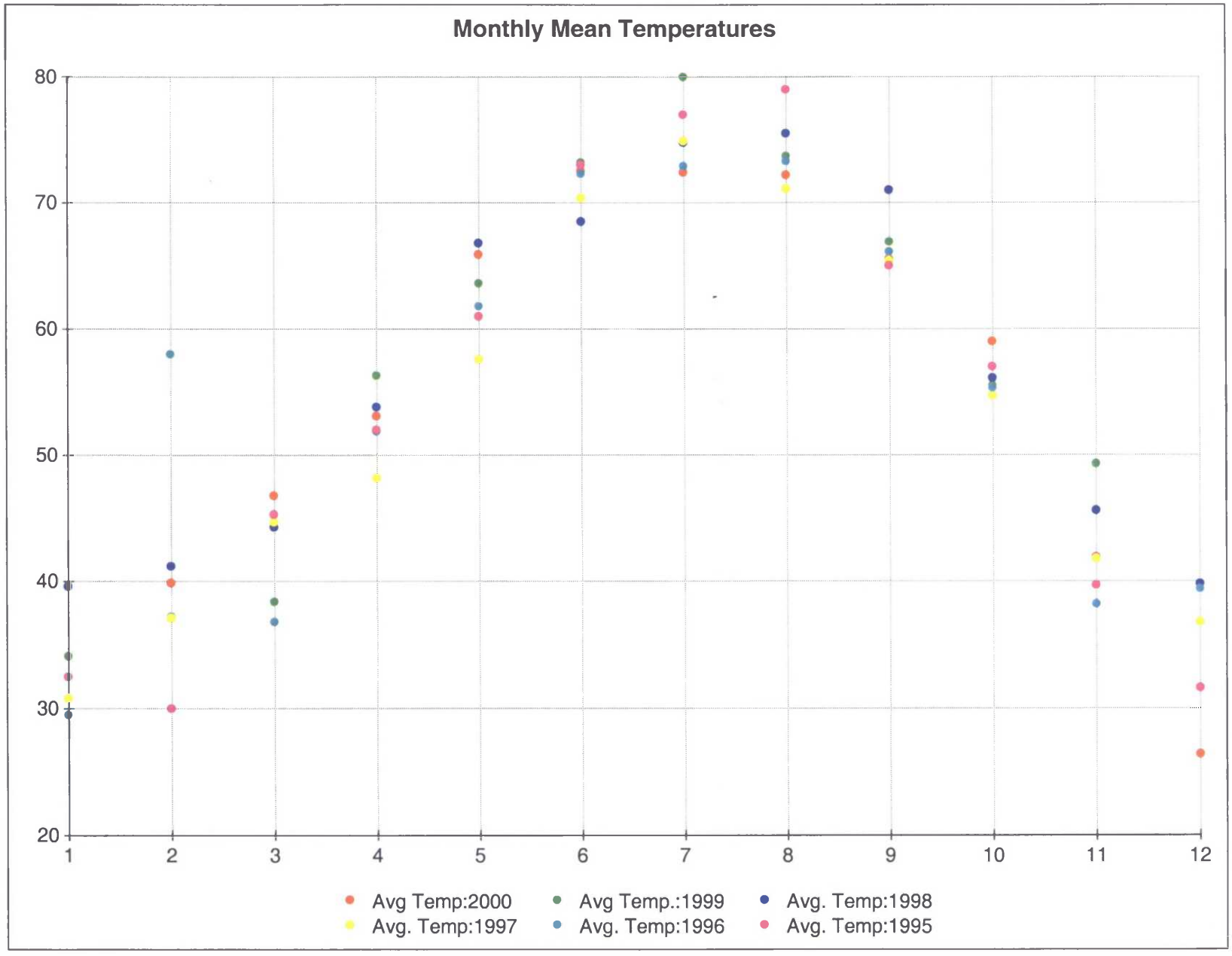
As land acquisition and planning has progressed, the refuge has developed a public use program which includes such activities as educational workshops, interpretive programs, wildlife exhibits, hunting and fishing programs, and day-use recreational opportunities. These and other wildlife-dependent recreational and educational opportunities benefit school groups of all ages as well as local residents and visitors.

An Historic Perspective on the Ohio River Islands

Prior to 1900, there were 124 islands scattered along the 981-mile length of the Ohio River, comprising approximately 25,300 acres. Since that benchmark in time, 31 islands have been lost completely, and 11,000 acres of wetland and terrestrial habitat have disappeared. What remains today are 93 islands and 14,300 acres. Interestingly, of the 31 islands lost completely, 20 of those were lost from the upper 300 miles of the Ohio River - the same reach which contains the refuge islands. Overall, 43% of the historic island acreage is gone, primarily due to impoundment for navigation, dam construction itself (many of the high lift dams were built on islands), and dredging.

Climate Data

Calendar year 2000 brought generally cooler temperatures to the Ohio River Valley (annual range -2° to 93° F) with total rainfall of 38.52" and snowfall of 10.2" (see Figures 1 and 2). There were only eight days where the temperature was 90°F or above, and six of those were in June. The timing of rain in the summer months was such that the refuge had to postpone or cancel many aquatic surveys. Water levels stayed above normal pool for a substantial part of the summer, which interfered with shoreline planting work. There was no recorded rain at all in October. December had the lowest average temperatures in almost 20 years of record.


Monthly Mean Temperatures
80
70
60
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40
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20
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2
3
4
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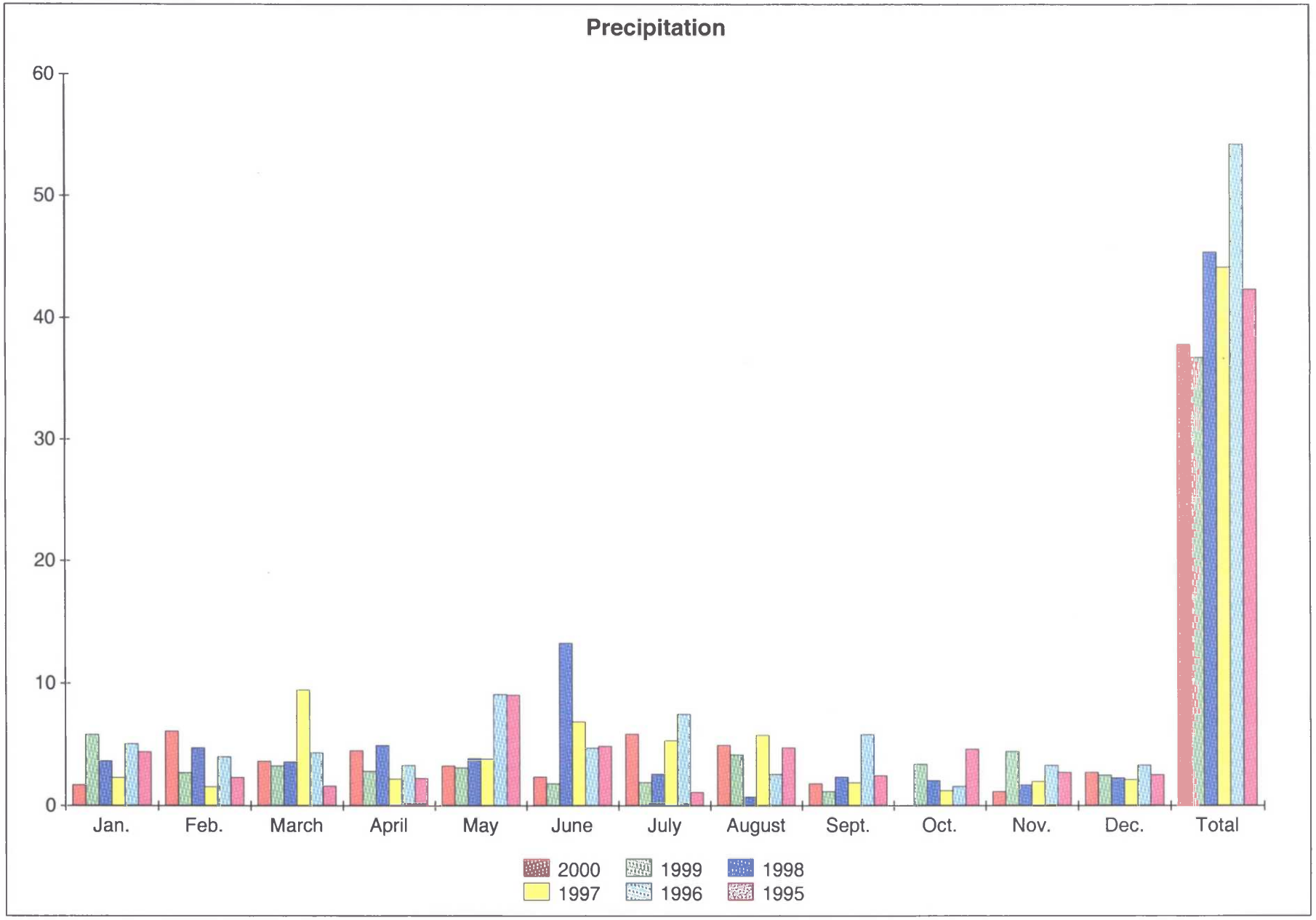
9
10
11
12
Avg Temp:2000
Avg Temp.:1999
Avg. Temp:1998
Avg. Temp:1997
Avg. Temp:1996
Avg. Temp:1995

Figure 1.


Precipitation
60
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1997
1996
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Figure 7.

1. MONITORING AND STUDIES

1a. Surveys and Censuses

The refuge has been monitoring great blue heron rookeries on the islands since 1992 (Table 1). The number of active heron nests peaked in 1994 with 292, followed by a low of 174 in 1995 due to extensive storm damage. The annual average number of active nests is 227, and the 2000 nest count was 187, down 11 active nests since 1999. Since 1992, there have been 93 different trees used at some point by herons, and the annual number of trees in active use ranged from 33 to 50. Tree species are not all equal in their use by herons. Cottonwoods and sycamores have a higher mean number of active nests per tree (4.7 and 4.2, respectively) than the more abundant silver maples (1.9 active nests per tree). The silver maples shed branches and drop major limbs often,and do not have the horizontal spreading of the cottonwood and sycamore. From a habitat management standpoint, in order to maintain or increase use by colonial nesting birds, the refuge should plant more cottonwood and sycamore, and structurally similar species like swamp white oak.

Heron rookeries within the refuge acquisition area were confined to Grape and Fish Creek Islands until 1997, when great blue herons began to nest on Muskingum Island; then in 1999, herons began to nest on Wells Island (Table 2). There was a noticeable decline in active nests on Fish Creek Island (non-refuge owned) in 2000, but not all due to tree or limb loss. One tree appears to be down in the water, and our of the other heron nest trees around the channel side perimeter were abandoned. One plausible reason is the presence of a major new "campsite" which has been established since 1999. Whoever is using the campsite has cleared vegetation, damaged habitat, and dragged a great deal of equipment and junk out to the site on the island. This level of human activity during the nesting season may have led to the abandonment of the trees nearby.

Table 1 - Great Blue Heron Nest Activity and Estimated Production

Survey Year	# of trees actively used	# active nests	Estimated # young produced
1992	45	245	514
1993	46	276	580
1994	50	292	613
1995	33	174	365
1996	41	223	468
1997	43	218	458
1998	inc.	inc.	inc.
1999	46	198	416
2000	35	187	393

Table 2 - Active Heron Nests by Island Rookery

YEAR	FISH CREEK	GRAPE	MUSKINGUM	WELLS
1992	140	105	0	0
1993	150	126	0	0
1994	169	123	0	0
1995	106	68	0	0
1996	131	92	0	0
1997	115	102	1	0
1998	(ND)	85	4	0
1999	125	67	5	1
2000	113	68	4	2

Ospreys continue to nest on the transmission tower at the lower end of Neal Island and on the drill stem tower at the toe of Grandview Island (Tables 3 and 4). The nest structure

on Neal Island blew down twice during the spring season, and the birds eventually gave up. The top of the tower has large openings which make it difficult for the birds to make a solid, secure nest. The refuge had baskets fabricated by a local metal shop for the City of Parkersburg to place atop the tower by the spring of 2001. There is also a tower on the mainland across from Neal Island, which has shown some nest building activity, but no successful nest has yet been completed. There was a nest attempt by another pair of osprey on another tower above Belleville Dam, but the nest was abandoned before completion. Another pair of osprey nested successfully on a transmission tower upstream of Sandy Creek, WV (fledged 1 young) and above Rayland, OH (fledged 3 young).

The pair at Grandview Island began a nest in August of 1999, but they were too late to be successful. However, they returned in April of 2000 and raised one young. The refuge closed Grandview Island until the young bird fledged, and received generally good compliance and understanding by the members of the public who wanted to recreate there.

Table 3 - History of Osprey Nesting on Neal Island

Year	# Hatched	# Fledged
1995	0	0
1996	3	3
1997	3	3
1998	2	1
1999	2	1
2000	0	0

Table 4 - History of Osprey Nesting on Grandview Island

Year	# Hatched	# Fledged
1999	0	0
2000	2	1

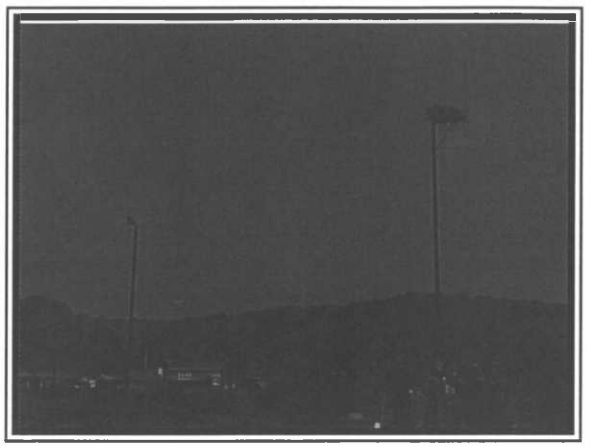


Figure 3. Successful osprey nest on toe of Grandview Island atop plugged oil well.

The refuge biologist and a seasonal technician completed the fifth year of neotropical breeding bird point counts on the refuge, and the second year of grassland bird surveys on Middle Island. To date, 80 species of birds are documented as nesting on the refuge. The most abundant nesters are gray catbird, wood thrush, American redstart, yellow warbler, Northern cardinal, song sparrow, and rufous-sided towhee. For the sixth year in a row, adult bald eagles were seen in the upper Willow Island pool during the breeding bird surveys. There has not yet been a confirmed nest.

Refuge Biologist Morrison and Office Assistant Bloomer conducted the 2000 Mid-Winter Bald Eagle Survey on January 6, 2000 and recorded one adult on Broadback Island in the Willow Island pool.

The refuge also participated in the Christmas Bird count (Parkersburg, WV circle), and International Migratory Bird Day surveys in Wood and Pleasants County, WV. Frog and toad call count points were established in 1999 under contract with West Virginia University, and surveys in 2000 revealed northern spring peepers, gray treefrog, American toad and bullfrog calling on the refuge.

Significant effort was expended in conducting freshwater mussel surveys in 2000 - eight zebra mussel assessment surveys, two surveys in the Allegheny River for PA DEP and USGS, and one site which is the subject of an investigation into a discharge which killed over 4 miles of the Ohio River.

Zebra mussel monitoring in 2000 revealed an unusual pattern - those sites surveyed before August 1 showed no recruitment of new zebras, but significant survival of older zebra mussels from previous years. In contrast, surveys conducted in September and October showed a virtual disappearance of adult zebra mussels throughout the monitoring

network (RM 175 to 814), and very little recruitment of new zebra mussels. The low recruitment may be attributable to higher than normal flows in the Ohio River throughout most of the summer, which would flush the veligers downstream without their settling out. But the reasons for the large scale decline of adult zebra mussels is not yet known. Unfortunately, even though the zebra mussels have "boomed" and then "crashed" more then once over the past six years, the native mussels continue to decline throughout.

The refuge dive team assisted The Pennsylvania DEP and State College ES office in verifying/refuting dredging contractor data and identifying important mussel populations in the Allegheny River. New populations of the endangered northern riffleshell were found in pools 8 and 9 of the Allegheny River.

1b. Studies and Investigations

Refuge staff spent significant time and effort investigating the cause and effects of a large fish kill in the Ohio River below Marietta, OH, and adjacent to the Muskingum Island unit of the refuge. The fish kill occurred in early June of 1999, and at that time refuge divers confirmed that there was no noticeable effect on mussels inhabiting the refuge, or known mussel beds downstream of the suspected discharge. However, by September 1999, over 4 miles of mussels had died along the Ohio side of the river. Refuge staff worked with the WVDNR, USEPA, Ohio EPA, Service Law Enforcement and Ecological Services personnel, USGS, ORSANCO, Solicitor's offices, and various university and research institutions to determine what happened and how. Then, in October 1999, another fish kill occurred, and natural resource damage assessment continues to this day. Refuge staff assisted contractors in May 2000 in assessing the damage to just one mussel bed below the suspected discharger, and they found nearly 100% mortality. The estimated number of dead mussels is approximately 1,000,000, and up to 12,000,000 dead snails.

West Virginia University researchers are conducting a cavity nesting bird study on the refuge, comparing the use of natural vs. artificial cavities.

2. HABITAT RESTORATION

2a. Wetland Restoration: On-Refuge

A total of 57 acres of bottomland hardwoods were planted on Neal, Middle and Broadback Islands through the efforts of refuge staff and volunteers in 2000. Approximately 4.5 miles of shoreline were planted to help reduce shoreline erosion and add critical riparian edge habitat. The planting consisted of water willow (Justicia americana), black willow (Salix nigra) and silky dogwood (Cornus amomum). Plantings appeared to be very successful except in areas of high public use where the people removed the cuttings because it hindered their beach use. Outreach was used to educate the people on the need for this project but large areas of planting still suffered, especially

on Paden Island.

3. HABITAT MANAGEMENT

3g. Control Pest Plants

Refuge staff and volunteers conducted control measures on over 200 acres of Japanese knotweed (Polygonum cuspidatum), mile-a-minute (Polygonum perfoliatum) and multi-flora rose (Rosa multiflora) with glyphosate herbicides.

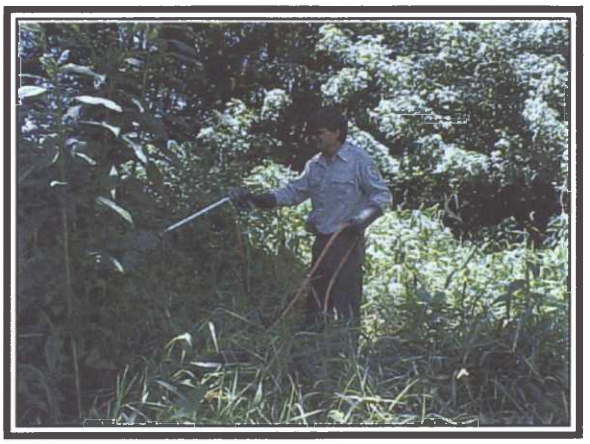


Figure 4. Exotic plant control with biotechs at work.

4. FISH AND WILDLIFE MANAGEMENT

4a. Bird banding

No ducks were banded in 2000.

4d. Provide nest structures

During 1999, refuge staff evaluated the effectiveness of the prothonotary warbler nest box program that was begun in 1996. After three years of use in the field, only 2 of 64 boxes were actually used by prothonotary warblers, and 10 were lost due to flooding. Other species using the boxes included house wren (dominant), Carolina wren, tufted titmouse, Carolina chickadee, mice, and wasps. The boxes were taken down, and only 10 have been re-deployed on the Manchester Islands and Middle Island for educational purposes.

Local Girl Scouts erected six bluebird boxes on Middle Island in 1997, but none of them were used by bluebirds in 2000. Inhabitants include tree swallows and occasional wasps. There has not been a problem with non-desirable birds (house sparrows, starlings, etc.), and those boxes with mesh tops were not bothered by wasps. The Pleasants County Middle School also erected other kinds of boxes along the Middle Island wildlife trail - for owls, woodpeckers, butterflies and bats.

During 1999, refuge staff deployed 46 wood duck nest boxes on three island units. In 2000, five of the wood duck boxes were removed to accommodate a WVU study, but of those remaining, five of the boxes were used by wood ducks, and an average of 8 ducklings hatched per box.

Figure 5. Eastern screech owls use the wood duck boxes too.

5. COORDINATION ACTIVITIES

5a. Interagency Coordination

Refuge staff are heavily involved in the work of the Ohio River Valley Ecosystem. Four of the five full time staff are members of the team and its various working sub-groups (wetlands, riverine and riparian habitat; freshwater mollusks; outreach; and land conservation). Deputy Refuge Manager Cox also served as the ORVE Team Leader.

Figure 6. Ohio River Valley Ecosystem Team field trip to Muskingum Island.

Biologist Morrison participates on the Ohio River Mainstem Navigation Study and Environmental Restoration Team. The team meets three times a year, and has developed an historic perspective and template for an environmental restoration program for the entire Ohio River. High on the list of projects is protection, stabilization and restoration of bottomland hardwood, riparian, wetland, and island habitat.

Biologist Morrison, representing the Refuges and Wildlife Program within the ORVE, sits on a panel that reviews project proposals competing for funding from the National Freshwater Mussel Conservation Fund, administered by the Fish and Wildlife Foundation. Monies in the fund came from a settlement agreement with a commercial shell company for alleged violations of federal laws. A total of $1.0 million will be available to support research and conservation of native freshwater mussels. During FY 2000, 6 projects were funded (out of 63 submitted) for a total of $233,000. A second call for proposals was issued for FY 2001.

The refuge continues to chair and participate in the Mile-a-Minute Task Force, tracking the spread of this invasive exotic plant and testing control techniques on-refuge. Partners include federal, state, local and private land managers and resource agencies who share a concern about the species and its impacts on native habitat.

The refuge, working under and MOU with the Huntington District of the U. S. Army Corps of Engineers, utilized flood damage dollars to fund a study to evaluate and develop the need for "erosion control" measures on islands located within the Ohio River Islands National Wildlife Refuge. Michael Spoor, from the Geotechnical Branch of the Huntington District, U. S. Army Corps of Engineers, was scheduled to complete the study by October 2000. However, due to funding short falls, the study is now scheduled to be completed by July 2001.

5c. Private Land Activities

Refuge staff asssisted the Elkins FO on the Middle Island Creek initiative in 2000. The Service is partnered with the NRCS in improving the water quality in Middle Island Creek. The Service through the Partners for Fish and Wildlife Program will perform riparian restoration, fencing and wetland restoration and the NRCS provides technical and financial assistance on feedlot management, animal waste management and erosion control practices. In 2000 over 5000 feet of fence was constructed to exclude cattle from the stream.

6. RESOURCE PROTECTION

6a. Law Enforcement

A total of 8 Notice of Violations were issued, most concerned with hunting. Waterfowl hunting is becoming increasingly popular but, with a lack of education about the sport, many new hunters are making mistakes. Artifact collecting is popular in the Ohio Valley and relatively easy due to the rich archeological history and erosion from the river which constantly exposes these resources. One ARPA violation was written in 2000 and the fine was paid.

6c. Management Permits and Economic Uses

A lease agreement is in effect with the St. Marys Refinery for sale of water from five wells located on Middle Island. The refinery is responsible for providing 50 tons of gravel each year for the refuge road and $4,000 for cost of water. Approximately six more years are left on the lease agreement.

6d. Contaminant Investigation and Cleanup

Triad Resources sold their existing oil and gas lease on Middle Island to the Service. This involved plugging seven oil/gas wells and removing all the equipment associated with their oil/gas operation on the island. Total cost was $352,380.

The Service purchased 87.28 acres of Neal Island from Buzzie Dils. The plugging of four operating oil/gas wells and the removal of all the associated machinery used in the production of oil/gas resources was included in the price. Total cost was $269,917.

The Service purchased 159.689 acres, consisting of Captina Island (17± acres) and two associated mainland tracts. This property had an abandoned coal mine with remnants of the operation and slag piles. Upon a Level II contaminant review by the Elkins Ecological Service Office it was determined leaching from single slag piles was creating

gound water contamination. Therefore the Service, working with the West Virginia DEP, was able to get the cleanup cost included in the Abandoned Mine Lands Program. The site is to be remediated within three years at a cost of approximately $60,000. Once included in the Abandoned Mine Lands Program the Service could move ahead and purchase the property since remediation efforts were in place to rectify the problem. Total cost was $709,000.

6h. Land Acquisition

Support from U. S. Senator Robert C. Byrd's office resulted in $400,000 Land and Water Conservation Funds appropriated to purchase additional islands and high priority mainland/wetland areas in FY 2001. Total available Land and Water Conservation Funds is approximately $1,700,000.

Currently the Service owns 21 islands with partial ownership of three islands and three mainland tracts for a total of 3,220.9 acres.

Current negotiations by the Service with The Nature Conservancy are in the final stages of the purchase of a five acres life estate from Jerry Buckley, former owner of Buckley Island and associated mainland tracts purchased in 1998.

Currently the refuge administers only one Farmers Home Administration Easement. The property consists of 8.37 acres located in Belleville - Wood County - West Virginia.

In 1995 the Embayment/Wetland Expansion Package was approved which could add 5,400± acres consisting of over 100 sites to the refuge. Earlier meetings have been held with the affected State Natural Resource Agencies in Ohio, Kentucky, Pennsylvania and West Virginia. The states of Ohio, Kentucky and Pennsylvania are very supportive of our efforts. West Virginia Division of Natural Resources continues to oppose the expansion based not on habitat importance but their different management objectives concerning the refuge's hunt plan. In 1998 Comprehensive Conservation Planning began and this land acquisition proposal has become part of the planning process. A rough draft of the Comprehensive Conservation Plan was in the final stages during this report period.

8. PUBLIC EDUCATION AND RECREATION

8a. Provide Visitor Services

After a year of delays, the refuge finally received 5,000 new primary brochures reflecting the new Service standards for printed publications. Loss of staff at the Regional Office prolonged the wait for the brochure which was ultimately completed by Mark Newcastle at the WO. For several months the refuge was completely out of brochures and relied on a fact sheet for conveying important visitor information. NOTE: NEED BROCHURE IN NARRATIVE

Figure 7. Rec. Assistant Holly Barnes observes a captured monarch during the 4th of July Butterfly Count.

Students at the Pleasants-Ritchie-Tyler County Vocational Technical School in St. Marys, WV constructed sign frames under the direction of teacher Chuck Speed for the new kiosk at Middle Island. They also built several brochure racks for refuge use. The structure itself was built the previous year as a Boy Scout Eagle project.

Wildlife Dependent Uses

Wildlife photography, observation and interpretation:

An estimated 14,000 visitors came to the refuge to engage in wildlife observation, photography or to drive the interpretive auto tour route. Most participants in these activities visited Middle Island where a bridge provides auto access to the refuge.

Figure 8. The sturdy Middle Island kiosk with its new signs and brochure rack in place.

Opportunities to observe and interpret refuge wildlife and habitats without actually stepping on refuge property improved this year with the placement of an interpretive sign on the levee in Marietta, OH. The sign resulted from a Challenge Grant partnership between the refuge and the Marietta Natural History Society. The refuge's Buckley Island is visible from the new sign's location, and provides a means of highlighting the Ohio River's value to wildlife in an area where people more typically regard the river as important to navigation and as a feature in history.

Figure 9. A partnership between the Marietta Natural History Society and the refuge resulted in this sign interpreting the "Ohio River's wild side."

Environmental Education:

Twenty Ohio educators visited the refuge at Buckley Island as part of an Ohio-sponsored conservation education workshop. Refuge staff provided a session on the river's freshwater mussels and the zebra mussel invasion. Staff conducted a similar class for 40 students enrolled in "Upward Bound," a program designed to give disadvantaged girls exposure to career paths they might not have considered.

Figure 10. ORP Butler orients teachers to the activities planned on Buckley Island.

Figure 11. "Cargo for Conservation" trunk materials give students a lot to think about.

On-site environmental education activities also involved students in Kentucky and West Virginia. The refuge provided an additional ten programs serving 254 students.

Logistics remains the major limiting factor in providing on-site environmental education. Most refuge property is accessible only by boat. Off-site environmental education allowed the refuge to reach students who were not able to visit the refuge. Nearly 1400 students were contacted in West Virginia and Ohio.

Fishing:

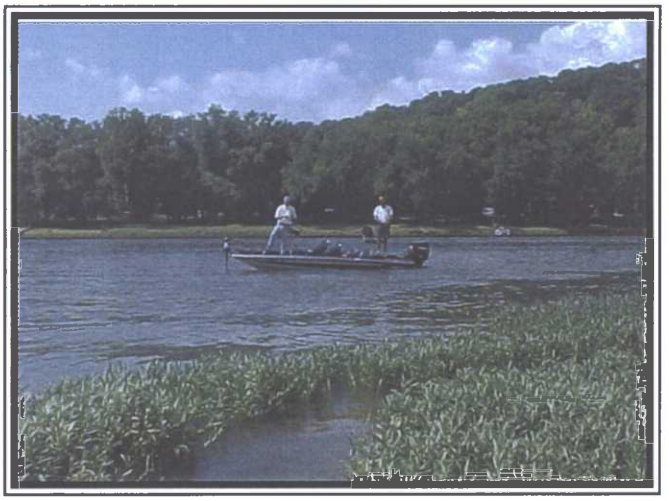


Figure 12. Anglers find promising habitat at the head of Buckley Island

All refuge property is open to fishing during regular visiting hours. Fishing at night from boats is permitted as long as boats are not tied to the islands. Estimates of fishing use on the refuge remained at 23,000. A total of 51 competitive angling tournaments were held in the Willow Island (20), Belleville (15), and Racine (16) pools, attracting over 2000 anglers as reported by the West Virginia DNR. Smallmouth bass represented the most numerous catch, followed by largemouth bass and spotted bass. Data is not available for actual use of the refuge during these tournaments. However, the rocky substrates associated with the islands and the observations of refuge staff suggest that tournament anglers probably visited the refuge frequently, particularly for smallmouth bass.

Hunting:

The majority of the refuge is open to hunting with closures in place where safety is a concern. Word-of-mouth, newspaper coverage, and refuge signs and brochures publicize this activity. Special refuge regulations such as deer hunting by archery only; prohibitions against deer drives, deer baiting, and use of dogs for rabbit hunting; may discourage some hunters. Others are attracted by the special conditions of the refuge and the opportunity for fewer interactions with other hunters than what can generally be found on the mainland. Although records are not available for individual hunter use, it appears that many refuge hunter returned from previous years.

Interest in hunting on the refuge increased somewhat in 2000 although hunting pressure remains low due to limited access. Archery deer and waterfowl hunting are the top draws with an estimated 130 and 120 visits respectively. Dove, rabbit and squirrel hunting accounted for approximately 75 visits.

Figure 13. Boaters cluster at the head of Buffington Island on a hot summer day.

Other Uses:

A summer of frequent rain and occasional high water events probably deterred some recreational use on the river, but when the sun did shine, visitors came out. An estimated 22,000 beach and water users visited the refuge. Islands that had not experienced much shoreline use during the past several summers, such as the Manchesters in Kentucky and Buffington in West Virgina, had hundreds of visitors on some weekends. Although many of these users expressed an interest in the natural surroundings, few came with a primary motivation of enjoying wildlife.

Some visitors voiced objections to the refuge's shoreline revegetation efforts that "intruded" onto sandy beaches, and there were some problems on Buckley and Paden islands with visitors removing planted willow cuttings. Refuge staff posted explanatory signs in the planted areas and increased visitor contacts on weekends with apparently good effect.

The refuge does not promote these shoreline uses. As revegetation projects alter the appeal of sand beaches, use is expected to decline. The refuge closed Grandview Island to public use for part of the summer to decrease disturbance to nesting osprey. Other such closures to protect wildlife resources may become necessary, but some impacts by boaters are probably beyond the refuge's control within the mixed jurisdiction on the Ohio River.

8b. Outreach

Outreach is a particularly important function of refuge staff because of the general inaccessibility of much of the refuge. Public awareness and support for our mission relies heavily on the use of tools such as media contacts, presentations to various groups, and participation in off-refuge events.

Public radio and television in Ohio and West Virginia provided coverage about the refuge in general and as well as specific segments on volunteers, refuge wildlife, and the zebra mussel problem. EPA-sponsored programs for cable access television highlighted the refuge's role on the Ohio River and refuge wildlife. A local television station provided coverage on refuge volunteers, bald eagles, and land acquisition. Newspaper coverage included volunteer tree planting events, property acquisitions, an island closure, butterfly counting event, and hunting opportunities.

Figure 14. A major land acquisition on Neal Island brings WTAP TV out to interview Refuge Manager Jerry Wilson.

Outreach Education

Off-site presentations and exhibits reached over 2100 people. Refuge staff provided interactive exhibits on freshwater mussels, migratory birds, and the refuge in general. Working with other agencies and organizations was an important part of these efforts. Partners included the WV DNR and the Olgebay Zoo. The refuge also assisted the White Sulphur Springs NFH during their Centennial celebration by providing exhibits and a game highlighting freshwater mussels. A homecoming event at a local river community gave the refuge an opportunity to contact another relevant audience.

Figure 15. Rec. Assistant Holly Barnes ponders an answer to a Migratory Birds in Jeopardy question.

There was a large demand for presentations to civic, professional, and other groups. Refuge programs were given off- site to the following groups:

Ohio Valley Floodwall Association
Marietta DAR
Holland Hills Garden Club
Mountwood Bird Club
Vienna, WV Rotary Club
Lubeck Boy Scouts
Lubeck Garden Church
Cardinal Garden Club
Daniel Boone 4-H Club
Ohio Extension Service
All Seasons Outdoor Club
Cadette Girl Scouts?

Volunteers

Volunteers contributed 809 hours to the refuge in 2000. This represents a decline of nearly 50% over the previous year and is in part a reflection of fewer large project activities. The number of volunteers totaled 188, a 20% decline. The refuge also had a much larger temporary staff (up to seven), reducing the need as well as the organizational time required for recruiting volunteers.

Figure 16. The frame of the seed bed is carefully reinforced by Boy Scout Jesse Burian.

Habitat restoration and visitor services received the most benefit from volunteer contributions. As has been the case for the past six years, many students participated in tree planting on Middle and other islands. Students groups in West Virginia and Kentucky also worked on manual control on invasive Japanese knotweed. A seed bed for native tree propagation was constructed as part of an Eagle Scout project.

Figure 17. Tree planters begin the work of transforming a hay field into a bottomland hardwood forest.

Figure 18. False indigo seeds collected by the scouts will be planted in the seed bed.

9. PLANNING AND ADMINISTRATION

9a. Comprehensive Management Planning

Comprehensive Conservation Planning began in 1998 with the assignment of Tom Bonetti, Regional Office Planner and Gib Chase, Ascertainment Biologist.

The majority of work related to the CCP this fiscal year was writing the draft document. Tom Bonetti, Regional Office Planner, Patty Morrison, Refuge Biologist, and Janet Butler, Refuge Outdoor Recreation Planner, completed the majority of writing for the document. Cindy Bloomer, Refuge Office Assistant, completed the necessary administrative functions in forwarding information for completing the documents, which was approaching the final stages of a draft document at the close of this report period.

Several exchanges of the draft chapter were shared with the four state resource agencies, incorporating their comments where appropriate (prior to releasing the draft document for 45 day public review and comments).

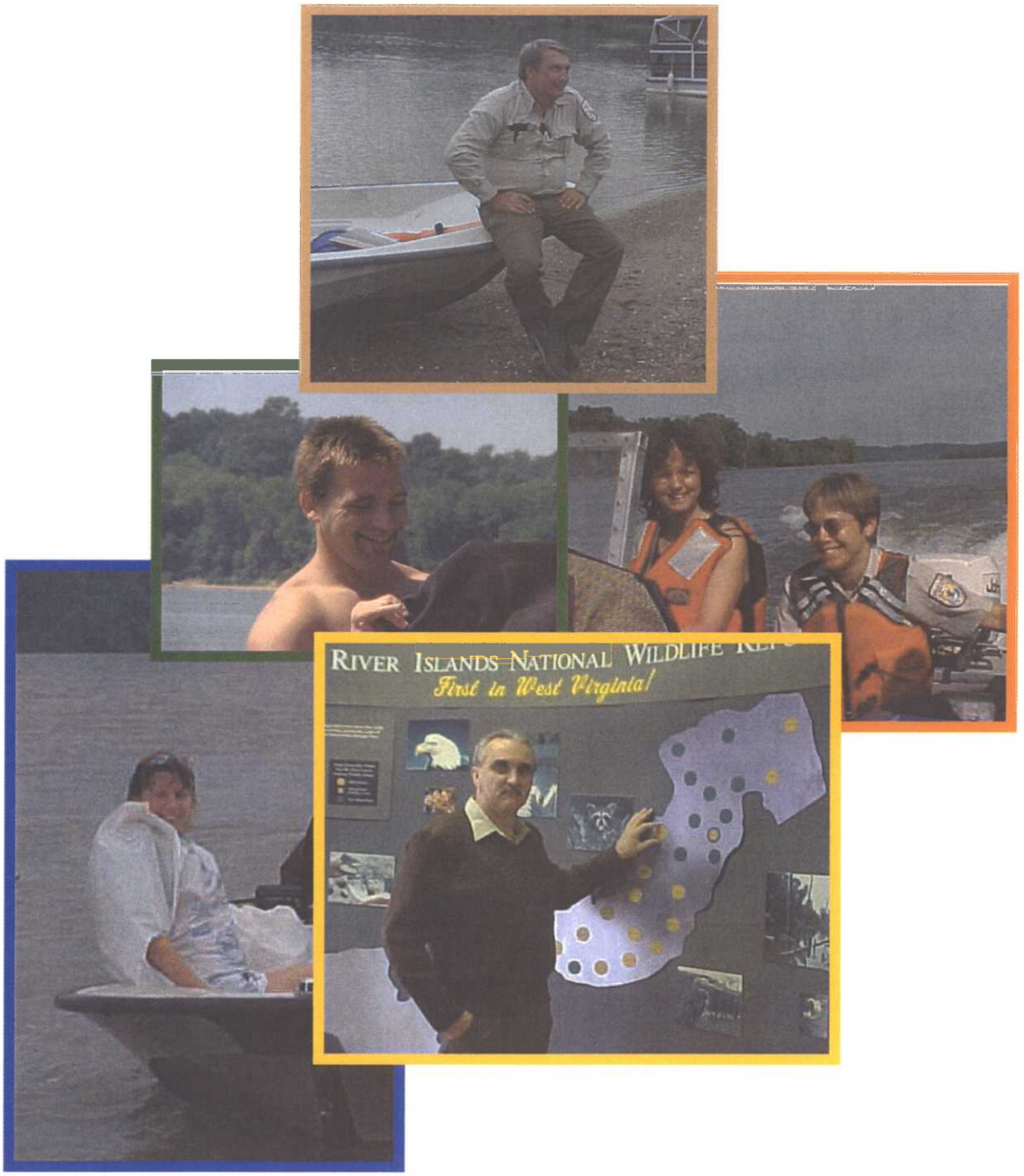
9b. General Administration

Funding

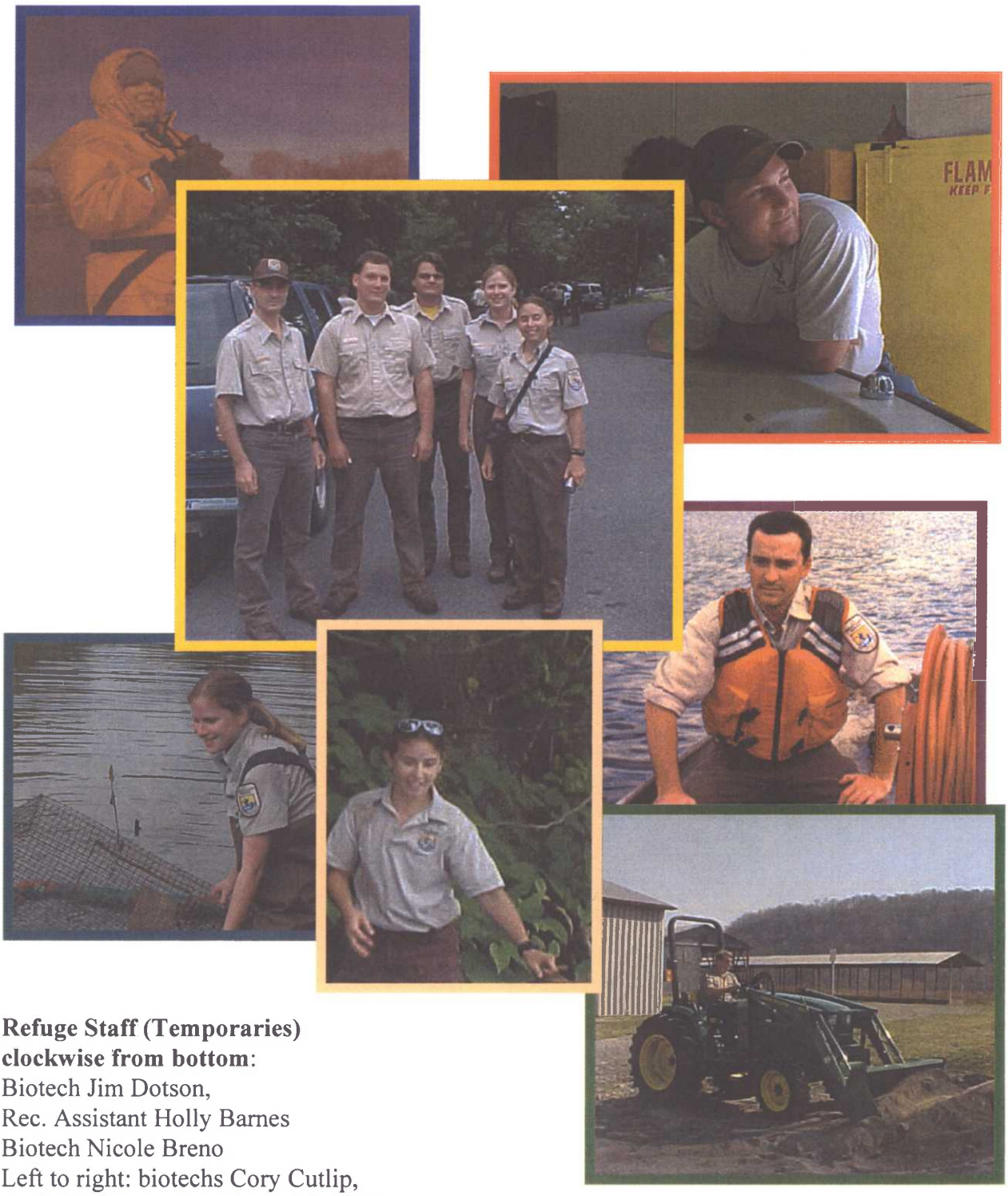
1261	**$376,760**
1262	**$ 58,300 (new suburban & tree planter**
COE	**$ 21,739**
TOTAL	**$456,799**

Note: The refuge received $117,000 in flood damage funds that will be spent in FY 2000 and FY 2001.

Personnel



Refuge Staff (permanent) clockwise starting at top: Maintenance Worker Ron Bowers, Refuge Biologist Patricia Morrison and ORP Janet Butler, Refuge Manager Jerry Wilson, Administrative Support Assistant Cindy Bloomer, Deputy Refuge Manager Tom Cox



Refuge Staff (Temporaries)
clockwise from bottom:
Biotech Jim Dotson,
Rec. Assistant Holly Barnes
Biotech Nicole Breno
Left to right: biotechs Cory Cutlip,
Andy Hofmann, Don Roop, Nicole Breno,
Rec. Assistant Holly Barnes,
(Top) Biotech Rebecca Winterringer,
Biotech Andy Hofmann Biotech Jon Humphrey