

# William T. Hornaday Conservation Awards

## Silver Medal Application



Project 1



Project 2



Project 3



Project 4



Project 5

William O'Brochta

Boy Scout Troop 17

Roanoke, Virginia      2010

*Application for the*

# William T. Hornaday Bronze or Silver Medal

Name \_\_\_\_\_ Date of birth \_\_\_\_\_

Applicant's address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

**Current Registration.** Check one and indicate unit number:

☐ Boy Scout Troop No. \_\_\_\_\_ ☐ Venturing Crew No. \_\_\_\_\_

☐ Varsity Scout Team No. \_\_\_\_\_

**Boy Scout:**

Rank at time of application \_\_\_\_\_ Became a First Class Scout on \_\_\_\_\_  
(DATE)

**Venturer:**

Check the awards that you have earned as a Venturer:

☐ Bronze Award

☐ Quest Award

☐ Gold Award

☐ Ranger Award

☐ Silver Award

☐ Quartermaster Award

☐ Trust Award

☐ Other \_\_\_\_\_

Council \_\_\_\_\_ District \_\_\_\_\_

Unit leader's name \_\_\_\_\_

Telephone No. \_\_\_\_\_

Conservation adviser's name \_\_\_\_\_

Professional conservation affiliation \_\_\_\_\_

Telephone No. \_\_\_\_\_

**Statement of Applicant**

*I have thoroughly read the requirements for this award. I have worked closely with my conservation adviser in the design and execution of each project. The work summarized in this application is of my design. I request consideration for receiving the William T. Hornaday medal.*

Applicant's signature \_\_\_\_\_ Date \_\_\_\_\_



*Endorsements and Actions for the*

# William T. Hornaday

## Bronze or Silver Medal

Applicant's name \_\_\_\_\_

### Conservation Adviser's and Unit Leader's Approval

*I have worked closely with the applicant named above in the design and execution of the required projects. I have reviewed this application and recommend that the applicant receive the William T. Hornaday medal (check one):*

Bronze medal ☐ Silver medal ☐

Adviser's signature \_\_\_\_\_ Date \_\_\_\_\_

Unit leader's signature \_\_\_\_\_ Date \_\_\_\_\_

### Council Conservation Committee's Approval

*The council conservation committee has reviewed this application, interviewed the applicant,\* and determined that the applicant demonstrated leadership in the design and execution of the projects described. The applicant has met all requirements for the William T. Hornaday medal indicated above and has this committee's approval and endorsement.*

Chair's signature \_\_\_\_\_ Date \_\_\_\_\_

### Scout Executive's Approval

*This application is forwarded to the national office of the Boy Scouts of America with my full approval and recommendation for the William T. Hornaday medal noted above. My additional comments are:*

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Scout executive's signature \_\_\_\_\_ Date \_\_\_\_\_

**Note to local council:** Following council approval, forward the completed application to:

Director of Conservation  
Boy Scouts of America, S209  
1325 West Walnut Hill Lane  
P.O. Box 152079  
Irving, TX 75015-2079

The application will be submitted to the Hornaday Awards Committee for appropriate action.

\*For reasons of distance or geography, an ad hoc committee in the applicant's community may be designated for the interview.

*Additional Requirements for the*

# Hornaday Bronze and Silver Medals

**Boy Scout:**

**Bronze Medal.** Earn the Environmental Science merit badge, plus at least three additional badges shown in **boldface**, and any two others listed.

**Silver Medal.** Earn all merit badges listed below in **boldface**, plus any three others listed.

| MERIT BADGE                         | DATE COMPLETED | MERIT BADGE                 | DATE COMPLETED |
|-------------------------------------|----------------|-----------------------------|----------------|
| <b>Energy</b>                       |                | Insect Study                |                |
| <b>Environmental Science</b>        |                | Landscape Architecture      |                |
| <b>Fish and Wildlife Management</b> |                | Mammal Study                |                |
| <b>Forestry</b>                     |                | Nature                      |                |
| <b>Public Health</b>                |                | Nuclear Science             |                |
| <b>Soil and Water Conservation</b>  |                | Oceanography                |                |
| Bird Study                          |                | Plant Science               |                |
| Fishing                             |                | Pulp and Paper              |                |
| Fly-Fishing                         |                | Reptile and Amphibian Study |                |
| Gardening                           |                | Weather                     |                |
| Geology                             |                |                             |                |

**Venturer:**

| RANGER ELECTIVE            | DATE COMPLETED | RANGER CORE         | DATE COMPLETED |
|----------------------------|----------------|---------------------|----------------|
| <b>Ecology</b>             |                | <b>Conservation</b> |                |
| <b>Plants and Wildlife</b> |                |                     |                |

**Applicant:**

*I have completed the (check one):* ☐ *Boy Scout* ☐ *Venturer requirements listed above and I am applying for the William T. Hornaday medal.*

Applicant's signature \_\_\_\_\_ Date \_\_\_\_\_

**Unit Leader:**

*I have reviewed this application and the requirements for the William T. Hornaday medal. The above requirements have been met, and the dates indicated accurately reflect our unit's advancement records.*

Unit leader's signature \_\_\_\_\_ Date \_\_\_\_\_

*Project Descriptions for the*

# William T. Hornaday

## Bronze or Silver Medal

For each project, attach an executive summary, complete project description, and any supporting materials to this application. You may follow the structure that is identified in the Eagle Scout Leadership Service Project Workbook, No. 18-927E, to help you record the plans and execution of each project. Be sure to identify the conservation issue or problem that each of your projects was designed to address as well as any relationship that your projects may have to each other. Individual work items cannot be counted in more than one project.

At least three projects are required for the bronze medal and at least four projects are required for the silver medal. You may use your Eagle Scout project as a Hornaday project if it meets the aims and objectives of the William T. Hornaday awards program, but only one project can be for the benefit of BSA property. You may also use one project for which you have already earned the William T. Hornaday badge. Conducting an inventory or developing an educational program may qualify as a Hornaday project if it is substantial enough, but the applicant should limit these types of projects so that Dr. Hornaday's expectation that "actual results (on the ground) count heavily" may be met. Each project must address a different conservation area. For a list of approved categories and additional information, please see the official William T. Hornaday Awards Web site at <http://www.scouting.org/awards/hornaday>.

**Project One**

Project category \_\_\_\_\_

Project title \_\_\_\_\_

Principal adviser to this project if other than the conservation adviser:

Name \_\_\_\_\_

Telephone No. \_\_\_\_\_

Date project completed \_\_\_\_\_

**Project Two**

Project category \_\_\_\_\_

Project title \_\_\_\_\_

Principal adviser to this project if other than the conservation adviser:

Name \_\_\_\_\_

Telephone No. \_\_\_\_\_

Date project completed \_\_\_\_\_



*Continued Project Descriptions for the*

# William T. Hornaday

## Bronze or Silver Medal

### Project Three

Project category \_\_\_\_\_

Project title \_\_\_\_\_

Principal adviser to this project if other than the conservation adviser:

Name \_\_\_\_\_

Telephone No. \_\_\_\_\_

Date project completed \_\_\_\_\_

### Project Four

Project category \_\_\_\_\_

Project title \_\_\_\_\_

Principal adviser to this project if other than the conservation adviser:

Name \_\_\_\_\_

Telephone No. \_\_\_\_\_

Date project completed \_\_\_\_\_

### Project Five

Project category \_\_\_\_\_

Project title \_\_\_\_\_

Principal adviser to this project if other than the conservation adviser:

Name \_\_\_\_\_

Telephone No. \_\_\_\_\_

Date project completed \_\_\_\_\_

### Project Six

Project category \_\_\_\_\_

Project title \_\_\_\_\_

Principal adviser to this project if other than the conservation adviser:

Name \_\_\_\_\_

Telephone No. \_\_\_\_\_

Date project completed \_\_\_\_\_

Wildlife Habitat Development Project  
William O'Brochta  
Spring 2007

**Summary:**

My Eagle Project was formulated to achieve two goals: creating a habitat for insects and plants to live and providing aesthetic appeal. This project is considered to be in the Fish and Wildlife Management category. The project was done at a middle school in Leesburg, Virginia because the surrounding area had recently been developed and wildlife had fewer places to live and feel safe. It made a lovely place for school kids to linger and for them to interact with other animals. The plants chosen were native to the area including the Magnolia, Fringe Tree, Azalea, Daffodil, Redbud, and Viburnum. The plants are thriving in the soil that we helped create. Animals, including squirrels, chipmunks, rabbits, and small rodents, are now encouraged to live in the habitat that I created, completing an ecosystem that had a hole in it due to the development. Articles about this project and a photograph appeared in two Leesburg newspapers.

**National Judging Criteria:**

- This project was in the Fish and Wildlife Management category.
- A total of 200 hours was needed to complete the planning and execution of the project.
- This project was my own idea and was conceived after viewing the large area of wasted space in front of the school and the great amount of development that destroyed animal habitats.
- Dozens of other scouts and adults were involved in this project.
- A landscape architect with over thirty-five years of experience created the design.
- There was a strong emphasis throughout the project on native plants as well as environmentally friendly landscaping methods.

**Planning:**

**Organization:** Simpson Middle School is the major benefiting organization. They will benefit from a landscaped front area because it will add interest, beauty, and ascetic appeal to an otherwise drab school-front. My contact person for the landscaping project was Mr. John Bannister, the principal of Simpson.

Another benefiting organization is the wildlife population. They benefit because the project provides wildlife a place to live and interact with each other. This habitat will help promote wildlife growth in the area.

**Design:** Formerly at Simpson, the front area was not landscaped at all, just a grass field over hard clay measuring twenty-one feet by sixty-two feet. Photos are attached. The design for the front area was straightforward. The general idea was to plant low maintenance plants, to include a walkway, and add a bench and a picnic table. At the ends of the area, the design called for a barrier to be installed to prevent kids from walking on the grass. The goal for the bench and table was to anchor them into the ground to prevent theft. This design was the result of input from the school principal, assistance from a Meadows Farms Landscape Architect, and discussions with various scout helpers. As a contingency, the project could have been scaled up or down to fit time, money, and help constraints. One option for scaling up the project was to landscape a nearby side area and/or to add

night lighting for security after dark. One option for scaling down the project was to reduce the size of the area to be landscaped. A scaled design drawing of this landscaping project is shown below.

**Materials:** The available amount of money to buy materials greatly influenced the overall size of the project. In the Leesburg area, there are multiple nurseries and home centers from which to choose. For this project, cost was a big factor so I used the cheapest source. Options included Home Depot, Lowe's, Bluemont Nurseries, and Meadows Farms. A materials list was developed and approved as part of the Eagle Project.

**Leadership & People:** Leadership and people are an important part of an Eagle Project. A total of 150 labor hours were estimated for this project. The plan called for a small crew to be assembled early in the project to assist with the design and another small crew to assemble materials at the site in preparation for the actual landscaping work. In this project, crew leaders were assigned to help manage certain parts of the project. I supervised the crew leaders who, in turn, supervised the other workers. I estimated that about fifteen people would be needed on the big landscaping crew and that they would work for six to eight hours. I estimated that the small design crew would have two or three people who spend about an hour working. The small preparation crew was planned to have about five people working for two to four hours. Adults were needed to help crews if something went wrong, to operate power tools, and to shuttle people and materials.

**Schedule:** This project was conducted in phases and included the planning phase, design phase, landscaping phase, and completion phase. The total duration of the project was estimated to be twenty-one weeks. Time was included in the schedule as contingency for weather, labor availability, or other delays. A timeline showing the major tasks and events was included as part of the Eagle Project Plan.

**Money:** The amount of money required for this project was based largely on the cost of the materials. Mr. John Bannister, the former principal of Simpson Middle School, did indicate that the school could supply the full \$4,800 amount that was required.

**Safety:** The safety hazards of this undertaking included cuts and scrapes from shovels or wood, tripping, and possible heat exhaustion. A first aid kit and emergency cell phone were at the site in case of an incident.

**Food & Restroom:** During the project, food, water, and restrooms were required. Food consisted of Subway sandwiches. Water came from spigots outside the school. Other drinks like Gatorade were also provided. Restrooms were available inside the school.

**Before Photographs:**



Simpson Middle School Aerial

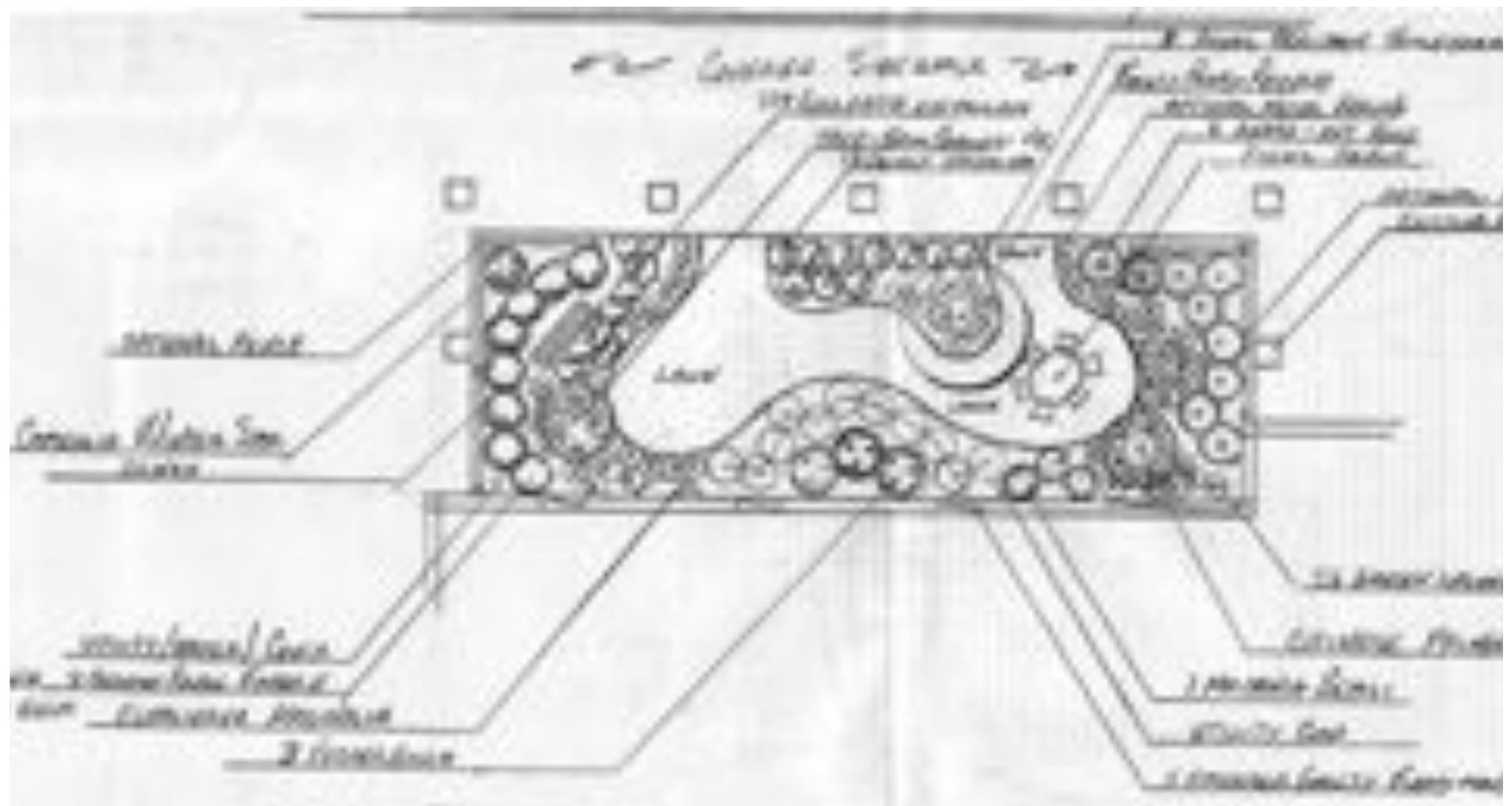


Project Area



Simpson Middle School Front

### Design Drawing:



## Carrying Out the Project:

**Summary:** Animals now have a place to congregate and the front of Simpson Middle School has an inviting entrance. This project was completed with only modest deviations to the plan. A total of 190 work hours were used during all phases of this project. It ended up costing \$4,300, which is \$500 less than the planned amount.

**Leadership:** During the project, I was the leader and decision maker. I followed the plan by establishing several work crews who reported to me. On June 2, the day of the Phase One Landscaping, I was the sole person in charge. All 11 scout and adult volunteers reported to me as they worked to prepare the site for planting; this involved breaking up the clay with pick axes and a garden tiller. On June 9, the day of the Phase Two landscaping, I was the head leader with three crew leaders reporting to me. Oliver Stone and Brandon Hinke each ran boy crews who did planning and mulching. Mr. Fred Hinke ran the adult crew who constructed the stone path. Each crew leader, Oliver, Brandon, and Mr. Hinke, were given written job assignments with specific duties assigned; they followed step-by-step instructions about which plants to plant in what order. The three crew chiefs ran crews of about six to eight people each. I periodically met with each crew chief during the day to discuss their progress and resolve problems. The below chart shows the number of hours worked by different individuals on this project.

| Name              | Hours        |
|-------------------|--------------|
| William O'Brochta | 53.25        |
| Michael O'Brochta | 20.25        |
| Joshua Gardner    | 9            |
| Noah Gardner      | 9            |
| Oliver Stone      | 9            |
| Joshua Guszak     | 5.25         |
| Tyler Cook        | 8.5          |
| Ian Claar         | 4.5          |
| Rodger Cook       | 4.5          |
| Ian Pham          | 2.25         |
| Rich Claar        | 4.5          |
| John Guszak       | 4.5          |
| Fred Hinke        | 4.5          |
| Brandon Hinke     | 4.5          |
| Paul Levesque     | 4.5          |
| Ashton Chandler   | 4.5          |
| Ross Clark        | 4            |
| Matt Stevens      | 4            |
| Ross Clark, Sr.   | 4            |
| Jake Collins      | 2            |
| John Guszak       | 3            |
| Colleen Bowlds    | 4            |
| Mr. Bowlds        | 4            |
| Mark Newton       | 3            |
| Liam Klevin       | 3            |
| Patrick Wiley     | 2            |
| Ryan Bowlds       | 0.75         |
| Janice Bowlds     | 0.75         |
| Phil Cangalosi    | 0.75         |
| Andrew Cangalosi  | 0.75         |
| <b>Total</b>      | <b>188.5</b> |

**Benefit:** As mentioned above, both the wildlife and Simpson Middle School already benefited from this project. Life is apparent throughout the habitat and will become more

prominent once the plants really start to grow. Some people have been using the area that was landscaped as a place to sit and stroll while others have made positive remarks about it. This project has also prompted the Environmental Awareness Council at the school as well as others begin making plans to landscape other parts of the school to make other areas for wildlife to live.

**Changes:** Only four modest changes were made to the project as it progressed. The Phase One landscaping crew was not able to complete all of their tasks because the ground was harder than expected, so a second small crew finished the job before the Phase Two landscaping crew arrived. Meadows Farms was not able to deliver the plants to the correct location; therefore, they delivered to an area farther out causing longer trips to get materials. The hard ground and the delivery location caused the increase in labor from 150 hours to 190 hours. The picnic table was eliminated from the design to provide more space to walk in the grass and to leave a larger area for habitat development. Without the picnic table, the area looked nicer overall. The project cost \$500 less overall, from \$4,800 predicted to \$4,300 actual. This decrease is due in part to the large discount given to us by Meadows Farms. The project, even though there were more hours, took five weeks fewer than planned, from twenty-one weeks predicted to sixteen actual. This change was caused by several tasks being completed at one time and the optional reworking of the landscaping was not necessary. All other aspects of the project were completed according to the plan.

**After Photographs:**

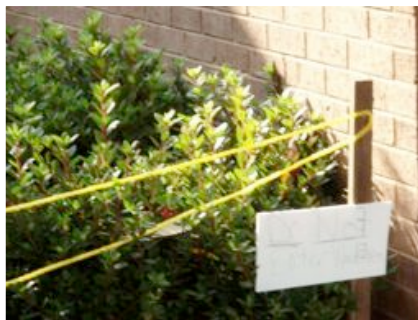


Final Project



Sign

**During Photographs:**



**Update:** After two years, the landscaped area has grown somewhat and is still being maintained by the school. Overall, the project has had a lasting benefit on both students and the local wildlife.



Landscaped Site in 2009

A14 WOOD★STAR AUGUST 27, 2007

### Badges

#### ● O'Brochta

William O'Brochta has been awarded Boy Scouting's highest rank of Eagle. He is the youngest member of Leesburg's Troop 982 to earn this rank.

In fulfilling the requirements for Eagle, O'Brochta landscaped the front of J.L. Simpson Middle School in Leesburg, where he will be an eighth-grader this fall. The project involved 200 hours for the planning and leadership of dozens of boys and adults.

He is the son of Michael and Elizabeth O'Brochta of Leesburg.

Loudoun Times Mirror Newspaper Article

## Eagle Scout Ranking

William O'Neil, the program manager of Leesburg's Troop 962 at 15, joins the other 15 members of his team naturally to salute the rank of Eagle Scout.

Fulfilling the requirements for Eagle Scout rank and at one point awarded William a leadership role of 11, Troop 962's 15th member has not only completed several goals. The project took 100 hours of planning and leadership of about 100 hours, and while in this position he will and planned over 100 hours and more.

William's consistent drive toward accomplishment is evident. After joining the Cub Scouts, he earned more badges and pins than any boy in the history of Troop 962. In Boy Scouting he achieved this success by developing positive relationships with his leadership helped other boys earn additional merit badges. William's former principal at Troop 962 stated, "We have level of maturity and responsibility that is indicative of a boy many years his senior."

Troop 962 has 10 teams who are active throughout the year camping, hiking and doing field trips. The troop has earned from a high-adventure training trip to North Carolina to Illinois and backpacking in Phoenix to New Mexico.

"I try to lead by example by knowing what I am doing is helping others," he said.



Eagle Scout William O'Neil poses proudly with Daniel H. Rogers (Troop 962's principal) John Rogers (Troop 962's principal).

Leesburg Today Newspaper Article

Leesburg County  
Public Schools

*J. Leighton Simpson Middle School*  
400 Evergreen Mill Road  
Leesburg, Virginia 20176  
870.202.2640



June 11, 2019

Mr. William O'Brien  
3226 Piedmont Drive  
Rounder, Virginia 24014

Dear William,

I am writing to express my appreciation for the landscaped area in front of J. L. Simpson Middle School. Students now have the opportunity to spend their lunch outside on the wonderful bench and enjoy a more natural atmosphere compared to the cafeteria.

Furthermore, this project has been beneficial to the local wildlife community who now has a habitat in which to live. The area around our school has been cleared to allow for housing development, displacing local wildlife. Many animals will feel safer living in this mature landscaped area because it offers protection that does not exist in the surrounding areas.

Thank you for helping our school and local wildlife community with this project. The result has been a great benefit for all parties involved. Best wishes.

Sincerely,

A handwritten signature in black ink, appearing to read "Chad W. Runkle".

Chad W. Runkle, Principal  
J. L. Simpson Middle School

Above is a letter of appreciation from the current principal of Simpson Middle School.

Habitat For Humanity Energy Conservation Program  
William O'Brochta  
Spring 2008

**Summary:** This project consists of researching energy conservation and implementing an energy conservation program for families moving into Habitat for Humanity Hungary houses in the small remote town of Hajdúböszörmény. This project falls into the Energy Conservation category. Since this country in general and this town specifically have little experience with and appreciation for energy conservation, the lasting value of this project will be raising the level of awareness of the benefits of conserving energy. The project consists of energy conservation in water, gas, and recycling. A low budget for minimal, if any, materials was expected.

**National Judging Criteria:**

- This project was in the Energy Conservation category.
- A total of 240 hours were needed to complete the planning and execution of the project.
- This project was my own idea and was created and organized after a discussion with the director of Habitat for Humanity Hungary, where he expressed a concern about families being able to pay utility bills.
- This project involved dozens of families and American volunteers.
- Hungarian utility companies and government reports provided much of the information. I also worked with the Director of Habitat and the local project manager to discuss the best way to educate Hungarians about energy conservation.
- The entire purpose of this project was to educate Hungarians about natural resource conservation through different sessions with adults and children.

**Planning:**

**Benefits:** This project benefits the families that receive Habitat houses, the local environment, the local government, and the town population. The families will benefit from reduced costs of living in their homes and the local environment will benefit from a reduction in emissions related pollution. The local government will benefit by the reduction in need to supply power, and the townspeople will benefit from an increased level of awareness about energy conservation.

**Design:** This project will be designed so that the families are encouraged to meet a benchmark goal of a certain energy number, i.e. x number of kilowatt hours per month, x number of liters of water, and x number of recycled products. The way this will work is I will do a study of the house and come up with a number of kilowatts that should be used, liters of water consumed, and a number of containers that can be recycled. These numbers would be based on the family size, efficiency of appliances, and house size. The family would agree to conserve energy and use these numbers as a basis for energy conservation. They would agree to track their progress on a provided chart. The families will learn about the energy conservation project through a series of meetings. A small,

informal meeting will take place to present the families with a questionnaire about their current energy habits. The questionnaire will then be used to tailor the following meetings. In two meetings with the adult family members, I will explain what energy conservation is and how the families can conserve energy, detailing the program outlined above. One separate meeting will take place with the children to inform them of what they can do to conserve energy. The families will then be asked and encouraged to take part in tracking their progress and attempting to meet the energy goals. Brochures and posters would be created to inform and encourage the families to take part in this program. Publicity about energy conservation would be received from contact with town government officials and the local media. Recycling containers would be provided by the government or by Habitat to put the materials for recycling. After the end of the project, follow-up will occur. On a quarterly or yearly basis, Habitat will prepare an energy program report compiling all the information from the families and telling the public about how everyone is doing. During the dedication of the Habitat houses, the program will be mentioned and possibly put in the press release.

**Materials:** The local government will donate the recycling materials or suggest a recycling area close by. The containers for recycling will consist of large bins for bottles, cans, and paper. The trash collection company would provide the transportation of recycling to the meltdown plant on a weekly basis.

**Leadership and People:** Most of the labor required is for people to interact with each other; construction and installation will not be required. I will initiate all the discussions with Habitat for Humanity Hungary, the local government, and the families. This requires the support of a translator who would come either from Habitat or from a local school.

**Schedule:** This project will be completed before the families move into their new homes in June. Between now and then all of the planning, design, and leadership will be completed and this energy conservation program will be established. Following this project, the families will actually move into their homes and begin conserving energy. It is possible that this project will serve as a model for the other Habitat For Humanity home construction locations within Hungary.

**Money:** I do not anticipate an expensive investment from anyone. The donation of recycling containers will be addressed through meetings with the appropriate people.

**Safety:** I do not foresee any safety issues resulting from this project. A first aid kit is on hand at the worksite in case anything goes wrong.

**Assessment:**

**Summary:** The project was a success. All aspects of the project were completed with only two minor adjustments to the plan. The project went well and I think that the families benefited from it. Overall, the time from start to finish for this project was about two months. No money was involved in this project.

**Leadership:** During the project, I was the leader and decision maker. I followed the plan by discussing energy conservation with the family members. I made the decisions about the content of these meetings based on personal experience, discussions with Habitat employees, and a questionnaire that the families filled out. I initiated the questionnaire and found ways for documents to be translated as necessary. After the discussions I spoke with Habitat employees to get their reactions to the meetings. I crafted documents for the project and had them translated. After the meeting, I created documents to be used in the actual program and had them translated. Samples of some of the documents used are below. This project took 240 hours to complete. The below chart shows the number of hours worked by different individuals on this project.

| <u>Name</u>       | <u>Hours</u> |
|-------------------|--------------|
| William O'Brochta | 165          |
| Sandor Kerekes    | 4.5          |
| Gyorgy Sumeghy    | 5            |
| Habitat Families  | 60           |
| Arpad Uzonyi      | 3            |
| <b>Total</b>      | <b>237.5</b> |

**Benefit:** Habitat for Humanity was a major beneficiary of this project. They received plans for an energy conservation program and analyzed how it is supposed to work. The work I did with the families was educational for them, should they decide to use this program in additional locations and projects. The family members and the environment also benefited from this project. The family members were able to learn about energy conservation. They were given an opportunity to sign up for a program that promotes energy conservation. Just learning about energy conservation was a benefit. If the families decide to take part in the program, they will benefit from reduced costs each month. The environment benefits from the reduced pollution created by using this energy.

**Changes:** Very few changes occurred in this project. I decided to combine all the meetings into one presented twice to different people. This meeting covered all the listed topics. The combination of meetings saved time for the translator. It made it easier for him to only translate twice instead of more times. The only other change concerns the recycling containers. The town provided recycling containers for the neighborhood that these houses are being built in, eliminating the need for more recycling containers.

## Materials Used During the Project:

Below are samples of the documents I used for the project.

| Good Energy Consumption Goals |              |             |              |            |
|-------------------------------|--------------|-------------|--------------|------------|
|                               | Yearly Usage | Yearly Goal | Yearly Price | Goal Price |
| <u>Water (Meters)</u>         |              |             |              |            |
| 1 Person                      | 120          | 110         | 28800        | 26400      |
| 2 People                      | 240          | 220         | 57600        | 52800      |
| 3 People                      | 360          | 330         | 86400        | 79200      |
| 4 People                      | 480          | 380         | 96000        | 91200      |
| 5 People                      | 600          | 570         | 144000       | 136800     |
| 6 People                      | 720          | 690         | 172800       | 165600     |
| <u>Gas (Cu Meters)</u>        |              |             |              |            |
| 1 Person                      | 1400         | 1300        | 53200        | 49400      |
| 2 People                      | 2800         | 2600        | 106400       | 98800      |
| 3 People                      | 4200         | 3900        | 159600       | 148200     |
| 4 People                      | 5600         | 5200        | 212800       | 197600     |
| 5 People                      | 7000         | 6500        | 266000       | 247000     |
| 6 People                      | 8400         | 7800        | 319200       | 296400     |
| <u>Electricity (kWh)</u>      |              |             |              |            |
| 1 Person                      | 565          | 555         | 18080        | 17760      |
| 2 People                      | 1130         | 1110        | 36160        | 35520      |
| 3 People                      | 1695         | 1665        | 54240        | 53280      |
| 4 People                      | 2260         | 2220        | 72320        | 71040      |
| 5 People                      | 2825         | 2775        | 90400        | 88800      |
| 6 People                      | 3390         | 3330        | 108480       | 106560     |
| <u>Money Saved</u>            |              |             |              |            |
| 1 Person                      | 6520         |             |              |            |
| 2 People                      | 13040        |             |              |            |
| 3 People                      | 19560        |             |              |            |
| 4 People                      | 21280        |             |              |            |
| 5 People                      | 27800        |             |              |            |
| 6 People                      | 31920        |             |              |            |

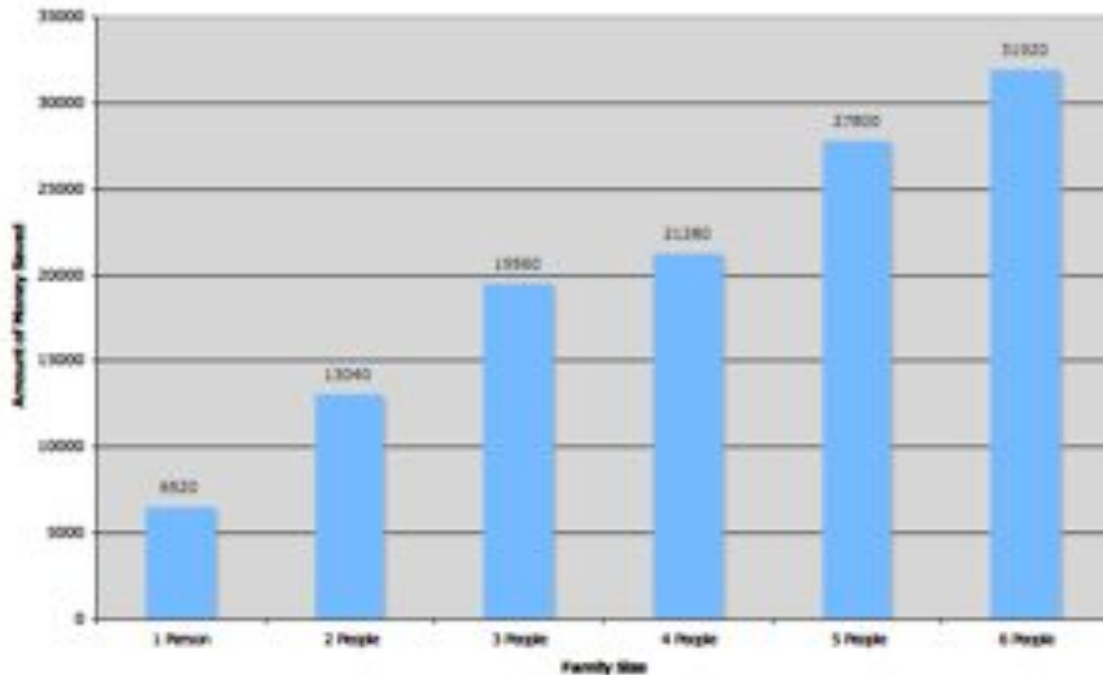
Chart showing recommended usage for common utilities as well as the amount of money saved in Forint (200 Forint to one dollar). A family of six could save 160 dollars by reducing their energy consumption. The Yearly Usage column shows the typical amount of energy used before the program began. The Yearly Goal column shows a potential reduction in energy use. Yearly and Goal Prices reflect the amount utilities would charge based on 2008 energy costs. Money Saved shows the amount of Forint potentially saved if the energy conservation program was implemented.

### Good Energy Consumption Goals

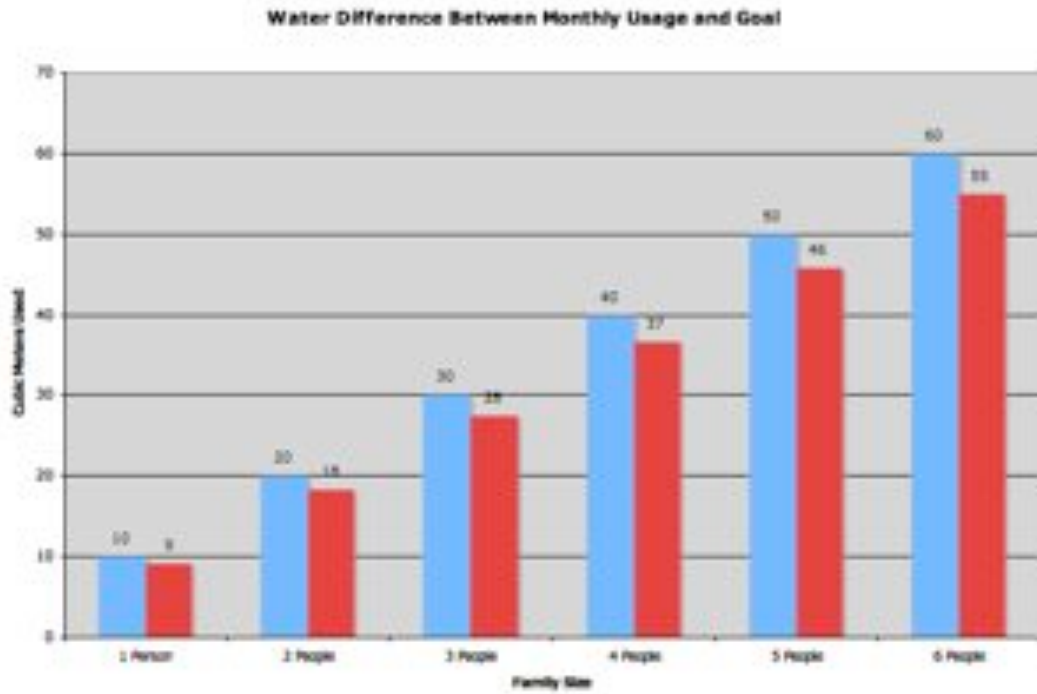
|                          | Yearly Usage | Monthly Usage | Yearly Goal | Monthly Goal | Price of Energy |
|--------------------------|--------------|---------------|-------------|--------------|-----------------|
| <b>Water (Cu Meters)</b> |              |               |             |              |                 |
| 1 Person                 | 120          | 10            | 110         | 9            | 240 HUF per m   |
| 2 People                 | 240          | 20            | 220         | 18           |                 |
| 3 People                 | 360          | 30            | 330         | 28           |                 |
| 4 People                 | 400          | 40            | 440         | 37           |                 |
| 5 People                 | 600          | 50            | 550         | 46           |                 |
| 6 People                 | 720          | 60            | 660         | 55           |                 |
| <b>Gas (Cu Meters)</b>   |              |               |             |              |                 |
| 1 Person                 | 1400         | 117           | 1300        | 108          | 1050HUF per GJ  |
| 2 People                 | 2800         | 233           | 2600        | 217          |                 |
| 3 People                 | 4200         | 350           | 3900        | 325          |                 |
| 4 People                 | 5600         | 467           | 5200        | 433          |                 |
| 5 People                 | 7000         | 583           | 6500        | 542          |                 |
| 6 People                 | 8400         | 700           | 7800        | 650          |                 |
| <b>Electricity (kWh)</b> |              |               |             |              |                 |
| 1 Person                 | 565          | 47            | 555         | 46           | 32HUF per kWh   |
| 2 People                 | 1130         | 94            | 1110        | 93           |                 |
| 3 People                 | 1695         | 141           | 1665        | 139          |                 |
| 4 People                 | 2260         | 188           | 2220        | 185          |                 |
| 5 People                 | 2825         | 235           | 2775        | 231          |                 |
| 6 People                 | 3390         | 283           | 3330        | 278          |                 |

This chart represents the data in the previous chart in terms of a monthly goal, easily compared with the utility bills to determine if a family is meeting the energy consumption goals.

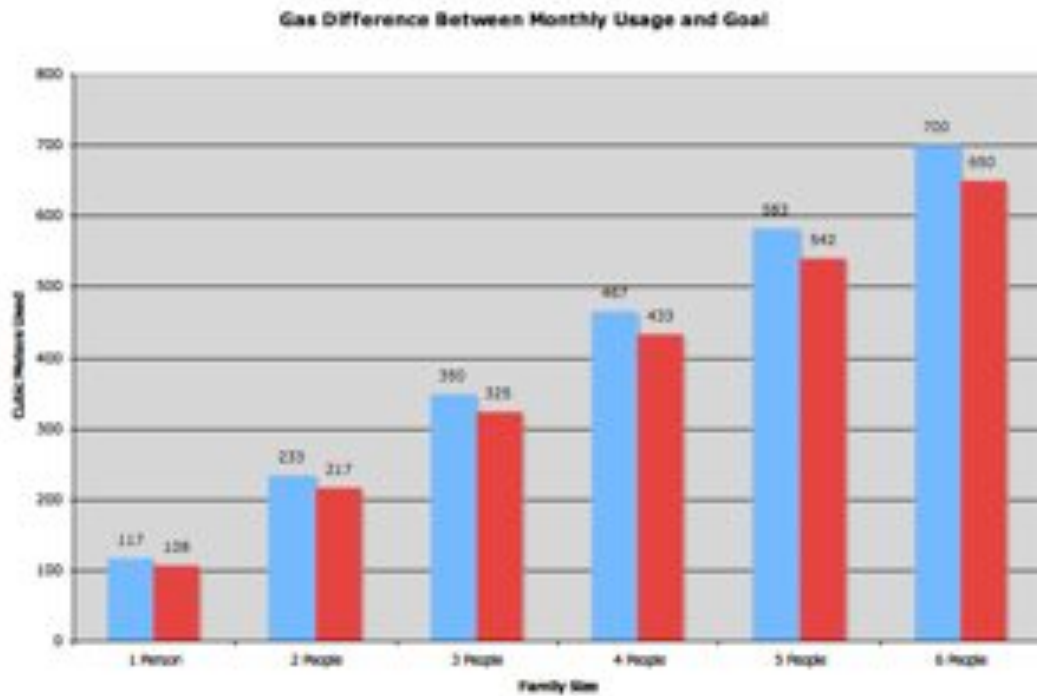
### Money Saved



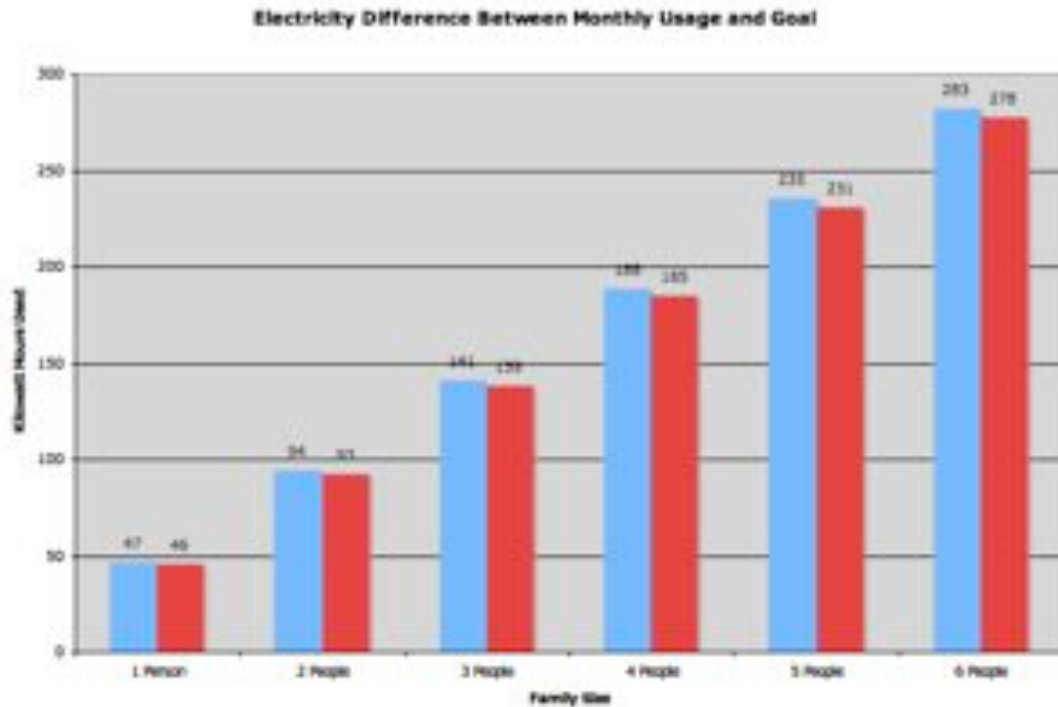
This graph shows the potential savings in Forint vs. the size of a typical family.



Using only water data, the energy currently used is in blue and the reduction is shown in red.



Using only gas data, the energy currently used is in blue and the reduction is shown in red.



Using only electricity data, the energy currently used is in blue and the reduction is shown in red.

|           | Víz | Gáz | Elektromosság | Konténer |           | Víz | Gáz | Elektromosság | Konténer |
|-----------|-----|-----|---------------|----------|-----------|-----|-----|---------------|----------|
| Hónap 1   |     |     |               |          | Hónap 7   |     |     |               |          |
| Cél       |     |     |               |          | Cél       |     |     |               |          |
| Valóságos |     |     |               |          | Valóságos |     |     |               |          |
| Hónap 2   |     |     |               |          | Hónap 8   |     |     |               |          |
| Cél       |     |     |               |          | Cél       |     |     |               |          |
| Valóságos |     |     |               |          | Valóságos |     |     |               |          |
| Hónap 3   |     |     |               |          | Hónap 9   |     |     |               |          |
| Cél       |     |     |               |          | Cél       |     |     |               |          |
| Valóságos |     |     |               |          | Valóságos |     |     |               |          |
| Hónap 4   |     |     |               |          | Hónap 10  |     |     |               |          |
| Cél       |     |     |               |          | Cél       |     |     |               |          |
| Valóságos |     |     |               |          | Valóságos |     |     |               |          |
| Hónap 5   |     |     |               |          | Hónap 11  |     |     |               |          |
| Cél       |     |     |               |          | Cél       |     |     |               |          |
| Valóságos |     |     |               |          | Valóságos |     |     |               |          |
| Hónap 6   |     |     |               |          | Hónap 12  |     |     |               |          |
| Cél       |     |     |               |          | Cél       |     |     |               |          |
| Valóságos |     |     |               |          | Valóságos |     |     |               |          |
| Különbség |     |     |               |          | Különbség |     |     |               |          |

The above chart is my method for keeping track of energy consumption throughout the year. It includes water, gas, electricity, and recycling. Each month, the family creates a goal and reports the actual usage determining an energy savings by implementing their goal usage.

## Energy Conservation Agreement

Habitat for Humanity Hungary  
Hajdúbörzöny

### Summary

The Habitat for Humanity Energy Conservation Program is designed to help Habitat families learn about and have the opportunity to conserve energy. The program asks family members to track their energy use and set goals for themselves to achieve. Focus falls on four types of energy use: water, natural gas, electricity, and recyclable containers.

### Agreement

I, as a member of a Habitat family, agree to participate in the Energy Conservation Program Habitat for Humanity is offering.

By agreeing to participate, I will:

- Make a good effort to conserve energy.
- Track my monthly energy use on a provided chart.
- Set goals for my family to reduce energy use.

I am agreeing because I understand that conserving energy provides a great benefit to me through reduced costs and to the environment through decreased pollution.

Signed on \_\_\_\_\_

\_\_\_\_\_  
Family Member

\_\_\_\_\_  
Member Family

\_\_\_\_\_  
Habitat Representative

This is my Energy Conservation agreement, which all of the families signed to agree to begin the energy conservation program.

Habitat for Humanity Hungary  
Hajdúbószormény

Energy Conservation Program Sign-Up Date

Summary

The Habitat for Humanity Energy Conservation Program is designed to help Habitat families learn about and have the opportunity to conserve energy. The program asks family members to track their energy use and set goals for themselves to achieve. Focus falls on four types of energy use: water, natural gas, electricity, and recyclable containers.

**Please decide if you would like to participate in this program by the time you move into your new houses.**

You may choose to sign up earlier, which is fine. Please let Sandor or me know if you are interested in signing up.



This is an advertisement placed around the Habitat worksite to make individuals aware of the energy conservation program.

## Energy Saving Tips

### Water:

- Use a soaker hose (a hose with holes poked in it) to water flowers and plants.
- Take a shower instead of a bath.
- Turn off the water when brushing teeth.
- When waiting for water to heat, use the cold water for something else.
- Put a full load of washing in the washing machine.
- Don't water your yard in the summer.

### Natural Gas:

- Turn your heater down in the winter and put a sweater on.
- Use an oven infrequently because it takes a lot of energy to run.
- Use cold water instead of hot to clean dishes.
- Set a washing machine to a warm water setting to preserve natural gas.
- Use the high burner on a stove for a short amount of time.
- Use a pot or pan that is not too big for the item being cooked.
- Cover pans to speed up cooking.
- Let frozen food sit out to thaw instead of cooking it right out of the freezer.
- Use insulated curtains to keep out drafts.

### Electricity:

- Unplug small appliances when not in use.
- Charge electronic devices at night when electricity is cheaper.
- Unplug electronic devices as soon as they are finished charging and plug them in only when the battery is dead.
- Do not leave appliances in standby mode unless you use them often.
- Turn on lights only when it is dark.
- Only turn on lights that are needed.
- Use energy efficient light bulbs.
- Keep outside lights on a timer or turn them on only when needed.
- Use light emitting diode (LED) Christmas lights.
- Use lower wattage light bulbs when possible.
- Set televisions and computers to a low brightness setting.
- Plug electronics into a power strip and turn it off when not in use.
- Use light colored drapes in the daytime to let the maximum amount of sun in.
- Buy appliances with an energy rating of A or higher.
- Plant trees to shade your home.

### Recycling:

- You can recycle paper products, plastic, bottles, jars, and cans.
- Before throwing items away, look to see if the triangular recycling symbol is present.
- The nearest recycling location to the Habitat houses is near the Real grocery shop.

This is an English list of energy saving recommendations, given to all of the participating families in Hungarian.

## Energy Habits Survey

Dear Habitat Families,

In the next few weeks, I plan to tell you and your families about the new Habitat for Humanity Energy Conservation Program. This program can help you lower your monthly expenses and contribute to a reduction of pollution in Hungary. For me to be able to give you the most relevant information in these meetings, I am asking you to complete this short survey about your current energy habits. Please complete and return this survey. Thank you for your help.

William O'Brien

### Appliances

(Circle One)

- |                                                                   |                |           |                  |                    |
|-------------------------------------------------------------------|----------------|-----------|------------------|--------------------|
| 1. Do you consider energy efficiency when buying appliances?      | Yes            | No        |                  |                    |
| 2. Do you unplug small appliances when not in use?                | Yes            | No        |                  |                    |
| 3. Do you use a dishwasher at your current home?                  | Yes            | No        |                  |                    |
| 4. Do you use a washing machine at your current home?             | Yes            | No        |                  |                    |
| 5. Do you have an air conditioner in your current home?           | Yes            | No        |                  |                    |
| 6. Do you use a heater often in the winter?                       | Yes            | No        |                  |                    |
| 7. How energy efficient are your appliances at your current home? |                |           |                  |                    |
|                                                                   | Very Efficient | Efficient | Mildly Efficient | Not Very Efficient |

### Water

- |                                                     |     |    |
|-----------------------------------------------------|-----|----|
| 1. Do you water your yard at your current home?     | Yes | No |
| 2. Are you familiar with a soaker hose?             | Yes | No |
| 3. Do you water your yard more than twice a week?   | Yes | No |
| 4. Do you take a shower instead of a bath?          | Yes | No |
| 5. Do you keep the water running when not using it? | Yes | No |

### Knowledge

- |                                                                                     |     |    |
|-------------------------------------------------------------------------------------|-----|----|
| 1. Are you familiar with the term "energy conservation?"                            | Yes | No |
| 2. Do you recycle products currently?                                               | Yes | No |
| 3. Have you tried to conserve energy in the past?                                   | Yes | No |
| 4. Are you interested conserving energy and save money?                             | Yes | No |
| 5. Is energy conservation a priority in your home?                                  | Yes | No |
| 6. What energy saving practices do you implement at your current home? Please list. |     |    |

7. What comments or questions do you have about energy conservation?

This is a survey that I distributed to all family members to determine how to structure the energy conservation program.





Some of the families who benefited from the energy conservation program are shown above. Sandor (last picture on the left) was my translator during my meetings with families.

1065 Budapest  
Hajós u. 9.  
Hungary  
June 12, 2010

Mr. William O'Brochta  
3226 Peakwood Drive  
Roanoke, Virginia 24014

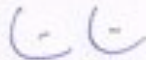
Dear William

I am writing to express my appreciation for the energy conservation program you implemented during your time in Hajdúböszörmény, Hungary. Many of the families benefiting from receiving a newly built house now are able to manage their finances better because of the savings incurred because of their newly learned energy conservation skills from this program.

Furthermore, this project has been beneficial to the environment around the area. Because the families are now using less electricity and natural resources, their impact on the environment has been greatly reduced. The energy conservation program provides a long-term solution to the natural resources issue currently being experienced in Hajdúböszörmény.

Thank you for helping our organization and benefiting families with this project. The result has been a great benefit for all parties involved. Best wishes.

Sincerely,



György Sümeghy,  
National Director  
Habitat for Humanity Hungary

HFH International  
Hungary Nonprofit Kft.  
1065 Budapest  
Hajós u. 9. IV/9B.  
Adatkezelés: 18922/18-3-43

A letter of appreciation from the National Director of the benefiting organization, Habitat for Humanity Hungary, is shown above.

**Update:** This program continued after I left Habitat for Humanity Hungary. There is no exact way to tell how much money or energy has been saved, but, nevertheless, many individuals have been educated about energy conservation.

Comparisons Between “Green” and Regular Laundry Detergent.  
William O’Brochta  
Early Spring 2009

**Summary:**

This Hornaday Project was formulated to achieve multiple goals: educating others about laundry detergent, determining if previous research was correct, and leaving a written publication for others to read. The project has been categorized in the Air and Water Pollution Control category because of the project’s impact to the environment. My project was carried out at my home, using various pieces of electronic equipment. The research showed that “green” laundry detergent had a less harmful effect on the environment when compared to regular laundry detergent. This data was then used to present findings to many people, thus having a broad impact on the community.

**National Judging Criteria:**

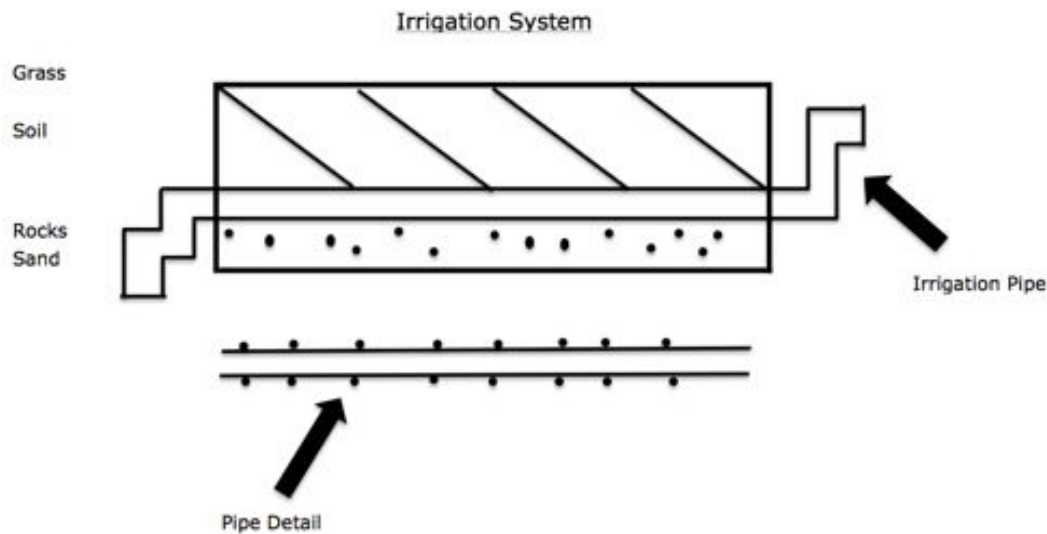
- This project was in the Air and Water Pollution Control category.
- A total of 220 hours were needed to complete the planning and execution of the project.
- This project was my own idea and originated after reading Consumer Reports magazine’s article about laundry detergents and their effect on the environment.
- Many other individuals assisted with this project, and myriad others were educated as a result of the work.
- A teacher at the Roanoke Valley Governor’s School was the main source of information along with many published scientific articles about the topic.
- Individuals learned about the harmful effects of manufactured laundry detergent with chemicals as compared to natural alternatives; thus, the project informed people about dangers of chemicals already in their homes.

**Purpose:** The purpose of this project was to expand on the work of other researchers and scientists to determine if laundry detergent inhibits grass growth and causes algae to grow, thus harming the environment. This project was important because it proved that regular laundry detergent had a negative effect on the environment. “Green” detergents have not been found to have a negative environmental effect. Conclusions from the experiment are important to know because many people are interested in learning ways to create a clean the environment, and this might have been one of them. Personally, I was interested in this project because I wanted to learn how the environment is being harmed and whether it is worth the extra money to purchase “green” detergents.

**Benefit:** There have been many benefits from this project. I was able to confirm research and testing and prove that regular detergent is more harmful to the environment when compared to “green” laundry detergent. The fact that I was able to back up previous research helps ensure that people are reading accurate material. I feel that this was the lasting impact of this project. People are now able to read and interpret scientific data that I feel is accurate and reliable. The lasting benefit came from the many people that I educated about this topic and the multiple reports that I presented.

**Design:** This project required two different experiments. I felt that I could get a better measure of the environmental impact if I took data from land and water. One experiment measured grass growth and health, while the other looked at water dissolved oxygen concentration and algae growth.

The grass experiment was set up using multiple pans filled with dirt and rock and layered with grass seed. A watering method consisting of perforated polyurethane pipe and a gravity feeder was inserted into each pan of grass as shown below. Grass was watered with a consistent amount of detergent mixed with water and results were monitored.



The water experiment involved placing a set amount of water and detergent into multiple containers and observing the results. It also included taking readings of the dissolved oxygen concentration in each sample to see what the oxygen content was. Oxygen concentration is a good measure of if there are harmful environmental effects or not. A high dissolved oxygen concentration is bad and a lower one is good.

**Results:** The data from this showed that the grass grown using Seventh Generation™ grew taller than the grass produced using Tide®. However, both of these detergent fed grasses grew shorter than the grass grown with water. The dissolved oxygen contents also supported this conclusion and proved that Tide® was more harmful to the environment than Seventh Generation™.

The dissolved oxygen content of the samples showed that water with Tide® had a higher dissolved oxygen level. The oxygen content in water was stable throughout the tests and demonstrated a level that was slightly below the oxygen content of air. Seventh Generation™ showed similar results and was statistically the same as plain water, as proved through a t-test using a ninety-five percent confidence level. Tide® produced significantly higher dissolved oxygen levels. This test evinced that Tide® had higher dissolved oxygen levels, which confirmed the hypothesis and research indicating it is harmful to the environment.

The qualitative results for the water were inconclusive. There was little to no algae grown in any of the samples. Tide® had a little algae, but not enough to be statistically different than water and Seventh Generation™.

The grass results backed up the conclusions drawn from the oxygen content results. The grass hydrated with water had a mean of 9.73cm, which was much greater than means from Seventh Generation™ and Tide®. Seventh Generation™ again produced the middle mean, growing statistically taller than Tide®, as proved by a t-test, but shorter than water. Tide® produced the smallest mean growth by far; it was more than four times less than that of the water. The grass grown with water also germinated faster, growing days before grass fed with Tide®. Seventh Generation™ had the middle germination time.

Qualitative results from the grass growth are conclusive that water grew the best. Water was healthier when using the health rating scale established before the experiment was started. It scored three, which meant that the grass was green overall. Seventh Generation™ scored a lower three while Tide® scored one, which meant that the grass was yellow/dead looking overall. These values were all statistically different from each other. These differences were proven using t-tests and an ANOVA.

In summary, the water outperformed Tide® and Seventh Generation™ in all tests conducted. The grass grew taller and healthier, and the water had a normal oxygen concentration. Seventh Generation™ was second in all tests, and t-tests always demonstrated that it was statistically better than Tide®, but worse than water. Tide® scored last in all tests. These experiments reinforced the conclusion that Seventh Generation™ harmed the environment less than Tide® did. However, Seventh Generation™ had some impact, as shown by the results of the study.

**Leadership:** I was the main leader on this project. I did, however, receive extensive assistance from Dr. Wayne D. Riley, a teacher at the Roanoke Valley Governor's School. Dr. Riley helped me locate research about this topic and gave me suggestions about how to best present my findings to the general public. He helped me locate experts that could help with my research or distribute my findings. This project took 220 hours to complete. The below chart shows the number of hours worked by different individuals on this project.

| <u>Name</u>                | <u>Hours</u> |
|----------------------------|--------------|
| William O'Brochta          | 126.5        |
| Michael O'Brochta          | 10           |
| Dr. Wayne D. Riley         | 15           |
| Governor's School Students | 15           |
| Community Members          | 15           |
| Virginia Tech Students     | 37.5         |
| <b>Total</b>               | <b>219</b>   |

**Changes:** Very few changes were made to this project. The only change was a change in the proposed watering system. The original system did not distribute water evenly

throughout the pan of grass. I had to switch to using a watering can for a set amount of time.

**Update:** This project continued to be successful after completion as it was presented to a school group and a class at Virginia Tech. The author has continued to educate people about the findings from the project and material about the project's goals remains available.

June 12, 2010

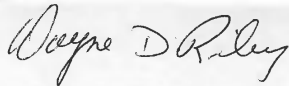
Dear William,

I would like to acknowledge your contribution of information to the public via your research project that compared "green" and regular laundry detergents. Your procedures for this project demonstrated excellent scientific methodology and design. The results from your project allow the consumer of laundry detergents to carefully consider the short and long term affects of this consumable and highly used commercial product.

This project has been very beneficial to the local community by examining the possible environmental impact of a commonly used product. Classmates, students, and the public have all received information that allows them to better consider the environment when making household chemical purchasing choices. Your help in disseminating otherwise obscure information has certainly been of value to the community.

Your effort and work on this project is part of the mission of the Roanoke Valley Governor's School in that it contributes to both your education and the education of the community. The result has been a great benefit for all parties involved. Best wishes.

Sincerely,

A handwritten signature in dark ink, appearing to read "Wayne D. Riley". The signature is fluid and cursive, with the first name "Wayne" being more prominent and stylized than the last name "Riley".

Dr. Wayne D. Riley  
Former Research Instructor  
Roanoke Valley Governor's School for Science and Technology

A letter of appreciation from Research Instructor, Dr. Wayne D. Riley.

**Tables and Graphs:**



Figure 1: Grass Grown with Water at Completion of Study



Figure 2: Grass Grown with Seventh Generation™ at Completion of Study



Figure 3: Grass Grown with Tide® at Completion of Study



Figure 4: Water with Detergent at Completion of Study

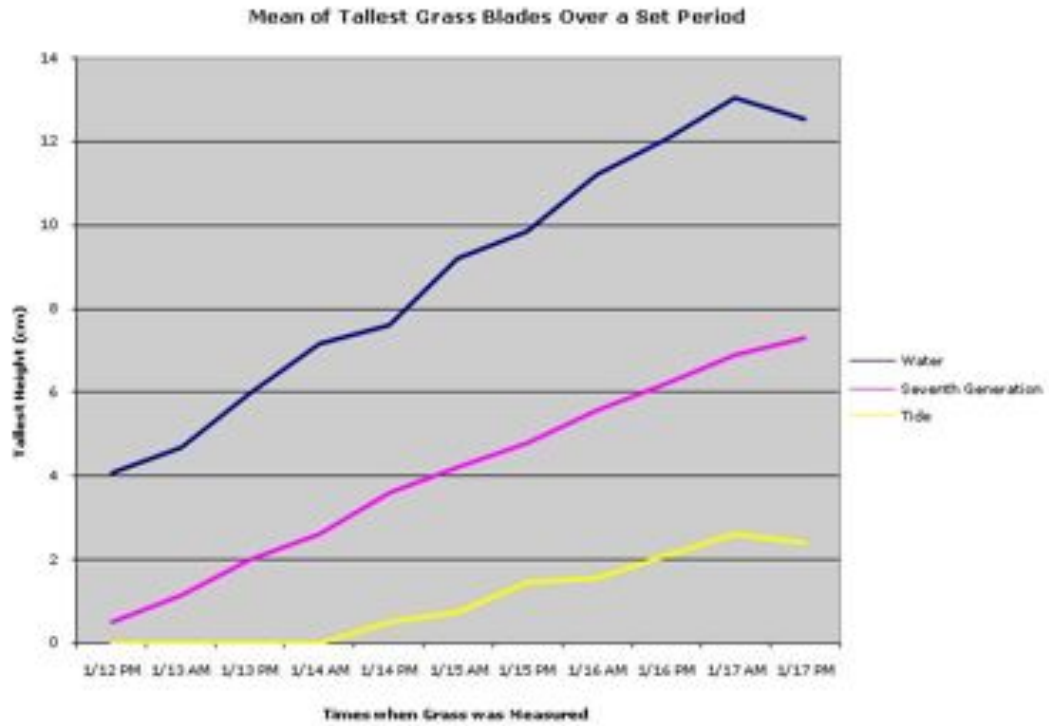


Table 1: Mean of Tallest Grass Blades Over a Set Period, shows how Tide® started growing later and grew much shorter than Seventh Generation™ and water.

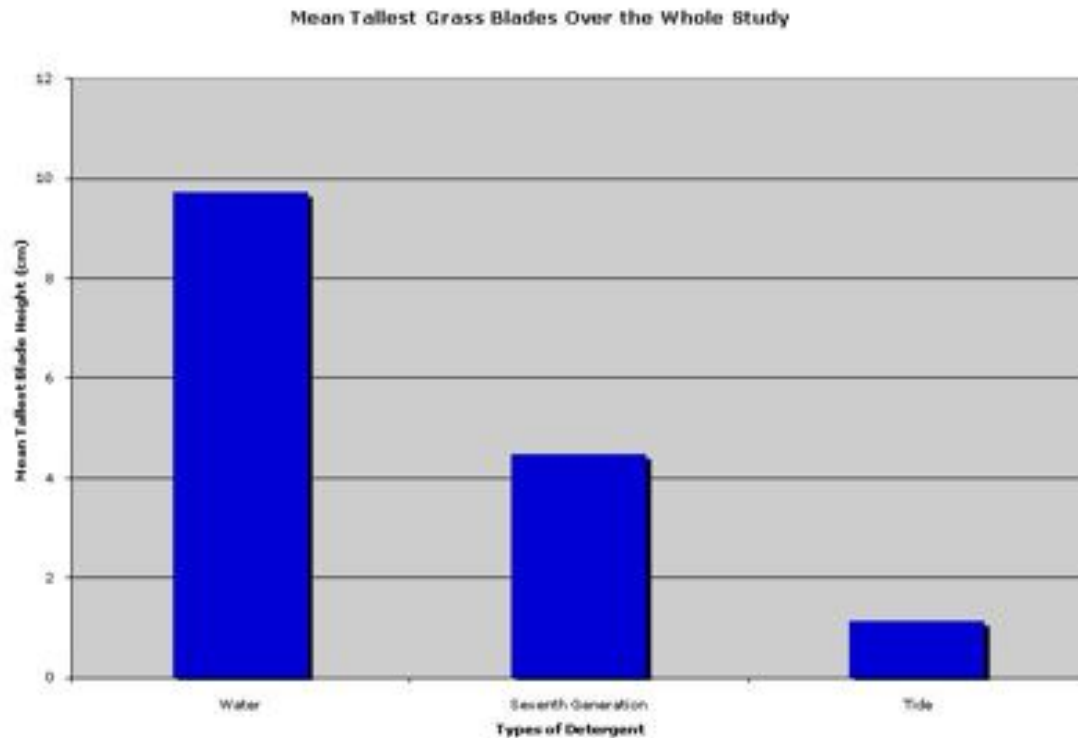


Table 2: Mean Tallest Grass Blades Over the Whole Study, shows how water had a much taller mean height compared with Seventh Generation™ and Tide®.

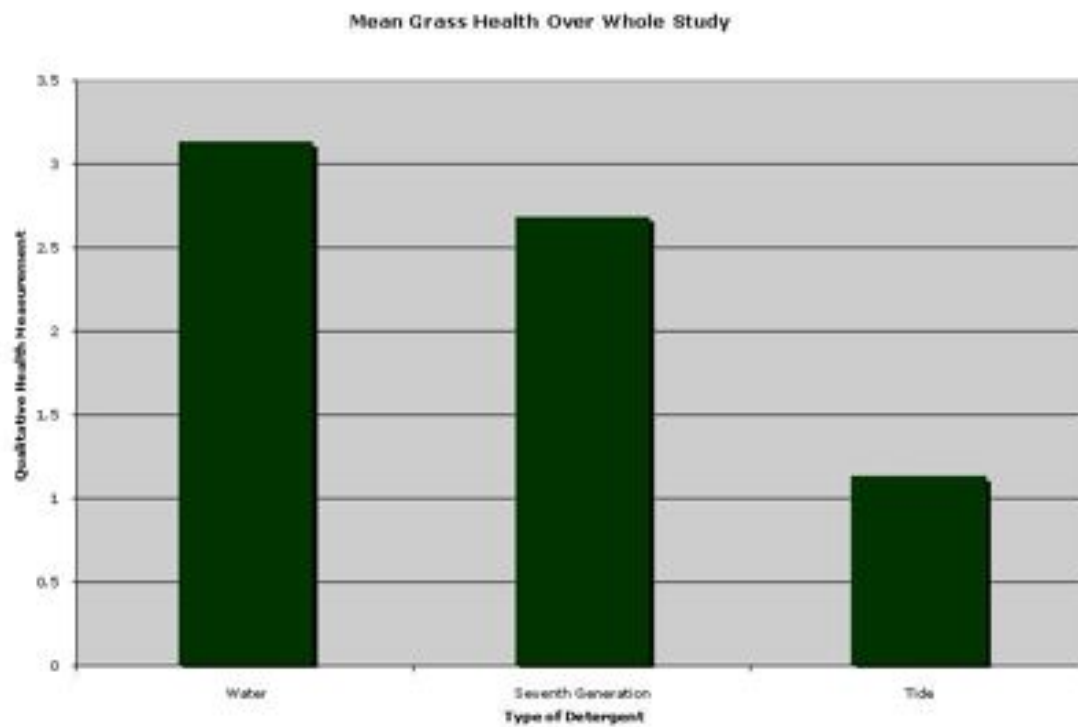


Table 3: Mean Grass Health Over the Whole Study, shows that water was very healthy overall, while Tide® was unhealthy.

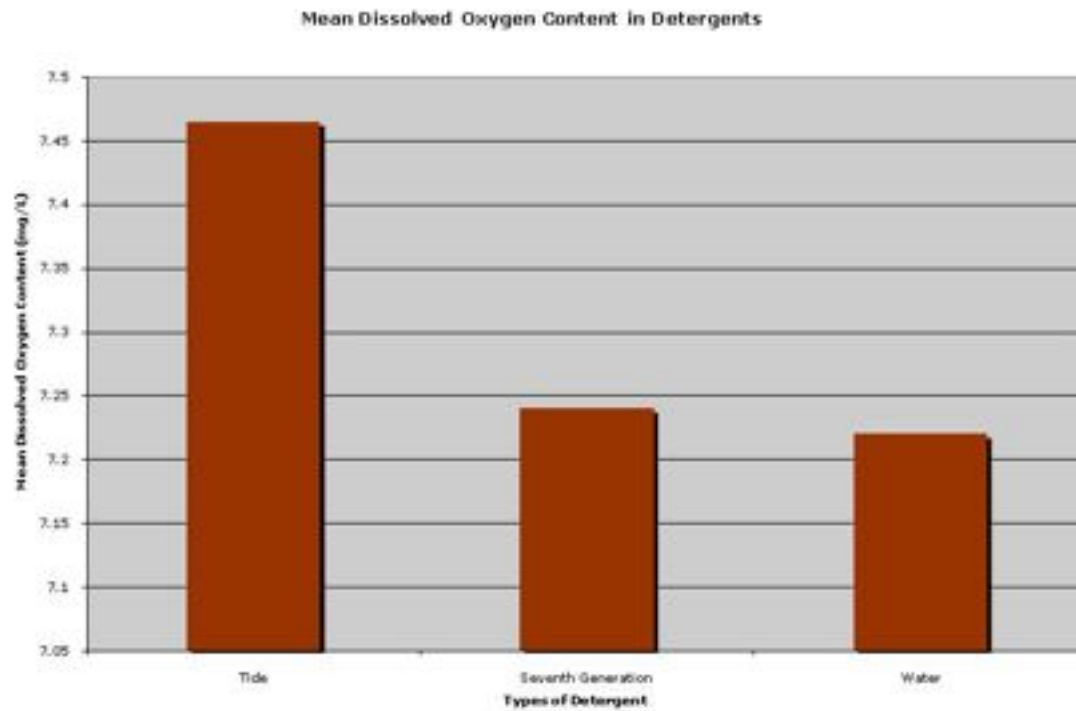


Table 4: Mean Dissolved Oxygen Content in Detergents, shows how Tide® had a much higher oxygen content compared to Seventh Generation™ and Tide®.

Claytor Lake Shoreline Erosion Control Project  
William O'Brochta  
Spring 2010

**Summary:**

This Hornaday Project has been created to address a major erosion problem along the shoreline of Claytor Lake, located in Pulaski County, Virginia. An appropriate category for this project is Soil and Water Conservation due to the erosion focus. Previous work at Claytor Lake Aquatics Base, part of the Blue Ridge Mountains Council Scout Reservation, to address lakebed erosion and fish habitats led to the idea for an erosion-focused project. Much work will be done to determine good plants for an erosion prone area. These plants can then be planted and the area landscaped to prevent further erosion. The result will be an erosion free bank along the lake with the added benefit of aesthetic beauty from the plants.

**National Judging Criteria:**

- This project was in the Soil and Water Conservation category.
- A total of 300 hours were needed to complete the planning and execution of the project.
- This project was my own idea and was formulated after witnessing a great deal of erosion along the bank at Claytor Lake
- Dozens of other Scouts and Adults were involved in this project.
- Part of this project was to determine a suitable design. Professionals from the Virginia Department of Forestry, Virginia Tech, Virginia Cooperative Extension, Scouting, and nurseries locally and around the country were involved in the plant selection.
- There was a strong emphasis throughout the project on the overall goal of preventing new erosion on the bank as well as discussion about the actual Hornaday awards.

**Planning:**

**Organization:** The Blue Ridge Mountains Council Scout Reservation is the major benefiting organization due to the increased erosion control on their property. The lake as a whole also benefits from stoppage of the eroding shoreline.

**Design:** This project involves a great deal of work in choosing plants to place in this area. The Reservation has requested that I choose a plant meeting certain criteria:

- Low lying
- Deer resistant
- Drought tolerant
- Sun tolerant
- Able to live in sandy soil.
- Slow growing
- Limited plant variety

The method for plant selection will involve collecting soil samples and taking pictures for analysis by the Virginia Cooperative Extension. They will help me analyze the soil and my criteria and provide me with the type of soil and plants that can grow well in that soil.

I will supplement the information gathered by the Virginia Cooperative Extension with knowledge from teachers from the Roanoke Valley Governor's School. From this information, I should be able to choose one or two plants that will fit all the requirements.

After a plant is chosen, I will work with a local nursery (to be determined) to obtain pricing and availability information. This will lead to the creation of a design drawing showing the exact layout of the plants and any other objects in the area.

The plans, along with my arrangement of delivery of materials, will be used during the Order of the Arrow Spring Ordeal to complete the actual planting. Mr. Brad Kane is able to assign projects to the OA and will add this project for them to complete.

**Materials:** The plants chosen will make up the major part of the materials needed. Additionally, rocks may be used to help prevent erosion closer to the shoreline. Fence will be needed to help deter deer from eating the new plants. Mulch and possibly fertilizer will be purchased from the nursery. Either shovels or a tractor with an auger will be required to plant the plants.

Any materials needed for the actual planting will be provided by Claytor Lake.

**Leadership & People:** Leadership and people are an important part of this project. My major contact with Claytor Lake is Mr. Greg Harmon, the director. Mr. Russell McDaniel is my conservation advisor for the project. I will also be working closely with Mr. Brad Kane, the Ranger for the Reservation; Mrs. Cindy Bohland, Mr. Steve Smith, or Mrs. Gwen Sibert, teachers at the Roanoke Valley Governor's School; a representative from a selected nursery; and a representative from the Virginia Cooperative Extension. I will need several scouts to be involved with this project and help plant the plants. The labor will be provided through the Order of the Arrow, Tutelo Lodge 161. My major contact in the OA will be Mr. Jim Nicholas, Lodge Advisor; and the Chapter Chief. I am the main leader for this project.

**Schedule:** I anticipate the planning process part of this project taking until winter of this year. The plants will be planted during the Spring Ordeal in 2010.

**Money:** The Blue Ridge Mountains Scout Reservation and Claytor Lake will provide all funds for materials the Reservation does not already have.

**Safety:** Safety will not be an issue due to the non-dangerous activity of digging holes. If, however, a tractor is used, Claytor Lake staff or Rangers will operate the machine. Regardless, adult supervision will be required and is prevalent at all Order of the Arrow functions.

**Food & Restroom:** The Order of the Arrow will provide all food involved with their function including the period when this project is being completed. Restrooms are available in the Claytor Lake dining hall.

### **Carrying out the Project:**

**Summary:** This project has resulted in a well-landscaped area at Claytor Lake Aquatics Base that effectively controls erosion in the long and short terms. Plants were selected after extensive research and meet criteria for durability as well as being native to Virginia. The major erosion control issue at Claytor Lake has been rectified and costs of the project were reduced, without cutting the benefit. Very few changes were made.

**Leadership:** During this project, I was the leader and decision maker. The first step was to test the soil around the site. This was done in accordance to the principles of the Virginia Cooperative Extension. Nine locations were selected on the site (location photograph attached) and sent off to analyze the soil. With these results, I began contacting individuals who could help with plant selection. These included corporations like Townside Gardens, Greenbrier Nurseries, Sunlight Gardens, Plant Delights, and Tiny Treasure Nursery. I contacted various individuals including Mr. Bob Garst, a Scout leader; Mr. Barry Robinson, Mr. Wythe Morris, Mrs. Leslie Prilliman, and Mr. Jon Vest, Virginia Cooperative Extension; Mr. Dave Richert and Mr. Dennis Anderson, Virginia Department of Forestry. All of these contacts helped me select four varieties of plants that would fit the above listed criteria. These plants ended up being Butterfly Milkweed, Lemon Goldenrod, Lowbush Blueberry, and Bearberry. An additional benefit of the selected plants was that they are native to the area. This project took 300 hours to complete. The below chart shows the number of hours worked by different individuals on this project.

| Name                      | Hours         |
|---------------------------|---------------|
| William O'Brochta         | 182           |
| Michael O'Brochta         | 20            |
| David Richert             | 12            |
| Dennis Anderson           | 2             |
| Jon Vest                  | 1             |
| Robert Garst              | 0.5           |
| Barry Robinson            | 0.5           |
| Wythe Morris              | 1             |
| Leslie Prilliman          | 0.25          |
| Gregory Harmon            | 5             |
| Bradley Kane              | 12            |
| C. Russell McDaniel       | 4             |
| OA Brotherhood Candidates | 59            |
| Jim Nicholas              | 1             |
| <b>Total</b>              | <b>300.25</b> |



Aerial View of the Site on Claytor Lake, Pulaski, Virginia



Site Location Before Erosion Control Project, sides marked with American flags.

The Virginia Cooperative Extension provided this below soil report.

Lab ID: 09-4696 2009-10-23 ROANOKE / 101

## Virginia Cooperative Extension

### Soil Test Report

**Roanoke Office**  
3758 Brambleton Ave., S.W.  
Roanoke, VA 24058-3639  
540-772-7524

**Virginia Tech Soil Testing Laboratory**  
145 Smyth Hall (0445)  
Blacksburg, VA 24061  
www.soiltest.vt.edu

SEE ENCLOSED NOTE:  
**1 20**

1540786761

**CLIENT INFORMATION**

O: OBROCHTA WILLIAM  
W: 3224 PEAKWOOD DRIVE  
E:  
R: ROANOKE, VA 24014

**C F**  
**D O**  
**F R**  
**T**

#### SAMPLE HISTORY

| Sample ID | Field ID | LAST CROP |       | LAST LIME APPLICATION |               | SOIL INFORMATION |         |         |                |                    |
|-----------|----------|-----------|-------|-----------------------|---------------|------------------|---------|---------|----------------|--------------------|
|           |          | Name      | Yield | Months                | Tons/Acre     | SMP-1 %          | SMP-2 % | SMP-3 % | Yield Estimate | Productivity Group |
| BSACL     |          |           |       |                       | None applied. |                  |         |         |                |                    |

#### LAB TEST RESULTS (see Note 1)

| Analysis | P (lb/a) | K (lb/a) | Ca (lb/a) | Mg (lb/a) | Zn (ppm) | Mn (ppm) | Cu (ppm) | Fe (ppm) | B (ppm) | Sulfur (ppm) |
|----------|----------|----------|-----------|-----------|----------|----------|----------|----------|---------|--------------|
| Result   | 74       | 136      | 424       | 88        | 1.8      | 10.4     | 0.3      | 42.1     | 0.2     |              |
| Rating   | H        | M        | L         | M-        | SUFF     | SUFF     | SUFF     | SUFF     | SUFF    |              |

| Analysis | Soil pH | Buffer Index | Est. CEC (meq/100g) | Acidity (%) | Base Sat. (%) | Ca Sat. (%) | Mg Sat. (%) | K Sat. (%) | Organic Matter (%) |
|----------|---------|--------------|---------------------|-------------|---------------|-------------|-------------|------------|--------------------|
| Result   | 4.7     | 5.71         | 5.7                 | 72.0        | 28.0          | 18.6        | 6.4         | 3.1        |                    |

#### FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crops: SHRUBS, NON ACID-LOVING (245)

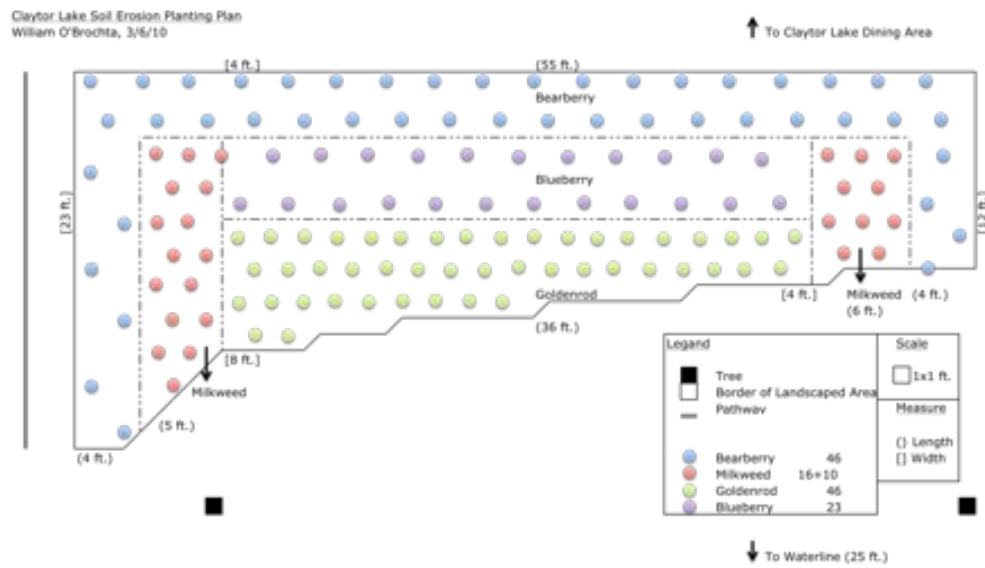
**634. LIME RECOMMENDATIONS:** Apply 18 pounds of agricultural limestone (ground or pulverized) per 100 square feet. If lime is not going to be mixed into the soil, make several small applications of up to 5 lbs each, at intervals of 1 to 6 months, until the full amount is applied.

**241. FERTILIZER RECOMMENDATIONS:** See Note 29 (enclosed).

**990.** We are trying to improve our service. PLEASE take a moment to complete our brief, anonymous customer survey at [tinyurl.com/soiltestsurvey](http://tinyurl.com/soiltestsurvey)

Erosion barrier was selected with the help of Landscape Supply Virginia and was delivered in a large roll. The barrier was designed to prevent erosion while the plants matured until they could use their roots to control erosion more effectively.

The below design was created using a scaled drawing of the site.



A Price List was submitted for approval to Mr. Greg Harmon and Mr. Russell McDaniel. The Price List was approved on May 15, 2010.

| Claytor Lake Erosion Control Project: Materials and Price List |       |          |                    |                |               |       |
|----------------------------------------------------------------|-------|----------|--------------------|----------------|---------------|-------|
| William O'Brochta 03/13/10                                     |       |          |                    |                |               |       |
| Item Name                                                      | Price | Quantity | Cost               | Delivery       | Seller        | Width |
| Butterfly Milkweed                                             | 4.25  | 26.00    | 110.50             |                | River Bend    | 18-24 |
| Little Lemon Goldenrod                                         | 4.25  | 46.00    | 195.50             | 0.00           | Nursery,      | 18-24 |
|                                                                |       |          |                    |                | Delivery: Mr. |       |
|                                                                |       |          |                    |                | Harmon        |       |
|                                                                |       |          | <b>Total</b>       | <b>306.00</b>  |               |       |
| Lowbush Blueberry                                              | 8.23  | 30.00    | 247.00             |                | Hartmann's    | 24-36 |
| Bearberry                                                      | 3.89  | 50.00    | 194.44             | 0.00           | Plant, order, | 36-48 |
|                                                                |       |          |                    |                | Discount      |       |
|                                                                |       |          | <b>Total</b>       | <b>261.25</b>  |               |       |
| Dupont Burlap (3x24)                                           | 9.97  | 16.00    | 159.52             |                | Lowe's,       |       |
| Dupont Anchor Pins (75)                                        | 9.97  | 2.00     | 19.94              | 0.00           | Delivery:     |       |
|                                                                |       |          |                    |                | Pickup by car |       |
|                                                                |       |          | <b>Total</b>       | <b>179.46</b>  |               |       |
| Lime (30 lbs)                                                  | 0.00  | 3.00     | 0.00               |                | Mr. Harmon,   |       |
| Hardwood Mulch (2 cu.ft.)                                      | 0.00  | 60.00    | 0.00               | 0.00           | Delivery: on  |       |
|                                                                |       |          |                    |                | site already  |       |
|                                                                |       |          | <b>Total</b>       | <b>0.00</b>    |               |       |
|                                                                |       |          | Subtotal           | 746.71         |               |       |
|                                                                |       |          | Tax (5%)           | 37.34          |               |       |
|                                                                |       |          | <b>Grand Total</b> | <b>784.05</b>  |               |       |
|                                                                |       |          | Contingency        | 250.00         |               |       |
|                                                                |       |          | <b>Final Total</b> | <b>1034.05</b> |               |       |

Plants were ordered in time for the OA Summer Ordeal. Mr. Jim Nicholas, Tutelo 161 Lodge Advisor, assisted in coordination between the OA and my project. Mr. Brad Kane, Reservation Ranger, agreed to help me find any equipment I needed for the implementation of the project.

The week before the actual Summer Ordeal, I went to the site and prepared it for planting by removing weeds and organizing the plants. I also confirmed the planting process with Mr. Kane. 90 pounds of lime were spread over the site based on recommendations from the Virginia Cooperative Extension.

The morning of the Ordeal, I arrived at Claytor Lake and worked with Mr. Kane to find all the needed materials and tools for the job.

Fifteen Brotherhood Candidates arrived at 9AM, and I selected seven to work with me. I split the group into three. The first group of four began to take mulch from the dumpster pad to the site, a distance of a couple hundred yards. A second group of two adults began taking the plants down to the site. I worked with one scout to mark the area with spray paint and show the location of each plant. Everyone set the plants in their proper location, and I conducted a planting demonstration for the best way to put the plants into the ground.

All scouts began planting and took a break after completion.

The scouts broke into two groups and spread the Erosion Barrier over all of the plants. Each group cut one 55 foot section of barrier and worked from one end of the area to the other, using scissors to cut out each plant and staking down the barrier with barrier pins.

Several sections of the area were filled in with another piece of barrier because the area was not rectangular in its shape.

More mulch was delivered to the site and spread in a three-inch layer over the plants. Each plant was watered and a schedule was set-up with Mr. Kane to water every two days.

**Benefit:** This project was designed to benefit multiple parties. Foremost, the bank benefited from reduced soil erosion that will last over a very long period. The erosion control takes effect instantly due to the erosion control barrier that will hold the soil in place. As this barrier degrades over time, the plants are designed to mature and spread out over a wide area, filling in all of the gaps on the hillside. Animal and plant life will also benefit from the project. The bearberry and blueberry can provide food for some animals during peak season. The plants also provide shelter for small animals. Benefit extends to the scouts who use the Reservation. The once eroded bank now looks much better and some scouts have been educated on the Hornaday Conservation awards and demonstrated interest in completing the adult award.

**Changes:** There were few changes made to this project. The most major change was a plant criteria change in order to allow for lower cost, but still cover the area sufficiently. Mr. Harmon did not have enough money to fund the original proposal, which included more mature plants of the same varieties. We spent about four months searching for alternate sources for the plants and finally located a local nursery that could supply some of the plants in smaller containers. Other plants had to be ordered, but the cost was reduced significantly. The erosion control barrier was also changed to reduce cost from about \$550 to \$100. I made changes that would cut the price, but still keep the erosion under control and provide for a suitable landscaped area. There ended up being nine spurge plants that I was able to use, they were placed together and bearberry plants were compressed together. Some other varieties arrived with more plants than ordered. These plants were inserted after planting according to the design was completed.

**Photographs:**



Blueberry and Bearberry Plants, Shipped from Michigan



Milkweed Plants



Goldenrod Plants



Spurge Plants, All from Riverside Nursery



Plant Locations Marked



Digging Holes for Plants



More Digging



Planting the Goldenrod Plants



Working Together with the Smaller Plants



Putting the Erosion Barrier Down



Complete Erosion Barrier



Getting the Mulch



Spreading the Mulch



Completed Area



Work Crew: Brotherhood Candidates



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540.263.0636 • fax 540.263.0659 • e-mail SCOUTS@BSA-ERMC.ORG • web WWW.BSA-ERMC.ORG

4100 Adventure Base Road  
Radford, Virginia 24141  
June 12, 2010

Mr. William O'Brochta  
3226 Peakwood Drive  
Roanoke, Virginia 24014

Dear William,

I am writing to express my appreciation for the erosion control landscaping project you completed near the shoreline of the Claytor Lake Aquatics Base. The meticulous selection of plants and the area design has resulted in a very aesthetically pleasing environment for the campers and staff at the aquatics base. More importantly, this project will minimize erosion along the steep slope of our shoreline protecting aquatic life and improving water quality.

Thank you for taking the time to organize and manage this project. Best wishes.

Sincerely,

Gregory W. Harmon  
Director of Camping Service  
Blue Ridge Mountains Council

Serving the Counties of Albemarle, Appomattox, Bedford, Botetourt, Clinch, Giles, Shenandoah, Craig, Floyd, Franklin, Grayson, Harrison, Henry, Montgomery, Nelson, Patrick, Pulaski, Roanoke, Smyth, Wythe and the Cities of Bedford, Danville, Galois, Lynchburg, Martinsville, Radford, Roanoke and Salem



Letter of appreciation from the benefiting organization.

**Update:** Not applicable at this time. The project was just completed.

Claytor Lake Fish Habitat Construction Project  
William O'Brochta  
Spring 2009

**Summary:**

This Hornaday Project was formulated to achieve two goals: eliminating erosion on the lakebed and providing a habitat for fish. This project is considered to be in the Fish and Wildlife Management category because its primary focus is habitat reconstruction. Claytor Lake Aquatics Base was selected as the project location because the Blue Ridge Mountains Council Scout Reservation enlisted my help solving this problem. Structures were built and sunk to prevent lakebed erosion and to provide a fish habitat. The result is a new fish habitat with the added benefit of erosion control.

**National Judging Criteria:**

- This project was in the Fish and Wildlife Management category. It should be considered an extra project because of the repeat category.
- A total of 250 hours was needed to complete the planning and execution of the project.
- This project was my own idea and was initiated after discussions with the Reservation Ranger and Reservation Director about the lack of fish around the property.
- Dozens of other scouts and adults were involved in this project.
- Adults from scouting and the Virginia Department of Game and Inland Fisheries assisted with the design and implementation on this project, which was similar to one done years earlier.
- There was an emphasis, especially with the participating scouts, on the purpose and importance of both stabilizing the lakebed and creating a new fish habitat.

**Planning:**

**Organization:** The Blue Ridge Mountains Council Scout Reservation is a major benefactor from this project due to the increased number of fish in the lake. The Reservation also benefits from a well-controlled lakebed. The fish and lake as a whole will benefit from the increased habitat area with more places to live. This scenario could potentially lead to more fish in the lake, which benefits the lake as a whole.

**Design:** This project consists of constructing structures to sink into Claytor Lake, located in Pulaski County, Virginia. These structures will serve two purposes.

The major purpose will be to prevent movement of the soil on the lakebed, basically erosion control. The Reservation is worried about erosion on the lakebed and would like to have structures in place before scouts begin camping there. When camping occurs, there will be a lot of boat traffic that could create sediment movement, causing erosion. The structures will prevent this phenomenon.

The project will involve placing artificial habitats in the lake. The artificial habitat will include wavy pipe that can act as a hiding place, breeding ground, and safe haven for fish. Basically, cement cinder blocks will be used as the anchor. Polyurethane pipe of different lengths will be cemented into the cinder blocks. Once the cinder blocks are dropped into the lake, the pipe will become more flexible and move like real plants. A design drawing is included below.

**Materials:** The materials will long lasting and be simple to construct. Cement blocks will be needed to anchor the artificial structures in place. Additional cement will be needed to keep the polyurethane pipe in place. Polyurethane pipe is the main part of the structures; it replicates real plants under water.

**Leadership & People:** Leadership and people are an important part of this project. My major contact with Claytor Lake is Mr. Greg Harmon who works there. Mr. Russell McDaniel is my conservation advisor for the project. I will also be working closely with Mr. Brad Kane, the Ranger for the Reservation; Mr. Dave Collett, director of Claytor Lake State Park; and Mr. John Copeland, a Fisheries Biologist from the Virginia Department of Game and Inland Fisheries. I will need several scouts to be involved with this project and to help construct the habitat; the number has not been determined yet. I solicited for volunteers using the below flyer. I am the main leader for this project.

**Troop 17 Hornaday Volunteer Trip**  
June 6-7, 2009

**Respond by June 1\***  
Respond To: William O'Brochta



**DESCRIPTION:** Weekend of volunteer effort to create and sink artificial fish habitats to provide a cleaner lake and better fishing conditions that complement the new Claytor Lake Boy Scout Aquatics Base. We will create artificial plant structures using cinderblocks, polyethylene pipe, and cement. We will submerge these structures into the lake. We will camp in new cabins and be part of a project that will benefit thousands of Scouts each year. This volunteer trip is being conducted as part of William O'Brochta's Hornaday project. Note that Hornaday projects are similar to Eagle projects and are focused on conservation.

**COST:** No cost.

**PREREQUISITES:** None. This trip is suitable for all Scouts interested in service hours.

**FOOD/EQUIPMENT/CLOTHES:**  
 Food: Saturday snack/dinner, Sunday breakfast.  
 Equipment: Scout book, sleeping bag, cup/bowl/fork/spoon, cooking stove/fuel/pots.  
 Clothes: Work clothes to get dirty including gloves, and camping clothes for late spring weather conditions.  
 Optional Equipment: Bring a tent if you wish to earn a night of camping.  
 Items Provided By Troop: Water, Saturday/Sunday lunch, work tools and supplies.

**ADVANCEMENT:** During the trip the Scouts will have the opportunity to work on advancement.

**ADULTS:** A couple of adults are needed to drive and participate.

**TROOP CONTACTS:**  
 Trip Scout Leader: William O'Brochta (540) 343-1883    [william@obrochta.net](mailto:william@obrochta.net)  
 Adult Leader: Mike O'Brochta (540) 343-1883    [grits@obrochta.net](mailto:grits@obrochta.net)

**SCHEDULE:**  
 Saturday June 6:  
 8:00 am: depart from Dr. Ramsey's office on 3501 Franklin Road  
 9:00 am: arrive at Claytor Lake Boy Scout Aquatics Base  
 9:30 am: receive safety briefing and work assignments  
 12:30 pm: lunch  
 4:00 pm: snap work  
 6:00 pm: cook dinner  
 Sunday June 7:  
 8:00 am: cook breakfast  
 9:00 am: begin work  
 11:00 pm: lunch  
 12:30 pm: depart from Claytor Lake  
 1:30 pm: return to Dr. Ramsey's office  
 (times are approximate)



**Schedule:** The project should be conducted in the springtime when it is warmer. The project will follow a planning phase, design phase, execution phase, and a completion phase. The set date for the project is June 6-7. A schedule for those days follows:

Saturday June 6:

8:00 am: Depart from Dr. Ramsey's office on 3501 Franklin Road

9:00 am: Arrive at Claytor Lake Aquatics Base

9:30 am: Receive safety briefing and work assignments

12:30 pm: Lunch

4:00 pm: Stop work

6:00 pm: Cook dinner

Sunday June 7:

8:00 am: Cook breakfast

9:00 am: Begin work

11:00 pm: Lunch

12:30 pm: Depart from Claytor Lake

1:30 pm: Return to Dr. Ramsey's office

(times are approximate)

**Money:** The amount of money needed is not significant. Mr. Gregory Harmon indicated that the concrete blocks could be donated from a local company. A funding source has not been determined. Money will have to be raised or taken from the Scout Reservation's funds. A materials list is included below.

**Safety:** There should not be any safety hazards included with this project. Boats will be used to deposit the habitats, so some care should be taken around those. A cell phone and first aid kit will be available.

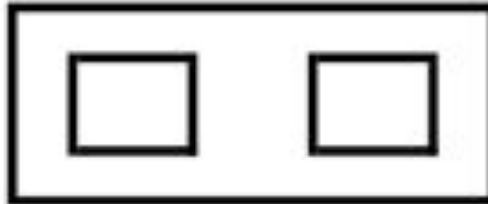
**Food & Restroom:** During the project, food, water, and restrooms are required. Food will consist of Subway sandwiches. Water should be available at the reservation. Other drinks like Gatorade will be provided. Restrooms are available inside the Reservation buildings.

## Design Drawing

Fish Structure



Cinder Block



Polyethylene Pipe



Portland Cement



### Materials:

Polyurethane Pipe (various lengths from 2-4 feet; 450 minimum quantity)-Claytor Lake State Park

Cement Cinder Blocks (75 quantity)-Claytor Lake Aquatics Base

Portland Cement-Purchase

Sand-Purchase (two bags per one bag of cement)

Cement Mixer-Claytor Lake Aquatics Base

Wheelbarrow and Shovels-Claytor Lake Aquatics Base

## Project Pictures:



Unloading Pipe



Mixing Cement



Shoveling Cement



Cinder Blocks



Compressing Cement



Inserting Pipe



Carrying Structures



Finished Product



Work Crew

## Carrying Out the Project:

**Summary:** Fish now have a new, pleasing habitat, and erosion is no longer a problem in this area of the lake. The project was completed with hardly any deviations to the plan. There was minimal cost to the Reservation for this work.

**Leadership:** During the project, I was the leader and decision maker. I worked closely with Mr. Brad Kane to coordinate material delivery and sinking arrangements. A week before the project, I went to the site and completed an inspection of the work to be done and reviewed procedures that would be followed. I also went with Mr. Kane to Claytor Lake State Park to pick up the polyethylene pipe we would be using from Mr. Dave Collett. On June 6, seven scouts and adults traveled to the base to begin the actual work. We constructed over seventy structures in about five hours. The next day, the group transported all of the structures to a dock for sinking. Following this part of the project, the group returned home. The total number of hours for this project are estimated at 250 hours. The below chart shows the number of hours worked by different individuals on this project.

| Name                | Hours      |
|---------------------|------------|
| William O'Brochta   | 160        |
| Michael O'Brochta   | 24         |
| Gregory Harmon      | 1          |
| Bradley Kane        | 5          |
| C. Russell McDaniel | 1          |
| Dave Collett        | 1          |
| John Copeland       | 1          |
| Sterling Moskal     | 9          |
| Harrison Macher     | 9          |
| Keith Willis        | 9          |
| Bo Poole            | 9          |
| Logan Comer         | 9          |
| Jack Jordan         | 9          |
| <b>Total</b>        | <b>247</b> |

**Benefit:** The benefit from this project was two-fold. The structures that we created can now be used as a habitat for fish, for increasing the fish population, and for helping grow the Fish Camp Program at the Reservation. The smaller benefit from the structures was to the lakebed. The bed needed to be stabilized to help stop further erosion and prevent a shift in the soil makeup of the lake.

**Changes:** Only one unexpected change resulted during the course of this project. The plan indicated that the structures would be sunk in the lake on Sunday, June 7. Scouts were able to transport the structures by hand on Sunday, but they were not able to sink them because Mr. Kane, who had agreed to drive the boat, was unable to do so. This is not a significant problem because Mr. Kane indicated to me that he would arrange for different scouts the Reservation to help him sink the structures.



BOY SCOUTS OF AMERICA

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340.265.0656 • fax 340.265.0657 • e-mail SCOUTS@BSA-BRMC.ORG • web WWW.BSA-BRMC.ORG

June 12, 2010

Mr. William O'Brochta  
3226 Peakwood Drive  
Roanoke, Virginia 24014

Dear William

I am writing to express my appreciation for the artificial fish habitat structures you installed at the Claytor Lake Aquatics Base. These structures were an important part of our dock permitting process with FERC and the Virginia Department of Game and Inland Fisheries. Additionally, the habitat has created excellent breeding structure around our shoreline increasing the opportunities for youth to catch fish and earn the fishing merit badge.

Thank you for organizing this project for the Blue Ridge Mountains Council. Best wishes with your future endeavors.

Sincerely,

Gregory Harmon  
Director of Camping Service  
Blue Ridge Mountains Council

Serving the Counties of Albemarle, Appomattox, Bedford, Botetourt, Campbell, Carroll, Charlotte, Craig, Floyd, Franklin, Giles, Hardy, Henry, Montgomery, Nelson, Patrick, Pocahontas, Pulaski, Roanoke, Smyth, Wayne and the Cities of Bedford, Shenandoah, Galax, Lynchburg, Martinsville, Radford, Roanoke and Salem



Above is a letter of appreciation from the benefiting organization.

**Update:** A year later, the structures have been sunk into Claytor Lake with the assistance of the Claytor Staff. A movie of the project was also produced and shown to members of my troop. The movie is enclosed in this application. At this point, the lakebed should be stabilized, and the structures should have started to take effect. More fishing has been observed in the area of the new structures, an indication of success.