

Summary

-- DRAFT Strategic Plan --
August 2006

Jug Bay Wetlands Sanctuary
Recreation and Parks Department
Anne Arundel County, Maryland

This is the second strategic plan we have created. Our first plan was completed and approved in 2000, and it guided our work through 2005. This current strategic plan will guide our work for the next three to five years.

This Strategic Plan is a roadmap that describes where the Sanctuary as an organization is going for the next three years. The Plan was prepared by Sanctuary staff and reflects our shared vision and goals. The Plan also incorporates concerns and ideas from Sanctuary volunteers and the Friends of Jug Bay.

Implementation of this Plan will require the commitment and hard work of Sanctuary staff, the support and assistance of volunteers, and increased financial support from Anne Arundel County government.

This plan communicates important priorities and forms a base from which our progress and accomplishments can be assessed.

The Strategic Plan will:

- provide staff with vision, guidance and work priorities for a three-year period
- articulate our missions and initiatives to Recreation and Parks Department officials
- provide Anne Arundel County citizens and Sanctuary visitors with an understanding of Sanctuary goals and new initiatives.

The Plan is organized in three sections: Mission Statements, Policies and New Initiatives. The Mission Statement describes the general guidelines and principles that staff use to operate the Sanctuary and to carry out public programs. The Policies section describes our basic operating principles. The New Initiatives section describes areas where improvements are needed to existing programs. The Initiatives section includes estimated funding requirements and timelines for project completion. An appendix summarizes current research and education programs, as well as on-going projects coordinated by Sanctuary volunteers and research projects carried out by scientists with other organizations.

Strategic Plan: Years 2006 - 2009

Jug Bay Wetlands Sanctuary

Sanctuary Missions

Land Stewardship

Sanctuary staff will practice stewardship that avoids or minimizes environmental damage in order to maintain diverse and healthy natural habitats. Education programs, research projects, public access and other activities will be conducted in a way that prevents long-term damage to habitats and natural features. We will restore areas that were degraded by past actions.

Research

We will conduct research and monitoring that teaches the public of all ages - - visitors, students and volunteers - - about natural history and wetland ecology. Research objectives are to investigate local environmental quality, to investigate plant and animal ecology and to study biogeochemical cycling and water quality in the Patuxent River and its wetlands. Studies will focus on relevant conservation issues and will be linked to ongoing local or national research and monitoring efforts whenever feasible.

Education

We will provide science-based, discovery-centered and hands-on educational activities about natural history and ecological interrelationships. Observation, description and experimentation will be important elements of these programs. Activities will focus on habitats, wetlands, ecosystems, and the Patuxent River watershed.

Volunteers

We will maintain a supportive, educational volunteer program in which volunteers learn about the natural world while they contribute to scientific understanding and habitat protection. Stewardship, research and education activities will be conducted in ways that respond to volunteer interest and abilities.

Sanctuary Policies

Land Stewardship Policies

- Environmental Covenant
We will abide by the limits and language of the environmental covenant that was signed by County Executive Janet S. Owens in March 2006.
- Maintaining a Peaceful, Primitive Character
 1. We will manage and operate the Sanctuary to maintain its quiet, peaceful conditions for the benefit of wildlife and for the long-term enjoyment of the public.
 2. The Sanctuary will be a site primarily for ecological research, environmental education, nature study, hiking, habitat management, bird watching and canoeing.
 3. Educational programs will emphasize environmental awareness and scientific research, activities that foster an understanding and appreciation of the natural world.
 4. Public safety and public access will be addressed as they relate to the peaceful nature of the Sanctuary.
 5. Ball fields, golf courses, boat ramps and paved trails are prohibited. Activities, projects and structures will be evaluated prior to construction to consider environmental impacts.
- Limiting Public Access as a Conservation Tool
We support the current “limited public access” policy. Controlling public access minimizes ecological damage and disturbance to wildlife. Visitation will continue to be controlled by asking visitors and groups to call ahead to make reservations and to report to the Sanctuary office upon arrival.
- Minimizing or Prohibiting Environmentally-Harmful Activities
We will avoid or prohibit actions that have the potential to harm the Sanctuary environment. Field mowing, forest thinning or tree removal, tree planting and poison ivy or invasive species control must be evaluated and approved ahead of time. Any proposed use of chemical pesticides must be approved. Habitat conservation efforts or public access construction projects (wildlife viewing blinds, boardwalks, etc.) must be evaluated prior to implementation. Construction plans will be submitted to regulatory agencies for review and permits.
- New Road or Trail Construction
New road construction as well as a regional “cross-Sanctuary” hiker/biker trail will be prohibited. Proposals to build new trails or boardwalks will be evaluated in order to weigh beneficial versus negative environmental impacts.
- Hunting, trapping and fishing are prohibited except if required to accomplish specific stewardship or research goals.

Research Policies

- Staff-coordinated research will focus on ecology and environmental science. Examples of typical studies are population biology, behavior, breeding biology, habitat use, trophic relations and environmental quality.
- Studies shall do little or no harm to animals, plants or their habitats.
- Every staff naturalist will coordinate a study
- Research projects must be approved by the Sanctuary Director and must conform to Sanctuary policies.
- Projects must be cost-effective.
- Studies by non-staff researchers will be encouraged where these enhance our understanding of ecology and environmental science, and where they do not conflict with existing studies.
- Studies will rely strongly on volunteer assistance; research projects that do not sustain their interest must be reevaluated.
- We will document accidental animal mortality that results from research projects, roadkills or natural causes.
- The Sanctuary director will authorize studies involving trapping and marking animals.
- We will provide training for volunteers; prior experience is not required.
- Volunteers of all ages will be included, whenever possible.
- We will periodically summarize study results in writing.
- Research results will be shared with other scientists, government agencies and the public.
- We will maintain an active Scientific Advisory Committee.

Education Policies

- We will offer a wide variety of programs for the public at large - - from technical programs aimed at adults (i.e. Lectures-in-the-Field, workshops, conferences) to programs for school-aged children (i.e., Classrooms-in-the-Field and Summer Science Camps) and general programs for all ages.
- Results of on-site research and stewardship will be integrated into the educational programs.
- We will offer an on-site program (Classrooms in the Field) for students during the school year.
- We will provide a science camp for various ages in summer.
- Programs will be targeted to specialized audiences such as senior citizens, scouts, handicapped individuals, college students and home school families.
- When possible, group size (especially student groups) will be small in order to enhance learning and to minimize damage to trails or habitats.
- We will limit the number of educational programs at the Sanctuary in order to minimize impacts on wildlife and habitats.
- We will initiate cooperative programs with other organizations such as the Chesapeake Bay National Estuarine Research Reserve, Patuxent River Park, Friends of Jug Bay and the Audubon Naturalist Society.

- We will produce and disseminate educational materials via newsletters, exhibits, web pages, training workshops, posters and displays.
- We will maintain an active Education Advisory Committee.

Volunteer Policies

- People of all ages and all levels of experience will be welcomed.
- We will provide training and a written volunteer guide.
- A volunteer coordinator on staff will facilitate participation in Sanctuary activities.
- We will provide volunteer benefits, such as free entry to the Sanctuary, newsletters, lectures, workshops and special events.
- We will work closely with the Friends of Jug Bay in their mission to protect the Sanctuary and to improve Sanctuary programs.

New Sanctuary Initiatives

Land Stewardship Initiatives

- **Sanctuary Expansion**
We will facilitate the County purchase from willing sellers of land that borders the Sanctuary. These adjacent lands will be incorporated into the Sanctuary.
New Funding Required: Commitment of Program Open Space or Rural Legacy funds
- **Protection of New County Lands**
We will work with Recreation and Parks Department staff to evaluate new areas in Anne Arundel County for protection as natural parklands either through purchase or conservation easements. Managers of the various county parks will maintain contact with their neighboring property owners to pursue potential preservation action. We will disseminate information on easements to landowners in the vicinity.
New Funding Required: None
- **New Wetland Study Institute at River Farm**
We will secure the funding to build an education center and overnight facility for university students and researchers. Tentative plans include a classroom, a lab, large bathroom with shower, commercial-grade kitchen, dorm rooms that could sleep 12 and an elevated deck for nature observations over Jug Bay.
New Funding Required: \$400,000
Initiation/completion Timeline: Fall 2006 - Spring 2008
- **Sanctuary Management Plan**
The 2004 Sanctuary Management Plan will be updated every three years.
New Funding Required: None
InitiationTimeline: Fall 2007 – Spring 2008

- **Management Plan for Wooton's Landing Wetland Park**
Wooton's Landing is a created wetland that was constructed by the State Highway Administration. Because of its unique origins, this wetland park requires a special set of management objectives. We will prepare a management plan that covers:
 - a. public access, educational activities and potential recreational use that take advantage of the riverside location, but that pose no harm to the natural habitats or populations.
 - b. regular road and trail maintenance, mowing and weed control.
 New Funding Required: None
Initiation Timeline: Fall 2006

Research Initiatives

- **Annual Summary of Research Results**
Staff will prepare an annual report summarizing the major results and accomplishments of each study. Studies will be summarized in a consistent style and limited to two to five pages. The report will include findings, changes to methodology, summary of sampling dates and locations, future goals, and numbers of participating volunteer. Results will be presented in one of the following ways: by giving an oral paper or poster at a conference; creating a display in the Wetlands Center; posting the data on the Sanctuary web page; by writing an article for the Sanctuary newsletter or another newsletter. A presentation summarizing the previous year's research will be made to County officials and to the public.
New Funding Required: None
Initiation Timeline: Fall 2006
- **Initiate Research Projects with other CBNERR-MD Components**
We will continue to work with our CBNERR partners on shared goals of estuarine research and education. We will maintain a joint research project with other CBNERR sites. Currently we have joint projects with Patuxent River Park, but we will develop projects with Otter Point Creek in Harford County.
New Funding Required: None
Initiation Timeline: Spring 2007
- **Public Seminars**
We will schedule informal seminars at the Sanctuary so that staff naturalists can share research results with volunteers, university and high school students, other county employees, advisory committee members and members of the public.
New Funding Required: None
Initiation Timeline: Fall 2006
- **Increase Funding for Research and Technology**
We need funding for research equipment and computers so that we can keep abreast of changing and improving technology. Additionally, field equipment wears out with use. Examples of crucial equipment include: water quality testing meters, electronic balances, digital cameras, animal traps or nets, radio receivers, spotting scopes, and regular replacement or upgrades of computers, printers and software operating systems.
New Funding Required: \$5,000
Initiation Timeline: FY 2008 budget cycle

- **Statistical Analysis of Data**
 We will develop appropriate study design and statistical analysis techniques as new study plans are developed. This may include more training and new statistical software. We will seek guidance from the Scientific Advisory Committee.
 New Funding Required: \$500 for software
 Initiation Timeline: Fall 2006
- **Quality Assurance/Quality Control Program for all Projects**
 We will develop a QA/QC program for all research studies. The Scientific Advisory Committee and others familiar with QA/QC procedures will review these protocols.
 New Funding Required: None
 Initiation Timeline: Winter 2006-2007
- **Grant Support for Jug Bay Fellowship Program**
 Staff will work with the Friends of Jug Bay (FOJB) to obtain grant funds to maintain the intern program. Funds will be used to improve the program by purchasing equipment (computers, software, field equipment), and supporting students so that they can present research results at professional conferences.
 New Funding Required: \$10,000 foundation grant support annually
 Initiation/completion Timeline: Winter 2006-2007

Education Initiatives

- **Publicity for Sanctuary Programs**
 We will improve advertising in order to increase attendance at public programs and events. This will involve increased use of targeted advertising, information on our web page and sending flyers to more locations in the county and elsewhere.
 New Funding Required: \$500 annually
 Initiation Timeline: Fall 2006
- **Evaluation of Educational Programs**
 We will develop a method by which teachers can provide staff with useful evaluations of education programs, especially those for school-aged children. We will seek advice from the Education Advisory Committee and others.
 New Funding Required: None
 Initiation Timeline: Winter 2006-2007
- **Extended Canoe Trips**
 We will organize group canoe trips from Wooton's Landing to the Sanctuary. We will also organize an extended trip from the Sanctuary to Solomon's Island. We will continue to participate in the annual Patuxent River Sojourns.
 New Funding Required: None
 Initiation Timeline: Spring 2007
- **Outreach at Patuxent Wetlands Park**
 We will initiate an education program at the Wetlands Park at Hills Bridge that will target fishermen. Ideas include a board with information on Bay ecology, conservation information about Yellow Perch and Striped Bass and the damage caused by discarded fishing line. We will also advertise Sanctuary programs there.
 New Funding Required: \$500 for sign material
 Initiation Timeline: Winter 2006-2007

- **Van Excursions**
We will organize day trips and overnight excursions to NERR sites, wildlife refuges and other natural areas. We will borrow or rent a 12-person van for these excursions.
New Funding Required: \$500 (two-day van rental)
Initiation Timeline: Fall 2006
- **Participation at Educational Conferences**
To broaden our professional experience and to learn about new teaching techniques, Sanctuary staff attend and actively participate in conferences as funding allows. Funding for conference fees, travel and accommodations are needed so that staff can attend regional or national conferences.
New Funding Required: \$1,500 annually
Initiation Timeline: Fall 2006
- **Outreach to nature centers, bird clubs, scouts, non-governmental organizations and other similar groups.** We will identify and visit other organizations to inform them of our programs and activities, and to learn about their programs.
New Funding Required: none
Initiation Timeline: Fall 2006

New Volunteer Initiatives

- We will clarify liability coverage of volunteers and interns in the event of an accident.
- We will develop incentives for volunteers to bring friends into the program.
- We will increase volunteer recruitment efforts.
- We will conduct exit interviews with volunteers who leave the program.
- We will develop new and more frequent ways to honor volunteers and Friends of Jug Bay leaders.
- We will take more photographs and develop a photo album of volunteers in action.
New Funding Required: \$500
Initiation/completion Timeline: Fall 2006/Fall 2007

Staffing and Funding Initiatives

- **Hire a Full-time Staff Naturalist**
A new full-time staff naturalist is required to accomplish many of the initiatives outlined in this strategic plan, improve research and education programs for the public; expand volunteer opportunities in research and education; carry out environmental monitoring efforts.
New Funding Required: \$40,000/year plus benefits
Initiation Timeline: FY 2007 budget cycle
- **Hire a Full-time Administrative Assistant**
A full-time administrative assistant is needed so that we can better serve the needs of the public. Increased programs, public visitation and County reporting requirements have created increased office work that are now beyond the ability of a parttime employee.
New Funding Required: \$30,000/year plus benefits
Initiation Timeline: FY 2007 budget cycle

- Increase Funding for Part-time Staff**
 Part-time naturalist and administrative assistant salaries must rise. Salaries need to be increased to help reduce frequent job turnover, match salaries in nearby counties, and compensate for the lack of health coverage, sick days and cost-of-living raises.
 Funding Required: Need about \$75,000 annually
 Initiation/completion Timeline:
- More Opportunities for Staff Development**
 Staff requires professional training opportunities that enhance intellectual growth and keep Sanctuary programs up-to-date. We will seek training through university-level course work, attendance at conferences and workshops, access to scientific literature (journals, web pages), and regular communication with scientific and conservation communities. New information will allow us to develop new studies that incorporate innovative investigative techniques. Such new investigations could involve studies of animal or plant behavior, field or lab experimentation, habitat manipulation and different short-term focused studies.
 New Funding Required: \$2,000 annually
 Initiation Timeline: Fall 2007

Appendix

1. Current Staff-Coordinated Research and Monitoring Projects

| | |
|--------------------------------------|--|
| Nutrient Cycling/Water Quality Study | Patuxent Estuary Winter Waterbird Census |
| Amphibian Studies | Habitat (Tree) Survey |
| Great Herp Search (annual survey) | Wild Rice Study & Restoration |
| Box Turtle Population Ecology | Adopt-a-plot Invasive Plant Management |
| Red-bellied Turtle nesting study | SAV Survey |
| Fish Survey | Herbarium & Plant Species Database |
| Stream Macroinvertebrate Survey | Daily Weather Recording |
| Nesting Songbird Study (MAPS) | Groundwater Level Monitoring |
| Wetland Bird Study | |

2. Current Staff-Coordinated Educational Programs and Public Events

| | |
|--|--|
| Classrooms-in-the-Field | Scout Merit Badge Programs |
| Jug Bay University Fellowships | Outreach to schools and organizations |
| Lectures in the Field | Interactive Wetland Exhibit |
| Discovery Programs | Volunteer Appreciation Dinner |
| Discover Wetlands by Canoe | Friends of Jug Bay annual meeting |
| On the Water” program for high school students | Annual Marsh Cleanup |
| Summer Science Camp | Community service opportunities for high school and college students |
| Research Conferences and workshops | Cooperative programs with other organizations (i.e. Patuxent River Park, Chesapeake Bay National Estuarine Research Reserve, and Audubon Naturalist Society) |
| Weekend programs for youth groups | |
| Eagle Scout Projects | |
| Workshops for teachers and volunteers | |
| Weekday Programs for Senior Citizens | |
| Home School Workshops | |

3. Current Volunteer-coordinated Projects and Studies

| | |
|-----------------------------------|----------------------|
| Warm-Season Grass Habitat Project | Frog Calling Surveys |
| Eastern Bluebird Nest Box Survey | |

4. Current Projects by Non-Staff Researchers

1. Amphibian monitoring techniques (emphasis on Red and Mud Salamanders) Gabe Strain, Maryland Department of Natural Resources and Frostburg State University
2. Population structure and genetics of Eastern Box Turtles. Susan Hagood, Doctoral candidate, Animal Science Department, University of Maryland.
3. West Nile Virus in songbirds. Dr. Marm Kirkpatrick and Dr. Pete Marra. National Zoo and New York Public Health Department,
4. Iron metabolism by wetland microbes. Dr. Patrick Megonigal and Dr. Jason Keller, Smithsonian Environmental Research Center.
5. Seasonal sediment and nutrient dynamics in natural and restored in Chesapeake Bay tidal marshes. Dr. Cindy Palinkas and Dr. Jeff Cornwell, Horn Point Lab, University of Maryland.
6. Identifying the microbial communities involved in nitrogen cycling in freshwater tidal wetlands. Caroline Fortunato and Dr. Karen Bushaw-Newton, American University.
7. Assessing emergent plant community structure in a freshwater tidal wetland. Julie Bortz, CBNERR
8. Distribution of ground bees, tiger beetles and other sand barren insects. Dr. Ben Hollister (JBWS), Dr. Jonathon Mawdsley (U.S. Natural History Museum) and Sam Droege (USGS).
9. Maryland Biological Stream Survey. Department of Natural Resources staff biologists.