

# Infused with Wildlife

## Teaching Refuges to All Students

By Karen Leggett

**While some schools offer foreign language immersion programs, Kate Waller Barrett Elementary School in Arlington, VA, offered Refuge System immersion in 2011-12. Nearly every subject, special event, field trip and family activity was infused with national wildlife refuges, wildlife or habitat conservation and ... Puddles, the Refuge System mascot.**

Barrett Elementary is an urban school just outside Washington, D.C., with 510 students in grades K-5. Almost half do not speak English as their first language and more than half are eligible for free or reduced-price lunches. Two teachers with boundless energy and imagination – Laurie Sullivan and Allyson Greene – oversee Barrett Elementary’s Project Discovery, in which students delve deeply into such topics as NASA, engineering and now wildlife. They get strong support from the school librarian, classroom teachers and principal.

Sullivan submitted a year’s worth of activities, projects and curriculum to the ToyotaTAPESTRY grant program, with a letter of support from the Refuge System. Barrett Elementary won a \$10,000 Toyota grant that has been spent primarily on computers; digital cameras; an honorarium for nature photographer Corey Hilz, who taught the children about the elements of design and fundamentals of nature photography; transportation for field trips; postage stamps and other miscellaneous supplies. Another \$2,000 grant from the ING investment company paid for binoculars and additional cameras. Most of the projects required more creativity, time and enthusiasm than money, although the Refuge System’s Washington Office provided significant quantities of brochures, banners, Refuge Week posters, Refuge System coloring books, stickers, pens, other educational items and speakers on numerous occasions.

*Teachers Cristina Torres and Laurie Sullivan help children practice costume-rearing whooping crane chicks.*

The school learned in spring 2011 that it had won the Toyota grant and so prepared the student body for the refuges-filled curriculum that beckoned for the next school year. As children were itching to end school in June 2011, the Refuge System mascot Puddles danced through a school assembly, leading everyone in a loud and lively rendition of Rock the Refuge (on YouTube at <http://bit.ly/xyB8Dl>). The song was written by Wendy Cohen, a resource teacher for gifted students, and reprised throughout the 2011 - 2012 school year. Children were encouraged to take photos of their outdoor adventures during the summer – and even visit nearby wildlife refuges – while teachers were invited to training sessions.

### Prepping Students and Teachers

About a dozen teachers came to Patuxent Research Refuge in Maryland for a half-day workshop that included a tram ride through forest, wetland and meadow habitats, viewing displays in the visitor center and discussing lessons to be used before, during and after field trips. On another occasion, Potomac River National Wildlife Refuge Complex park ranger Patricia Wood led about two dozen Barrett teachers in a Project WILD workshop. Each teacher received the Project WILD Curriculum and Activity Guide, which is aligned with the Virginia Standards of Learning.

When it was time for third- and fifth-graders to visit Patuxent Refuge in the fall, they were ready. Barrett Elementary librarian Margaret Frick had children research plants and birds they would find at Patuxent Refuge; refuge staff remarked on the student’s level of preparation.



Barrett Elementary School

*Students mailed letters to family members, friends and other refuges asking them to send back photos of Flat Puddles on a national wildlife refuge.*

Before the year was over, Barrett students would also visit Elizabeth Hartwell Mason Neck and Occoquan Bay National Wildlife Refuges in Virginia. When fourth-graders were hiking through Mason Neck Refuge and State Park in November, they took photos of plants and landscape, such as an eroding hill with a tree about to fall, water flowing over one part of the trail, leaves or fungus on a tree. One student in each hiking group recorded the exact location of each item or specimen. In April, fourth-graders visited the refuge again, carrying laminated cards of the photos and the precise location. As they found each item in this digital scavenger hunt, students had to note any changes they could observe. Students also visited Occoquan Bay Refuge to participate in bird banding.

Throughout the year, Barrett Elementary’s activities were chronicled in an extensive blog (<http://tinyurl.com/BarrettNature>), a Facebook page (<http://tinyurl.com/BarrettNatureFacebook>), photos posted on Flickr ([www.flickr.com/photos/projectdiscovery/](http://www.flickr.com/photos/projectdiscovery/)) and videos on YouTube ([www.YouTube.com/BarrettNature](http://www.YouTube.com/BarrettNature)).



Barrett Elementary School

*On a giant map of the United States, Puddles “drove” a school bus through several states every time the children read another 5,000 books. Reading is the fuel for the bus to pass by more and more national wildlife refuges.*

### Day by Day in the Classroom

Principal Terry Bratt challenged students to read 60,000 books during the school year. On a giant map of the United States, Puddles “drove” a school bus through several states every time the children read another 5,000 books. Reading is the fuel for the bus to pass by more and more national wildlife refuges. One fourth-grader came into the Discovery Lab and looked longingly at the book *America’s Wildlife Refuges: Lands of Promise*. “I’ve been waiting to read this book,” he said. “There are so many refuges, I don’t know how I’m going to get to them all.”

Sullivan and Greene collaborated with classroom teachers to incorporate refuge information, themes and activities into many curriculum areas, always making sure that they were helping teachers meet Virginia’s Standards of Learning curriculum objectives. As with most state standards, the objectives spiral through the grades, with children first learning about animals, then habitats and environments, then interactions among species.

“We could easily see that through the refuges, we could teach major concepts such as habitats, ecosystems, plants, animals, seasons and human impact on environments,” said Sullivan. “We could envision students learning about the jobs refuge managers and wildlife

biologists carry out. The students could replicate the science and mathematics skills that are used on the job, such as observation, data collection, data analysis and sharing results.”

One kindergarten lesson focused on two questions: What is a wildlife refuge? What is a habitat? Youngsters learned to use tally marks to track each piece of information they learned about an animal’s habitat (food, water, shelter, space). They learned about refuges from the Refuge System coloring book that was given to each child.

Kindergartners pretended to be whooping cranes migrating through the halls of Barrett Elementary – an iMovie of their frenzied fluttering is online.

*Barrett Elementary students learned about the entire Refuge System, including Kilauea Point National Wildlife Refuge in Hawai’i, as they received photos and information in response to their letter writing campaign.*

First-graders learned what is happening to polar bears on Arctic National Wildlife Refuge. Second-graders used a Build-a-Bird application on iPads that required them to select the right beaks, wings, habitat and body for several specific birds. Third-graders are learning about energy and renewable resources. They will use their new knowledge to become “energy consultants” and suggest ways for refuges to use more renewable resources of energy.

Fourth-graders prepared presentations for second-graders, including video clips and PowerPoint and in one case, a puppet show with marionettes fashioned from the animals in the coloring book. The students evaluated each presentation, deciding whether it answered questions in a memorable way: What is a wildlife refuge? What wildlife can be found there? What habitats can be found there? What do people do on a wildlife refuge? Why are wildlife refuges important?

Fifth-graders, who traditionally produce a bound “treasure book” filled this year’s books with their own nature writing and photos.

### Special Events

Special days and family activity nights also featured refuges at Barrett Elementary. National Fire & Emergency Response Advisor Fred Wetzel, marine specialist Brett Wolfe, and birding specialist Michael Carlo all attended Career Day from the Washington Office. Greene said there was a noticeable increase in the number of students who could envision working in nature- or science-related fields. One first-grader wants to be a mycologist because “she had learned the word and liked fungus,” explained Greene with a smile. A mother asked how to say “forest ranger” in Spanish.



Barrett Elementary School

The Rock the Refuge Celebration and Science Discovery Fair in February featured a chance to take a photo with Puddles, several participants from the Refuge System Washington Office, a live raptor show, a bird migration game in the gym, and animal and nature projects in the Discovery Lab and the library.

### Flat Puddles

Librarian Frick used Flat Puddles as a springboard to help children and their families learn about refuges all over the country. Based on the Flat Stanley children's books, Flat Puddles is a flat paper image of the blue goose. In their science enrichment class, students mailed Flat Puddles with a standard letter to friends, family members and other refuges asking them to "Please take this picture of a Blue Goose to a wildlife refuge near you. ... Find a great spot to take a picture of Flat Puddles experiencing the outdoors." Students used both traditional postal mail (with \$176 worth of postage stamps!) and email with a specially created account for PuddlesBGoose@gmail.com. The response was tremendous and immediate.

More than 500 digital photos were sent from students' family and friends after they visited distant refuges or from refuges themselves. Refuges sent stamps, brochures and a promise to send Flat Puddles to another refuge. Frick used each email or letter as an opportunity to introduce the youngest children to research. They would locate the refuge in a state, find out a little bit of information about the state and learn about an animal that lived on the refuge.

Michael Carlo, a Refuge System visitor services specialist who participated in several events at Barrett Elementary, believes the year-long involvement with refuges "created continuity, not just a memory." Carlo especially liked the powerful and visible connection that was made when several Refuge

*Third-graders wrote new lyrics to a popular song and danced during a pep rally to kick off a year-long celebration of national wildlife refuges at Barrett Elementary School.*

System staffers showed up for a single event, like the science night devoted entirely to conservation. If the entire Barrett Elementary program seems overwhelming, Carlo recommends that a refuge work with a single school to identify five goals or activities to accomplish in a single year. Then evaluate the outcomes before deciding to continue for another year.

To get the kind of results seen at Barrett Elementary, Sullivan suggests that refuges contact the science lead teacher or the person in charge of the science curriculum for the entire district. Teacher meetings offer refuge staff a chance to speak about partnership opportunities or provide simple fliers: "Would your kids like to see deer antlers? We have a lesson that meets your curriculum standards." Simple, printed material is more likely to be read than emails, say the Barrett teachers.

"Make sure teachers have an opportunity to say what they would like to see as part of any project," advises Sullivan. "Teachers at every grade level at Barrett saw our proposal before it was submitted." She also mentioned the particular appeal of Puddles and small educational items – like pencils, calendars, stickers and all those coloring books – that children can take home. Barrett Elementary concluded the school year with a Rock the Refuge assembly showcasing students' refuge-related creations. "The Refuge System is a priceless gift, reflecting the great diversity of the tapestry of life and the commitment of the United States to wildlife conservation," wrote Sullivan in her grant application, quoting from the Smithsonian Book of National Wildlife Refuges by Eric Jay Dolin. "We hope as a result of this project that our students, parents, educators and the community will better appreciate this gift and care for it in the future."

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