

1. Program Overview

Public libraries continue to stay relevant in a fast-paced, highly technological world by offering new and innovative programming, particularly STEAM (Science, Technology, Engineering, Arts, and Mathematics) programs. The Nature Study Series at Henrico County Public Library (HCPL) provides environmental science education programs that begin in the library, and then explore surrounding outdoor natural areas. The Nature Study Series of programs began at the Libbie Mill Area Library in June 2016, as a partnership between HCPL and Gumenick Properties, the developer of the placemaking complex that surrounds Libbie Mill Library. The developer granted access to a nature trail adjacent to the library for the purposes of the program.

Each Nature Study Program blends literature, nature, science, storytelling, exercise, and outdoor adventure in a manner designed to inspire curiosity in Henrico County families and to show off the practical use of the library's collection. The four themes covered during the summer and fall of 2016 included Incredible Insects, Animal Signs, Stream Ecology, and Intro to Birdwatching. These library programs are unique in their content and format and use resources found inside and outside of the library. Both fiction and nonfiction books about animals and insects are packaged with field guides and additional equipment such as a dip net and magnifying glasses into backpacks that can be checked out from the library. These programs and backpacks are highly popular, repurpose existing library materials, and are otherwise inexpensive to produce, being easily replicable at libraries across the state.

From the original Nature Study Programs at Libbie Mill Library, the program expanded to include three additional libraries, and hundreds of families have participated. The Nature Study Series will be offered annually and will continue to expand its reach and scope of natural topics through development of additional programs and offering them at more library locations.

2. Problem/Challenge/Situation Faced by Locality

“The future will belong to the nature-smart—those individuals, families, businesses, and political leaders who develop a deeper understanding of the transformative power of the natural world and who balance the virtual with the real. The more high-tech we become, the more nature we need.”

—RICHARD LOUV, *VITAMIN N: THE ESSENTIAL GUIDE TO A NATURE-RICH LIFE*

There is no question that children and families are spending less time outdoors due to a variety of factors including time constraints, access, comfort, safety, and proximity. At the same time, the HCPL boasts a rich collection of nonfiction and science-based titles for children that often get overlooked among the more literary holdings. The Nature Study Series remedies these issues by providing free, experiential nature programs through the local public library utilizing the expertise of our staff and our vibrant collections. The programs are engaging for the entire family and provide a safe, easily accessible means to explore an area of the natural world, near the comfort and familiarity of their local library, and with the guidance of library staff.

These programs also address the need for more STEAM (science, technology, engineering, art, and mathematics) programs that are available to the youth of Henrico County. The importance of Nature Literacy is recognized as a component in mental and physical health and encourages participants to be more active and engaged with the natural environment. Through a multidisciplinary approach, the Nature Study Series makes learning about literature and science fun and appealing to a wide range of patrons. These programs fulfill the HCPL mission that states, “We promote reading and lifelong learning, connect people with the information they need, and enrich community life.”

3. How Program Fulfilled Awards Criteria

Libbie Mill Library, an area library in the Henrico Public Library System, is the keystone of an 80-acre mixed use development. This placemaking development blends many features, including

housing, a lake, a pier, restaurants, offices, and a natural area with a walking trail, to create a destination in Henrico County, Virginia. This private/public partnership lends itself to creating programs that use both the library property and the features owned by Gumenick Properties, such as Jordan's Branch Creek Trail. The Libbie Mill Library opened in October of 2015. It presents an innovative design concept that embraces environmental conservation through building design, earning it a Silver LEED Certification.

Tracey Brockwell, a Public Services Specialist in the Children's Area of HCPL, saw the potential for developing programming that used both the library facilities and the adjacent Jordan's Branch Creek Trail. Her supervisor, Chris Holliman, was involved in meetings with Gumenick Properties, the developer, to create partnership programs using the development around Libbie Mill Library. It was agreed that the library would initially offer three programs during the summer.

These three programs became the first of the Nature Study Series. Each program follows a basic format of reading a book; showing related items or models; using the outside area to explore the topic; journaling; and checking out related materials if desired. These materials consisted of field guides, non-fiction books, fiction books, and Nature Backpacks.

The Nature Backpacks were developed through a partnership among Virginia State Parks, The Library of Virginia, The Science Museum of Virginia, and The Institute of Museum and Library Services. Each pack contains *Pocket Naturalist Guides*, activity pages, a bug container, a dip net, a magnifying lens, and a free pass to visit a Virginia State Park in a sturdy backpack that permits patrons to check them out for two week intervals through HCPL. These kits are stored and shelved at our five largest area libraries, but holds may be placed for pickup at any of our library locations.

4. How Program Was Carried Out

The initial three Nature Study programs consisted of Incredible Insects, Animal Signs, and Stream Ecology. Each program permitted fifteen children to register, and they were accompanied by their families. Groups ranged in size from 16 to 35 participants with two library staff. Programs lasted 75 minutes each and were held in the mornings. Incredible Insects focused on insects, their roles in the environment, and identifying specific species. Animal Signs encouraged families to observe the natural world around them to find any sign left or made by an animal including tracks, nests, drays, scat, burrows, feathers, fur, webs, egg pieces, and owl pellets. Stream Ecology stressed the importance of the watershed by allowing the participants to look for macrobenthic invertebrates in Jordan's Branch Creek and testing water for dissolved oxygen, nitrate, pH, and phosphate—all indicators of stream health.

Safety was of the utmost importance throughout programs. The instructor individually brought a five-gallon bucket of water from the stream to the trail for the children to access. Other dangers such as poison ivy were identified so participants would know to avoid it during the program and in the future. In each program, more than a dozen species were identified and important features of the habitat were learned.

After the success of the first few programs, Rick Samuelson, Youth Services Coordinator, began developing Birdwatching Backpacks for circulation and an Intro to Birdwatching workshop as part of the Nature Study Series. The Birding Backpacks include binoculars, activities, a birding guide, and two bird related non-fiction books. Like the Nature Backpacks, they check out for two weeks and are located at our five largest branch libraries. The Intro to Birdwatching Program was offered at three additional libraries, Tuckahoe, Twin Hickory, and Varina. These programs were very popular and followed the same format as the previously mentioned Nature Study Programs with the addition of a PowerPoint presentation to help with the identification of local birds. In addition,

Henrico County Recreation and Parks provided information on local birdwatching opportunities at county parks. Our library graphic designer took this information and created a program handout that included a map of parks on one side and a starter “life list” on the other side to help participants begin their hunt for local birds. We spotted and identified many species on the individual outings.

Each program in the Nature Series promotes STEAM (science, technology, engineering, art, and mathematics) education. The scientific method was the overarching theme with ecology and environmental science being focus areas. Technology was utilized through digital field guides and a PowerPoint presentation. Art was encouraged through drawing and writing in nature journals, and math was used for tracking species identified and water quality testing.

All of the programs were well received and attended, with some requiring waitlists. Participants were very positive in their comments with several families attending multiple programs. Since attending the Nature Series Programs, families continue to visit the outdoor areas adjoining the libraries, check out resources related to the topics, and share any natural “finds” with library staff when they visit. Families continue to inquire about future Nature Study programs to be offered in 2017, and ask when they can register.

5. Financing and Staffing

The cost of the Nature Study Series was minimal. Staff time for development was the largest factor, in addition to the cost of circulating materials that had been planned independent of the workshops. Many of the items used could be substituted, depending on the type of program offered, the type of natural area available, and local habitats, flora, and fauna.

Equipment utilized included the following:

Digital Projector- Free (county-owned)

Large Screen – Free (county-owned)

Apple TV – Free (county-owned)

iPad – Free (county-owned)

Field Guides – Free (county-owned)

Loupes – Free (owned by presenter)

Water Testing Equipment – Free (owned by presenter)

Binoculars & Monoculars – \$410

Nature backpacks – Free (received through Library of Virginia Library Services and Technology Act ([LSTA] grant project)

Birding backpacks - \$1,560

Total Cost - \$1,970

6. Program Results

The success of the Nature Study Series was measured by attendance numbers, the circulation statistics, and through feedback from participants. The Nature Study Series consisted of seven programs at four locations with a total of 178 participants. The Nature Backpacks were borrowed a total of 114 times between July 2016 and February 2017. The Birding Backpacks were borrowed a total of 59 times between October 2016 and February 2017.

The success with the community is evident in the demand and interest in the Nature Study Programs and the participants' overwhelmingly positive reactions. One participant emailed Tracey Brockwell to say, "Thanks so much for such a great program! My daughter has been pointing out bird sounds to the rest of the family this week, and we've been especially enjoying the bird books! We're so grateful for the library and staff and the wonderful programs!" Another family emailed a series of photographs showing their on-trail use of the Nature Backpack (see supplemental materials).

These same sentiments were expressed verbally numerous times by patrons after attending the programs. HCPL plans to expand these programs in 2017, to include more topics and additional sessions at the participating libraries.

The Nature Study Series offered by HCPL is a unique programming series that demonstrates a successful partnership between public and private organizations to benefit the citizens of the County. These programs required the cooperation of a local government agency, HCPL, and a private developer, Gumenick Properties. The programs also utilized the Nature Backpacks which were developed through a partnership among state agencies and national non-profits, including Henrico County Recreation & Parks, Virginia State Parks, The Library of Virginia, The Science Museum of Virginia, and The Institute of Museum and Library Services. These programs can be easily customized and replicated at libraries across the state because they repurpose existing library materials, can be led by library staff, and require only the purchase of low-cost supplies.

The Nature Study Programs provide a new service through Henrico County Public Libraries in the form of free, family oriented, outdoor programs. They also provide environmental education and a level of nature literacy that empowers families to explore the outdoors and feel comfortable taking their children to local parks, trails, and other outdoor facilities. The Program has been a big success, as measured by the level of participation and ongoing interest in continuing the series.

7. Brief Summary

The Henrico County Public Library developed a Nature Study program series for children and families at the Libbie Mill library in 2016, that has been successful in empowering hundreds of library users to explore the outdoors. Developed in partnership with the Henrico County Department of Recreation and Parks as well as the private developer Gumenick Properties, the popular program series benefited from the collaboration of local public and private groups. The programs, which include Incredible Insects, Animal Signs, Stream Ecology, and Intro to Birdwatching, are led by library staff and incorporate library books and technology, utilize the expertise of the Department of Recreation and Parks, and take place on a nature trail owned by Gumenick Properties.

The programs are complemented by Nature Backpacks and Birdwatching Backpacks, which can be checked out from the library for two weeks. Backpacks include passes to state parks, library books on natural science, field guides, and scientific tools like magnifying lenses and a dip net in the Nature Backpacks, or Binoculars in the Birdwatching Backpacks. Nature backpacks were obtained through an IMLS funded grant from the Library of Virginia, and Birdwatching Backpacks were created by the Henrico County Public Library with input from Recreation and Parks. The programs have been so successful that they have been expanded to all Henrico County area libraries and will continue in 2017. The programs are low-cost, easily customizable, and could be replicated at libraries across the state.