Strategic Plan Will Guide Sanctuary Through 2003

By Judy Burke

Truth is spoken in many languages at Jug Bay: the insistent honks of Spadefoot Toads courting in the rain, the heavy whisper of a Barn Owl’s wings as he hunts the marsh at night, the slap of the tail when a Beaver spots a stranger, the slow trill of the last cricket in the dying days of fall. Not to mention the snort of a stymied staffer who wants to whack her computer with an ax.

But what about the language of corporate America? Does a wildlife sanctuary have anything to learn from the realm of brand names and bottom lines? We are a county-owned preserve, and we don’t need to make a profit. But we do want to make a mark. That’s why we adopted a notion fashionable among the Fortune 500: creating “vision” and “mission” statements to define our purpose. (At 3M, for example, the simple—which is not to say modest—vision is be “the most innovative enterprise in the world.”) Three years ago, the staff at the Sanctuary decided that we should take stock. What were we accomplishing? How well did our activities support the founding principles of conservation, education and research? Did we still practice what our written policies preached? Should we change those rules? What new goals should we set? What were our missions? What was our vision statement?

Guided by Brian Woodward from headquarters, we met for a day of thinking and talking, away from the Sanctuary’s daily duties. Then, over many months, we drafted a “vision” for the Sanctuary for the next quarter-century, which we sent to members of Friends of Jug Bay for comment. The responses were helpful—and humbling. Don’t try to save the world with “the Jug Bay ethic,” members told us, but be sure to save the Sanctuary. Keep it safe for wildlife, plants and people. Try to expand it. Keep doing good research. With those commandments in mind, we went back to the drawing board and wrote a straightforward document that explains our missions, our policies in support of those missions and our specific new goals—new ways of bringing those policies to life—for the next three years. “Strategic Plan: Years 2000-2003” will be our guide as we start new programs and decide how to improve old ones.

Sanctuary’s four missions
To carry out the Sanctuary’s missions, we will:
• Practice land stewardship that avoids or minimizes environmental damage and maintains or restores healthy, natural habitats.
• Conduct research that teaches the public about natural history and wetland ecology. Studies will focus on environmental quality, plant and animal ecology, biogeochemical cycling, water quality and conservation issues.
• Provide education programs that focus on habitats, ecosystems and the Patuxent River watershed. Activities will be science-based and will include hands-on experimentation.
• Enable volunteers to learn about the natural world in a supportive environment while contributing to scientific understanding and habitat protection.

For each of the four missions, we have a list of policies. Highlights are given on page 6.

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Judy Burke Leaves Sanctuary Staff

Naturalist Judy Burke will no longer be working as a staff member at the Sanctuary. Because of the demands of her full-time job (she is an editor at U.S. News & World Report) and her part-time position at Jug Bay, Judy has decided to claim some time for relaxation and recreation.

Judy joined the staff as naturalist and volunteer coordinator in 1995. Through Judy’s diligent phone calls, friendly interest, and gentle persistence, the Sanctuary’s volunteer force flourished. She was also involved in numerous ecological studies, and she concluded her tenure with an analysis of waterbird observations made at Jug Bay through the last decade.

Fortunately for the Sanctuary, farewell is not goodbye. “I love Jug Bay, and I plan to stay very involved as a volunteer,” Judy said. She and husband Rick Malmgren will continue to live in the log house at the Sanctuary. You might see them jogging if you happen to be at the Sanctuary early in the morning!

Dotty’s Black Rat Snake Adventure

By Dotty Mumford

Every year I have a big pile of wood chips that I allow to compost, and I use it for mulching. On July 8 of this year, I was digging with a pitchfork into my chip pile to transfer mulch to the wheelbarrow. It is not unusual to have an occasional small branch in the pile, so when a long black thing came out with my pitchfork, I thought it was only a branch. But then I did a double take, because that branch was a black snake! At first I was only surprised, but then I became quite upset when I realized that it had been pierced by one of the tines of the pitchfork. As near as I could tell, the snake was pierced below the anus opening, so no vital organs were harmed. The snake was really upset and striking at the pitchfork. I used a small leaf rake with a plastic head to gently push the snake off the tine. After a minute the snake relaxed enough to move away. A couple of weeks later I saw a black snake of about the same size in my driveway. I like to think that it was the same snake.

On July 28, I was digging more gently at the wood chip pile when three white objects fell out of the pile. Each object was a crescent-shaped oval, about two and one-half inches long and less than an inch in diameter. They were hard and smooth, with the consistency of fine porcelain. My black snake apparently was a “she,” and she had left some eggs! I didn’t want to put them back in the chip pile, as I intended to be using the chips. I took the eggs to another pile of compost that I would not be using and put them down in the middle of it. I didn’t know whether I had done the right thing or not. I have no idea just what conditions, such as temperature, that snake eggs need for incubation.

On October 22, I decided to check on the snake eggs to see if they had ever hatched. I gently dug into the compost pile and finally found one of the eggs. Incredibly, at one end of the egg, a baby snake was emerging, with its head and about an inch of its body out of the egg. It turned its head toward me and flicked its little tongue. I quickly put the compost back over it to let the procedure continue undisturbed. I was glad to know that moving the eggs did not hurt them, but I can’t help feeling that this is rather late in the year for a snake to hatch.
Dear Friends,

A number of people have approached me to say: “What is happening with the property next door to the Sanctuary?” And: “Why is it taking so long?” or “Why isn’t anybody saying anything?” This has happened enough that I am beginning to fear, with apologies to William Shakespeare, that “Now is the winter of our discontent.” That is something I want to dispel, and before the next newsletter I would like to see us in more than just a springtime of hope...

Acquisition of the land that we have been calling Galloway Forest by Anne Arundel County could be a very real thing. Negotiations have been going on between the property’s owner, an Atlanta-based developer, and Anne Arundel County. I have been in contact with the company’s Vice President and Environmental Scientist (a Ph.D. with a very reputable academic and private-sector background) and the company’s local representative (who has many years experience in Maryland property transactions), and they have both assured me that negotiations are continuing with Anne Arundel County and with the State of Maryland.

As I have written before, I know that many people in the federal and state as well as local governments have been taking an active interest in or actively participating in the property’s acquisition. To help finance the property’s purchase, members of the Department of Natural Resources have been exploring possibilities with the federal government and related agencies to help secure a grant or grants to “lock-in” purchase of the land.

In 1979, Donald Worster, one of my favorite American historians published a very interesting work entitled “Dust Bowl.” What do the Great Plains of the 1930s have to do with Jug Bay? Just this: Worster comments that “Optimism certainly brought many Western farmers through to greener days. But it can also be a form of lunacy. There is about the perennial optimist a dangerous naiveté, a refusal to face the grim truth about oneself or others or nature.”

“Optimism,” Worster writes, “may rest either on a confidence in one’s ability to affect the course of events, or paradoxically, on a happy fatalistic belief that the world is preordained to promote one’s welfare.”

The Friends of Jug Bay tend to have a pretty sophisticated membership, so I doubt if we are going to be naïvely optimistic. And while we may have a certain voice, I think we realize it is a small one. But we can be heard, and we must keep on using our voice to sustain the attention of our elected officials. That must be done through letters, telephone calls, and e-mails where possible. And, worldly as we Friends may be, we must not slip into the complacency of thinking that because we feel securing the land for the people of Maryland is a worthwhile cause that it will automatically come about. I am hoping that by the time the spring letter is written—if not a long time before—our hopes will be realized, and we can direct our energies to something else.

One example of that “something else” is the learning sessions for children that Education Coordinator Karyn Molines, and naturalists Elaine Friebel and Jennifer Rohrer conduct for pupils from Annapolis and surrounding area schools. I am hoping to attend one of the sessions next spring and write you a report with as much child-like wonderment and enthusiasm as I can bring to it (and I promise the dog will not have eaten it before publication!).

The Friends are also very proud and pleased to bring groups to the Sanctuary to enjoy the many aspects it has to offer. In particular I am thinking of November’s Volksmarch, organized by FOJB Board member and longtime Friend Mike Quinlan. It was a huge success, with hundreds of attendees who strode the trails of Jug Bay and paused at stops where refreshments, T-shirts and other goodies were sold. The money realized by these sales goes to bringing the children to the Sanctuary, creating an all-round “win-win” situation.

Finally, many thanks to CBNERR manager Carol Towle, who provided $500 for the Volunteer Dinner, allowing the JBWS staff a chance to partake of the festivities and spend time with volunteers!

Doug

*The property called Galloway Forest extends roughly from Route 4 to Wrighton Road and from the Patuxent River to Plummer Lane.

A Call for Future Board Members

The Friends of Jug Bay are seeking nominations for the Board of Directors. If you are interested in serving on the board, please contact Vice President Peggy Brosnan (410 867-9217 or email: peggymbrosnan@yahoo.com).

Nominees for 2001 Jug Bay Award Needed

The Friends of Jug Bay are soliciting nominations for the 2001 Jug Bay Award. The purpose of the award, given annually by the Friends, is to honor an individual for local actions in the Jug Bay area in wetlands preservation, conservation, education, scientific research or aesthetic appreciation. To request a nomination form, call the office at 410-741-9330. The deadline for nominations is January 30; the award is presented at the annual meeting in March.
Help a Hungry Bird  
Saturday, January 6; 10 am - noon  
Saturday, February 24; 1 - 3 pm  
What do birds do in winter? How do they keep warm and what do they eat? We will explore bird behavior, search for birds, and then make bird feeders so you can help feed a hungry bird. Dress warmly. All ages.

Winter Wonderland  
Saturday, January 13, 1 - 3 pm  
The trees may be bare, but there's still life out there! Bundle up and join a naturalist to discover the beauty of the woods in winter. Hot chocolate will help warm us after our hike. All ages.

Star Light Star Bright  
Saturday, January 27; 6 - 8 pm  
Saturday, March 3; 6:30 - 8:30 pm  
What are stars? Do they shine only at night? What constellations are visible throughout the night? We'll explore these questions and more, construct constellation projectors and learn how to tell time by the stars. Children must be at least 8 years old and accompanied by an adult. Please bring a tall Pringles can.

Winter Detectives  
Saturday, February 10; 10 am - noon  
Come to Jug Bay and become a winter detective! Join us for a hike to discover winter animals and plants. Hot chocolate will warm us up after the hike. Dress warmly. All ages.

Chemical Soup  
Sunday, March 4; 1 - 3 pm  
What are the ingredients that make up river water? Important chemical reactions take place in and around us every day. Have fun using test kits to discover the invisible chemicals in water and then get ready to create your own slime using non-toxic chemicals. Children must be at least 5 years old and accompanied by an adult.

Beneath Your Feet  
Saturday, March 10, 10 am - noon  
Saturday, April 7, 10 am - noon  
Explore the world of earthworms, pillbugs, bess beetles and other creatures that live down low. Dress for the weather. All ages.

Something's Fishy  
Sunday, March 11; 1 - 3 pm  
Come join us to learn how to identify the fish of the Patuxent River. We will investigate fish survival and behavior, observe captive fish and then make a fishy craft. Children must be at least 6 years old and accompanied by an adult.

Coastal Erosion  
Saturday, March 17; 1 - 3 pm  
What is erosion, what causes it and who cares? We will learn about the causes and impacts of coastal erosion, experiment with erosion through hands-on demonstrations. Children must be at least 10 years old.

Pond and Stream Exploration  
Sunday, March 18; 2 - 4 pm  
Saturday, April 14; 2 - 4 pm  
Come explore our stream and pond! We'll search out and learn to identify frogs, turtles, fish, tadpoles and dragonflies and other aquatic insects. Equipment and field guides provided. Wear boots or tie shoes that can get wet, and bring a change of clothes and a towel. All ages.

Signs of Spring  
Sunday, March 25; 1 - 3 pm  
Saturday, April 21; 10 am - noon  
Spring is bursting out all over! Come explore Jug Bay's marsh, fields and forest for signs of life awakening from the long winter. Dress for the weather, and wear waterproof boots or shoes. All ages.

Eggs to Legs  
Saturday, March 31; 10 am - noon  
Sunday, April 22; 1 - 3 pm  
Investigate animal life cycles such as insect and amphibian metamorphosis. Meet live animals hatched from eggs and take a hike outdoor in nature's nursery. Dress warmly. All ages.

Wonderful Wetlands  
Sunday, April 1; 1 - 3 pm  
Join us for an informal introduction to the ecology of freshwater tidal wetlands. Dress for the weather; boots are not needed. All ages.

Spring Peepers  
Saturday, April 7; 6 - 8 pm  
Families can join a Jug Bay naturalist for an evening hike to the Sanctuary's ponds, where we'll listen and look for Spring Peepers. Wood Frogs and other amphibian species that call in early spring. We'll also search for Spotted Salamanders that have left their underground homes to breed. Dress for the weather, with footgear that can get wet. All ages.

Soil: It's Much More Than Dirt!  
Saturday, April 27; 1 - 3 pm  
Enjoy a short hike to a soil-sampling site and use standard sampling techniques and equipment to obtain soil core samples. We will examine the soil for its profile, properties, structure, and the life it sustains. For teens and adults.

Reptiles and Amphibians  
Sunday, April 28; 1 - 3 pm  
Snakes, turtles, lizards, frogs, toads and salamanders will be the stars of this program, as we search for the animals known as "herps." We'll investigate the similarities and differences between reptiles and amphibians, and learn what it means to be an ectotherm. Wear boots or shoes that can get wet. All ages.
A call for volunteers

The success of Jug Bay is dependent on numerous volunteers. People, young and old, help with education programs, conservation projects, and ecological research. Spring and summer research projects include turtle studies, vernal pool sampling, bird banding, fish surveys, wetland plant studies and stream monitoring. Volunteers lead our morning bird walks and pond explorations. Volunteers are also needed to assist in the Wetlands Center on weekends. Trail maintenance and cleanups are done throughout the year. Call for more information and specific schedules.

Become a Volunteer
Sunday, March 18; 1-4 pm
At this hands-on workshop, you’ll learn about volunteer opportunities in research, education, or conservation at the Sanctuary; we will participate in sample projects so dress for the weather in old clothes and wear waterproof shoes or boots.

Stream Monitoring.
Saturday, January 13; 1-4 pm
Volunteers are needed top help collect, sort and identify, and count stream invertebrates that are used to evaluate stream health. Dress for the weather and wear waterproof boots. Not appropriate for children under 12.

Canoe Guide Training
Saturday, March 31; 10 am - 3 pm
Become a Jug Bay canoe guide! This workshop will be a land-based training for both experienced and new volunteers, and will cover volunteer responsibilities, marsh ecology, canoe safety and paddling techniques, canoe routes and an overview of Sanctuary policies. Volunteers must have canoeing experience. For adults or older teens.

Naturalist Training
Pond & Stream: Saturday, April 14; 1:30 pm - 4:30 pm
Volunteers are needed to lead our monthly bird walks, marsh ecology tours and pond and stream explorations. Here’s your chance to learn some of the tricks of the trade. Plant and animal identification and activities that make a nature walk fun and educational will be part of the workshop. For adults or older teens.

Marsh Cleanup
Saturday, March 24; 10 am - 3 pm
Volunteers will pick up trash that has floated into the marsh. Please dress in work clothes (long sleeves and long pants), including boots or shoes with shoelaces that can get wet, and bring work gloves, a bag lunch, a change of clothes and a towel. Free admission to the Sanctuary for all who help. All ages. Scout troops and community groups are encouraged to participate.

Integrating Wetland Ecology into the Classroom
Saturday, January 20; 10 am - 2 pm
Investigate a wetland and incorporate the study of ecology, food webs, water chemistry and nutrient cycling into the classroom. Through lecture and active participation in experiments, demonstrations, and field investigations, we will learn about wetland characteristics, wetland plants and animals, tides, watersheds, and the water cycle. Data collected by the Jug Bay Wetlands Sanctuary staff and volunteers will be integrated into many of the activities. Sanctuary naturalists will help participants develop lesson plans that incorporate wetland investigation into their curriculum and fulfill local, state, and national science outcomes. Teachers who successfully complete the workshop can schedule spring field trips for the classes at the end of the workshop. Please bring a bag lunch.
Registration deadline is January 12. Enrollment is limited to 20 participants. A list of required supplies will be mailed to registrants. Call the Jug Bay Wetlands Sanctuary at (410) 741-9330 to register.

Lectures in the Field

Water Chemistry and Nutrient Dynamics Training Workshop
Saturday, January 27; 12:30 - 4 pm
Since 1986, volunteers have monitored nutrient pollution, dissolved oxygen levels, pH and water clarity in Jug Bay’s waters. We will refresh those skills and orient new volunteers. We will also discuss research results. The workshop is required for all volunteers, new and experienced. For adults or teens.

Vernal Pool Amphibian Study Orientation
Saturday February 10; 1 - 4 pm
Vernal pools are important breeding habitats for amphibians. This workshop will orient volunteers on how to visually survey and map the pools and provide an overview of frog, toad and salamander identification. For adults or teens.

Patuxent Waterbird Census
Saturday, February 17; 7:30 am - 10:30 am
Join the third annual river-wide bird census of the Patuxent River, as environmental groups and interested individuals count waterbirds from the Howard County reservoirs to Solomons Island on the Chesapeake Bay. Call Chris Swarth for details.
Land stewardship policies

- We will maintain the peaceful, primitive character of the Sanctuary. The Sanctuary will be a site primarily for research, education, enjoying nature, hiking, habitat management and canoeing. Ball fields, golf courses, boat ramps, new roads, paved trails and regional "cross-Sanctuary" hiker/biker trails are prohibited.
- We will limit public access, asking visitors to call ahead.
- We will avoid or minimize activities that may harm the environment.
- Hunting, trapping and fishing are prohibited except if required for specific stewardship or research goals.

Research policies

- Studies shall do little or no harm to animals, plants or their habitats.
- Studies will rely on volunteer assistance.
- We will periodically summarize results, in writing and share the results with other scientists.

Education policies

- We will offer a wide variety of programs for the public at large, including schoolchildren and adults, and for specialized audiences, such as senior citizens and handicapped individuals.
- We will limit the number of on-site educational programs to minimize impacts on wildlife and habitats.
- We will integrate the results of on-site research and stewardship into all educational programs.

Volunteer policies

- We will welcome people of all ages and all levels of experience.
- We will provide training and a written volunteer guide.
- We will provide a Volunteer Coordinator.
- We will provide volunteer benefits, such as workshops and free entry to the Sanctuary.

We have set goals under each policy, several of which are listed below. Deadlines vary, but each "initiative" should be well underway by the spring of 2003.

Land stewardship initiatives

- We will work to give the Sanctuary and other natural park lands in the county permanent, legal protection as "Nature Sanctuaries."
- We will facilitate the expansion of the Sanctuary by land purchases. The 600-acre Galloway Forest on Wrighton Road is a high priority.
- We will secure funding to replace the Intern House with an education center and overnight facility for students and researchers. Plans include a classroom, dorm rooms for eight and an elevated deck for nature observations.
- We will prepare a management plan for the River Farm. This will include wildlife habitat projects, the South County Community Garden, overnight camping for canoe groups and public toilet facilities, including a composting toilet, if feasible.
- We will develop a management plan for the Sanctuary. This includes long-term monitoring, public access, educational and recreational use, and maintenance.

Research initiatives

- We will seek county funding for a full-time naturalist.
- We will document the biodiversity of the entire Sanctuary and Wooton's Landing Wetland Park, mapping all federal and/or state-listed rare, threatened or endangered plants and animals.
- We will inventory non-native species and initiate control programs. The impact of resident Canada Geese and European Carp on Wild Rice and submerged aquatic vegetation will be investigated.
- We will develop joint research projects with other CB-NERR sites such as Otter Point Creek National Estuarine Research Reserve in Harford County.
- We will develop a policy on trapping and collecting to minimize harm to the flora and fauna and to minimize the accidental death of study animals.
- We will assure high quality of research at the Sanctuary by developing a quality assurance/quality control program, appropriate statistical analysis for all projects and increased funding for research equipment and computers.
- We will schedule quarterly, public seminars at the Sanctuary for sharing results.

Education initiatives

- We will increase the salaries of part-time staff to help reduce frequent job turnover.
- We will establish an Education Advisory Committee, tapping Anne Arundel County teachers.
- We will present more outreach programs at county schools.
- We will begin an education program at Patuxent Wetlands Park at Hills Bridge.
- We will organize group canoe trips from Wooton's Landing to the Sanctuary and an overnight trip from the Sanctuary to Solomons.

Volunteer initiatives

- We will develop new ways to attract and to honor volunteers.
- We will develop a set of accomplishments that long-term volunteers must achieve, such as completing a quiz to demonstrate knowledge of wetlands ecology.
- We will interview volunteers who leave the program.

The full text of "Strategic Plan: Years 2000-2003" is available at the Sanctuary. We invite everyone to read it, and we look forward to assistance in bringing it to life.
Just Smile and Say “Cheese!”

by Gordon Burton

If you’ve ever felt trapped by a friend’s offer to show you their recent vacation photos, be leery of Education Coordinator Karyn Molines saying, “Wouldn’t you like to see my salamander album? Or my new slideshow on the iMac?” An unusual treat may be in store, but eventually the eyes start to lose focus, and all the marbled patterns become a blur. Karyn now has not one, but three photo albums of marbled salamanders and hundreds of digital photos on the iMac computer, with more on the way.

This all comes about through the fortuitous acquisition of a digital camera and a pair of iMacs (Thank you FOJBJ!) combined with a record-breaking migration of Marbled Salamanders this season and many patient, persevering volunteers. This fall, salamanders were brought back to the lab by the bucket-load for weighing and measuring and, for the first time, individual photos. Of the over 700 salamanders trapped while migrating to the desiccated vernal pools in September and October, nearly 400 have been photographed. For our records, each salamander having a distinct pattern has its photo integrated with vital statistics, such as weight, length, sex, and color.

After weeks of drought, a single November rain resulted in a mass exodus of salamanders, with over two hundred captured in traps as they attempted to return to higher ground. All 245 were carefully measured and photographed before being released to continue their journey.

The photography opens up several new avenues for marbled salamander research. Karyn and volunteers pour over photos, trying to decipher the distinctive markings to recognize individual recaptures. Karyn has already identified a few recaptures, and as the photos are processed, we expect to find a high percentage of recaptures within the most recent November data. In addition, the development of pattern recognition techniques makes it possible to begin a long-term effort to study habitual behavior as well as longevity. The photos also provide valuable data for quality control of length measurements and sex identification, as well as a way to quickly and accurately measure Marbled Salamanders in the least obtrusive manner. Jug Bay is truly breaking new ground in this study, and quite a few volunteers are learning new things about Marbled Salamanders.

Gordon Burton and his wife Mary are getting to know and recognize many Marbled Salamanders at Jug Bay.

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Fall Volunteers
The following people donated their time and labor in August, September & October.

Ramon & Morgan Angus
Jerri Barbour
Mary Baron & Woody Martin
Chris Bengston
Laurel Berry
Chrisy, Mike & Susan Blackstone
June Bourdet
Amy Bourque
Gordon & Mary Burton
Danny Bystrak
Susan Calipari
Betty & Ginger Chaney
The Cooks
Mike Cunningham
Sandy Curry
Dan Dawes
Joan DeCadi
Collene Derber
Cindy Dieterle

Margie Dowsett
Dennis, Adam & Evan Duke
Matthew Feltpern
Dave Fluetch
Roesmarie Dee Fous
Eliane Franklin
Robert Frezza
Lynette Fullerton
Rebecca Halloran
Valerie Harrell
Heather Haynes
Deborah Hopkins
Diane Kearney
Carl & Cathy Knefr
Humaira Khan
Marc Killingstad
Doug Kuzniak
Bob LaPorte
Lloyd Lewis
Barbara & Chris Logan

Rick Malangin
Stephanie McCord
Jennifer Meminger
Louise & Bill Miles
Dotty Mumford
Shelly Nixon
Tom Nappi
Patrick & Siena Sanchez-O'Brien
Roderick Perry
Bob Pickett
Mike Quinlan
Sue Ricciardi
Arlene Ripley
Taj Rollins
Rogard Ross

Vinnie Salomone
Shane & Regina Salta
John Schlottor
Dana Smith
Bill Steiner
Andy Steiner
Rod & Joyce Svedberg
Kathy Szlavecz
David & Martha Turner
Nancy VanDerveer
Phyllis Veillon
Bob Wasmir
Tina & Tara Whitle
Owen & Susan Wood

Thank You!

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Many thanks to volunteer Rogard Ross for serving as the Sanctuary’s Web Master and for his donation to renew our URL address.
Last summer, intern Gregory Bulté, a student at Sainte-Foy College in Quebec, conducted an ecological inventory of the turtle populations in the Beaver Pond. "I wondered how many turtles and how many turtle species could live within the habitat of a single mammal (the Beaver) and its family," he said. During eight days of trapping, Gregory captured 158 turtles of five species: Painted, Red-bellied, Snapping, Musk, and Eastern Mud Turtles. The majority of the captures were Painted Turtles. Greg used statistical analyses to estimate the Painted Turtle population in the Beaver Pond to be between 125 and 170, which amounts to an average of 70 kg of turtle biomass per hectare.

Gregory also investigated the turtles' movements between the Beaver Pond, Otter Point marsh, and Mark's Pond. Nearly half of the turtles captured had been marked in 1998, suggesting that they tend to remain in one habitat. A few of the captured turtles had been previously captured in the marsh and in Mark's Pond. Because Mark's Pond dried up during the summer drought in 1999, the turtles caught there in 1997 may have emigrated to the more permanent Beaver Pond habitat. Gregory sees his study as "a small chapter of long-term turtle studies at Jug Bay."

During her summer internship at Jug Bay Wetlands Sanctuary, Joanna Matthews, a biology student at Rochester Institute of Technology, studied the macroinvertebrates living in Two-Run and Pindell Creeks. Macroinvertebrates are organisms that lack backbones and are large enough to be seen with the naked eye. They are good indicators of water quality because of their sensitivity to conditions in the stream as well as to changes in land use in the watershed. "I studied macroinvertebrate populations in both streams because I wanted to compare two streams with very different physical habitats," Joanna said. (Two-Run Creek's main substrate is sand, while Pindell Creek's main substrate is gravel.) Collecting 20 samples from a variety of habitats in each stream, Joanna sorted and identified nearly a thousand macroinvertebrates. Using biotic indices, she found that the water quality of both streams ranked from fair to good. Because macroinvertebrate populations are sensitive to seasonal changes, Joanna hopes that through further research on Two-Run Creek and Pindell Creek, we can learn more about these stream habitats.