# Promoting Wildlife Habitat Communities

## Certifying Haycock Township, PA as a National Wildlife Federation Community Habitat

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**Tag words:** Bats, Invasive Plants, Pesticides and Herbicides, Bees, National Wildlife Federation, Haycock Township

**Summary:** The National Wildlife Federation (NWF) inspires citizens to take initiatives and transform their own property and communities into wildlife habitats. The paper describes the process of registering and then eventually certifying Haycock Township in Bucks County, PA as a NWF Community Wildlife Habitat. The goals that were identified as a focus for this community included rectifying 1) the decline in bat and bee population, 2) the increase in invasive plant species by removing invasives and planting natives to support/sustain wildlife and 3) the decline in wildlife by limiting the overuse of herbicides & pesticides. Many households in the community joined in this effort to certify their own backyards while students from Rutgers University provided the academic support and factual details surrounding the identified goals. The culmination of these efforts will be celebrated on Oct 21, 2012 when the NWF comes to the community to certify them as the 63rd community in the United States to have achieved this certification.

**Video link:** http://www.youtube.com/watch?v=liytpK1inuk

**Declining population of bats and bees, invasive plant species taking over native plants, and harmful uses of pesticides and herbicides**

**About the National Wildlife Federation**: The National Wildlife Federation is an organization that teams up with Americans to protect natural wildlife. By turning backyards into wildlife habitations, NWF gives wildlife a place and a chance to flourish. Their work includes defending endangered species and removing invasive species while benefitting the ecosystem. In particular, their community certification program inspires citizens to take initiative and transform their own property into a habitat. The impact is effective when many households together form livable environments for both endangered

and native species. It is a win-win situation as invasive plant species are pulled and native plant species are planted to help the survival of native animal species.

**Bats**: In the past five years there has been a major decline in the bat population in Pennsylvania (it is also a problem across the northeast coast from New Hampshire to Tennessee) due to White Nose Syndrome (WNS). More recently, WNS has spread to states in the Midwest; Indiana reported their first case in February 2011. It is also now being reported in Canadian provinces such as Ontario, Quebec, New Brunswick, and most recently Nova Scotia. White nose syndrome was first discovered on February 16th 2006 and is the main cause of bat deaths. Over a million bats are estimated to have died already.

The first finding of White Nose Syndrome was in Howes Cave, visited by thousands of tourists each year in New York. Symptoms include white fungus over the nose, wings, tails, and replaces hair follicles and evades the skin. The scientific name for the fungus is Geomyces destructans, and it thrives in the dark, in cold temperatures, and humidity, all which are mannerisms of hibernation locations. In the United States, most bat species rely on hibernation for survival, as insects are not abundant in the winter and erratic behavior such as leaving hibernation early and dying in the cold. The sickness also causes bats to arouse more frequently and lose fat, which is stored during hibernation to keep them alive. In a study conducted in 2008, 69 out of 105 bats with the infection lost their fat reserves. With white nose syndrome, bats awake every 3-4 days, rather than the normal 10-20 days. The bats leave the cage and fly in freezing weather seemingly to seek out water sources. The fungus spreads from bat to bat and is the main type of transmission, but it is also believed that humans can carry the bacteria from cave site to cave site. Bats which are more prone to WNS are species sensitive to water loss. The most common cause of death is the infection itself, but other causes related to the fungi include starvation, dehydration, and exposure to cold temperatures. (fws.gov/whitenosesyndrome/pdf/WyomingWNSStrategicPlan2011.pdf)

The bat species in Pennsylvania include the Big Brown Bats, tri-colored bats (Eastern pipistrelle), Hoary bat, Indiana bat, Little Brown bat, Northern Long Ear bat, Eastern red bat, Silver-Haired bat, and Small-footed bat. WNS has been the most destructive among the little brown bats species. There has been a 93% decline of this species (batconservation.org). The lifespan of a Little Brown bat can go up to 25 years. The Indiana bat has already been distinguished as an endangered species before WNS, only surviving in a handful of caves in the Northeast. However with WNS, the bats' mortality rates are increasing and are close to becoming extinct. In Pennsylvania there has been a 90% decrease in four native species. After three years there were 50 remaining bats out of 23,000 in Mifflin County PA (readingeagle.com).

Bats are an important link in the food chain as they keep insects in check. Mosquitoes, one of the most unpopular insect types, are devoured by bats. It is estimated that one bat can eat between 600-1000 insects within an hour. Bats are the most dominant predator of night insects, and also eat moths and beetles. With the bat population dwindling, the insect population will rise and become harder to control. One million fewer bats means

there are between 660 and 1320 metric tons of insects that have gone uneaten per year. Bats help with agriculture by eating insects, which control crop damage. They are also important to pollination and the sowing of seeds. Lastly, bats are an important energy source for cave life. The effect it can have on the ecosystem and food chain can become a lot more serious if WNS persists.

The intensity of WNS is affected by the method and place of hibernation per species. Some bats choose warmer environments or dense clustering. Studies now reveal it will take hundreds of years to repair the damage that WNS has done to the bat population. Bats also procreate slowly which stunts the growth of the population. Each year from June to July only one baby bat is born to each female.

**Bees**

The honeybee colonies have been declining in the last few years, also since 2006, and has now become a global phenomenon. The U.S., Europe (Belgium, France, the Netherlands, Germany, Switzerland, Greece, Italy, Portugal, and Spain), China, Japan, and now Egypt have seen a disappearance in the bee population. Just over last winter (2010-2011), a 30% decrease of honeybees was observed in the US.

Colony Collapse Disorder refers to a bee hive with few remaining or no bees left. The queen bee is still present, with smaller immature bees. Most of the time honey is still found in the hive. Although this has always happened in honeybee history, the name Colony Collapse Disorder was penned due to the drastic population drop of 2006.

A list of fruits, vegetables, and other crop plants that cannot survive without bees include: almonds, apples, apricots, avocadoes, blueberries, boysenberries, cherries, citrus, cranberries, grapes, kiwifruit, loganberries, macadamia nuts, nectarines, olives, peaches, pears, plums, prunes, raspberries, strawberries, asparagus, broccoli, carrots, cauliflower, celery, cucumbers, cantaloupe, honeydew, onions, pumpkins, squash, watermelon, alfalfa hay and seed, cotton lint, cotton seed, legume seed, peanuts, soybeans, sugar beets and sunflowers.

A third of agricultural food depends on bees and pollination. These crops and plants, as well as endangered plants, are being threatened. Some fruits, crops, and plants may decrease up to 90% without the pollination of bees. It is suggested there are many contributing factors, and no one single reason is the main cause of decline. A direct source or reason has not been identified.

Loss and contamination of flowering plants is one contribution. Air pollution also affects the bees' ability to find flowering plants to pollinate. Chemicals from pesticides are being deposited into the pollen, which is the only food source for bees (and is also made into honey). In addition, flowering plants nourish each other with pollen, which is carried by the bee and spread to each flower they pollinate. Now some farmers and beekeepers are attempting to stop using pesticides to allow the bee colonies to develop immunity and resistance to the chemicals. The pesticides are sprayed onto flowering plants and

pesticide poisoning can be identified through the bees' pollen and wax (buzzaboutbees.net).

Parasites and mites are thought to be another factor contributing to the decline in the honeybee. Varroa mites were first found in Kentucky, and has since been invading bee colonies. These mites suck blood from both adult and developing bees, shortening the adults' life spans and destroying the developing brood. An adult female mite is able to enter the brood and lay eggs, hatching more mites to feed on the developing bees. The emerging brood will come out with missing legs or wings. These mites also impair the drone bees' ability to mate with the queen bee, thus affecting reproduction. Mites seem to be more attracted to the fluid of drones (male honeybees). The varroa mites are large enough to view with the naked eye; their bodies are about 1 mm in length. They are seen most often on the bee's thorax or abdomen. Contamination spreads from hive to hive and may be spread from bee to bee. Without treatment, varroa mites will destroy an entire bee colony.
Reference: ca.uky.edu/entomology

Radiation from cell phones has also been detected as a problem for colony collapse disorder. The radiation causes confusion for honeybees and thus they cannot find their way home. Many are lost and die outside. An experiment conducted with cell phone radiation concluded that the queen bee laid fewer eggs, worker bees stopped producing honey, and many did not return to the hive. Also, their behavior changes near power lines.
Reference: telegraph.co.uk

The harm cell phones and radiation have against humans is also astounding and can help support the bee theory. Over a span of 10 years, people who use cell phones are 40% more likely to grow a brain tumor. A study in Sweden showed that radiation from phones kill brain cells. Studies in both India and the U.S. found that heavy use of cell phones in men result in lower sperm counts. Unfortunately, cell phones are too new to formulate absolute proof of cancer
Reference: independent.co.uk/environment/nature

**Pesticides/Herbicides**

The major problems we face today with pesticides is its ability to remain in the air, in oceans, in the human body, and is attached to our fruits, vegetables, and meats which we intake. This in turn leads to permanent, serious health problems. Pesticides also harm natural animals, which live in fields, ponds, and other habitats that pesticides are sprayed in.

There are many different types of pesticides, nearly one for every specific type of task. Acaricides for mites, ticks, and spiders, Antimicrobial for bacteria and viruses, attractant which attracts pests for monitoring and killing, avicides for birds, fungicides for fungi, herbicides for weeds, insecticides for insects, molluscicides for snails and slugs, piscicides for fish, predacides for vertebrate predators, repellents to repel pests,

rodenticide for rodents, and synergists which improves the performance of another pesticide.

Pesticides are used on 900,000 farms and 70 million households in America. Herbicides are the most popular, as they are used in agriculture and used widely on lawns to control weeds. Although farming consists of 75% use of all herbicides, it has been shown that households use the same amount of herbicides per acre as farmers. Pesticide use became widespread around World War 2, when new, inexpensive chemicals were introduced. Many began to use pesticides casually and profusely, and as a result the pests they were trying to eradicate became genetically immune to the chemicals, while plants and animals that were not targeted were harmed, and pesticides emerged in many unexpected areas. Reference: ipm.ncsu.edu/safety/factsheets/pestuse

Pesticides and herbicides ruin the soil. Each gram of soil contains one billion microbes, which are destroyed when the chemicals enter the soil. Bacteria, fungi, algae, and protozoa are all micro-organisms that live within the top layer of soil. These micro-organisms are important to the decomposition in the soil and help recycle organic materials. They also help plants ingest the necessary nutrients needed to keep the plant healthy. Acenaphthene, a certain kind of PAH (Polycyclic aromatic hydrocarbons is the term that defines numerous contaminants), is a chemical that attaches readily to soil. Over time, soil that has been chemically treated will decrease in nitrogen compounds, so more pesticide will be required.

Because of persistent use, pesticides and herbicides are ingrained into our agricultural crops. Nearly all PAHs are difficult to disintegrate with or in water, so PAH is also present in waterways. Thus, with the chemicals in soil and water, the plant's inner structure could become infested by absorbing the chemicals through the soil.

Surface runoff of pesticides into lakes and streams which then lead to the ocean is another issue. Agriculture also plays a large role in contamination; when the soil is tilled every year, rainwater shifts billions of tons of topsoil into waterways. Also many farms use herbicides excessively at unsuitable times such as high precipitation. This not only wastes the herbicides but produces large amounts of pollution which run off into downstreams. A chemical called organochlorine runs off land and into bodies of water, thereby also polluting the seafood supply. Fish are eaten mainly for their important source of fatty acids, but organochlorine becomes stored in the fatty tissue of fish and contaminates it. Another popular pesticide, DDT, is able to genetically change the gender of fish.

Chemicals in pesticides are proven to damage brain cells and the nervous system. One particular chemical, sarin, is able to harm memory, thinking, mood, muscle control, numerous brain functions, and block nerve conduction. Sarin changes the genes of proteins that are crucial to the brain and causes brain cell death in high amounts of exposure. Additionally, sarin alters a membrane that keeps toxic substances away from the brain, genes that help oxygen species from cell damage and control the aging process, and genes that generate growth and stress hormones.

References: truehealth.org, ipm.ncsu.edu

Since pesticides will most likely never be banned in the U.S., we should at most take more precautions and limit our use of pesticides. Another responsible option is to not spray herbicides next to or near widely used roads and public places. Several methods include the natural way of pulling weeds by hand, rotating crops, interplanting different crops together, using natural fertilizers, insect traps and barriers,

**Registering and Certifying Haycock Township, PA as a National Wildlife Federation Community Wildlife Habitat**

Haycock Township applied to register as a National Wildlife Federation in the fall of 2011 in order to work toward becoming certified as a NWF community wildlife habitat. The registration application required that the team leader (Dr. Julie Fagan) select team members, describe the current habitat, and identify the community's goals and how the community will accomplish those goals. The team members work together to perform educational outreach activities and service projects with the community to accomplish the stated goals.

**Recruiting Members**:

Dr. Fagan recruited members by calling residents who she knew were interested in environmental issues, and gained more members from those who referred Dr. Fagan to friends they knew.

The following email was sent to several members of the community (three people have thus far declined, 8 individuals have accepted to serve on the team):

Dear ___: I am submitting an application to register Haycock Township as a National Wildlife Federation Community Habitat. One of the requirements is to build a "Community Wildlife Habitat team". From the NWF website "A team effort is required for your Community Wildlife Habitat project to be sustainable. While each team will be unique, we recommend a team of four to ten people who represent various viewpoints in the community. NWF can assist you in building your team by putting you in touch with certified Certified Wildlife Habitat participants, Habitat Steward volunteers and other contacts in your area." Each team member would need to fill out the Volunteer form and sign (see the forms on the website http://www.nwf.org/en/Get-Outside/Outdoor-Activities/Garden-for-Wildlife/Community-Habitats/Register-Your-Community.aspx , look under section 3 and open up the community wildlife registration form, then scroll down to the Volunteer Application), but would not need to have the background check (needed only if working with youth). I can bring you a copy of the form to fill out and sign.

I would serve as the "Team Leader". I am working with several of my college students at Rutgers University this summer (for 3 more weeks) to complete the registration and work

towards becoming certified. So you will not need to spend your valuable time doing that. However, I will supply each potential team member a draft for your comment prior to sending in the application.

As far as the 3 goals that are required to complete for the registration form, we thought that we would begin with the following:

1) Fostering the bat population. Keep them out of your attic but instead support their habitat outside to eat all those mosquitoes and other biting insects we don't enjoy and potentially are vectors for disease (West Nile and others). Activities may include building bat houses (someone in the township has a bat garden - need to contact her), placement of them, taking estimates of their numbers. There is a organization that is focused on the bat problem - they have a nice website. www.batmanagement.com/Batcentral/batspecs.html
http://www.portal.state.pa.us/portal/server.pt?open=514&objID=631013&mode=2
www.batcontrol-et.com/Pennsylvania_bat_control.htm

2) Removal of invasive species and making brush piles to create wildlife habitats. So education of what is considered invasive is necessary, how to properly remove (to limit regrowth), and maybe what might be suggested to plant.

3) To limit the use of pesticides and herbicides; considered by some to be environmental poisons. This includes the weed killers that the state road crew sprays on the sides of the road, residents that zap unsightly weeds, and those that apply chemicals to fruit and vegetable crops. Go for organic alternatives. This will require education and petitions (state road weed kill) to limit the application of potentially toxic (to whom? frogs, fish, birds, humans) chemicals.

I will have the students write up these goals in more detail; expand to develop a 1, 3 and 5 year plan as required for the registration application, and make their research findings accessible on the web (as the education piece).

I hope that you review my request for you to be a part of this team as a favorable one. It will only take up as much time as you want to give it – with minimally, you filling out the Volunteer application form and reading the application and saying yeh or nay.

Please contact me by phone or email.

Looking forward to our communications and establishing Haycock Township, to this date, as the only certified NWF Community Wildlife Habitat in PA.

Julie (Fagan) Haycock Township resident On Lake Nockamixon in Upper Bucks County, PA (610) 847-2411 drjuliefagan@yahoo.com

The team, now at 9, thought the above 3 goals were good ones. Two members were really worried about the bee population so we added that as one of our goals.

**Goals**:

The Haycock Wildlife Team has several main goals; these include helping restore the bat and bee population, removing invasive plant species and planting native species, and eliminating the use of pesticides and herbicides.

The first goal is to remove invasive plant species and plant native ones. Bucks County is known as the second county in Pennsylvania for its overgrowth of invasive plant species (441 total). Invasive plants are difficult to control and stunt the growth of native plants or can crowd them out entirely. One solution to this problem is pulling invasive plants and using them as brush pile for wildlife. Meanwhile, planting native plants can restore the natural habitats of Bucks County.

The second goal is to limit the use of pesticides and herbicides, as they are toxic to frogs, fish, birds, and humans. Pesticides ruin the soil; they kill the microbes that live in the soil, and contaminate food and water. The use of organic methods, such as treating the soil with natural fertilizers, interplanting, and weeding, will be stressed.

Additionally, we are seeing dramatic declines in both our bat and bee populations. White Nose Syndrome has killed off over a million bats since 2006. The fungus grows on the nose, wings, and skin of bats and drains fat and energy reserves needed for hibernation. An emphasis will be placed on building and placing bat houses in the outdoors (not the attic!).

Bee colonies, nearly one-third of them, have vanished due to Colony Collapse Disorder since 2006. Honeybees are extremely important as they pollinate crops and flowers. Without them, numerous crops will be in jeopardy such as apples, broccoli, carrots, and onions, to name a few. Probable causes of their decline include pesticide exposure, air pollution, climate change, invasive mites, and lack of flowering plants. Planting native flowers, reducing pesticides and establishing bee colonies will be emphasized.

**The Points – Oh those points!**

The NWF has ascribed points to certain activities. To register (not certify, but to get the process going) the community, the team needed to collect 40-70 points. The number of points required to subsequently certify the community depends on the size of the community. Haycock needs 250 points for certification. For example, one point is acquired by having a community member certify their individual backyard and as "Backyard Habitat".

**Example of activities that earn Points toward the 250 necessary for certification**

10pts Create a website where community members can learn about your project
10pts Write a regular column in your community paper to educate community members about your project (may be an online newsletter or blog- Bucks County herald
5pts Create and distribute a native plant list for your community

10pts  Hold a garden tour that features certified habitats
10pts  Create a demonstration garden at a public site, with educational signs
10pts Examine your community's weed ordinances, or other public policies, and work to make them native plant and habitat friendly
10pts Work with local park agencies to convert parkland to wildlife friendly landscapes.
10pts Organize a native plant sale
5pts Organize an invasive plant removal at a public site
5pts Coordinate a stream or trail clean up
10pts Work with local nurseries to label and/or provide native plants
100pts Get 100 residents to individually register their Backyard as a NWF habitat

**Township Meetings**

To present the idea of registering Haycock Township as a NWF Community Wildlife Habitat, Dr. Fagan attended the monthly Haycock Township meeting on June 7th , 2011. The board of supervisors, 3 township employees, and 4 Haycock residents were present, 10 total. The supervisors were asked if they had any ideas/pressing issues regarding what wildlife habitat goals the township as a community should focus on.  Other than wanting to see a tighter control on the deer and stinkbug populations, they had none and suggested the Dr. Fagan poll the residents for ideas for goals.

At the July 2011 township meeting, Dr. Fagan and her student Lisa Giordano, a senior at Rutgers University majoring in Biochemistry, appeared before the Township supervisors to present the merits of the NWF program and benefits to Haycock Township. The supervisors were not yet convinced that they should spend taxpayer money on the project (it costs $25 to send in the application fee to register the community).

On Aug 1, 2011, Haycock resident and team leader Dr. Julie Fagan went before the board with additional resident support (more properties certified) in an outrageous bee costume to again request that they endorse and write a letter of support to the NWF to register the Haycock Township as a NWF Community Habitat.  Third time was a charm - they finally agreed and endorsed the $25 check and wrote a letter of support.

http://edition.pagesuite-professional.co.uk/launch.aspx?eid=5f68813e-d569-4e7a-9b77-c49126e561b7

**Blog/ Website**

We started a blog at wordpress.com (haycockwildlifehabitat.wordpress.com) to inform the members of the process of registering and certification and provide a educational resource for the residents. On it we have posted the registration form, the plan for gaining points (above) and explained the four goals that the township will try to help restore as a community. One member, Gina Frederick, is very knowledgeable about Lake Nockamixon and its plant environments. Many posts on the blog feature excerpts from her booklet that she prepared for Lake Nockamixon.

**Activities that were done to achieve certification**

The point system that NWF has designed is subdivided into five categories and are as follows: Registration (40 points minimum), Habitat Certifications (100 points minimum), Education (40 points minimum), Community Projects (50 points minimum), and Administrative Goals (20 points minimum).

The following is a detailed account of all points earned toward Haycock Townships goal to attain NWF Community Habitat status:

**Notebook Index of Points**



**Registration – 50 Points**
Completion of mandatory registration packet – 40 points
http://www.nwf.org/~/media/PDFs/Garden-for-Wildlife/Certified-Wildlife-Habitat/Final-2012_Complete_CWH_Registration_Form.ashx

- Map of Community (5)
- Completion of Part II: Ecological Characteristic of Community Description & Demographics (10)
- Letter of Support (10)
- Plan to keep in Regular Communication (5)
- Identification of Potential Funding Sources (5)
- Identification of possible Demonstration Gardens (5)
- Organization of Kick-Off Event (10) – June 28, 2011

**Total Points: 50**

**Habitat Certifications – >100 Points**

To help township residents get their backyard certified, Dr. Fagan and her student Lisa Giordano went door to door to speak with residents. Our brochure was distributed and appointments were made with the resident to discuss their specific property.

Residences (1 pt ea.) –
Schools (5 pts. Ea.) –
Farm, Business, House of Worship, Community Space (3 pts. Ea.) –
Team Member that Registers their Property (3 pts. Ea.) -

**Education – 60 Points** (not including 7 papers with accompanying videos soon to be published on the web – see appendix II with titles and summaries of each article)

**June 11, 2011** – Established resource library/bibliography where community members can get information about project**. (10 pts / 2 hours)**

- http://haycockwildlifehabitat.wordpress.com/

**Oct 6, 2012** – Create a website where community members can learn about your project**. (10 pts / 5 hours)**

http://haycockwildlifehabitat.wordpress.com/about-3/

**June 14, 2011** - Created a CWH Project Brochure (tri-fold) specific to Haycock **(5pts, 3h)**

**June 12, 2011** – Write a regular column in your paper to educate community members about Haycock Twp. Community Habitat. **(10 pts/ > 50 hrs)**

- http://haycockwildlifehabitat.wordpress.com/

**July 5 &14, 2011** – Secured a feature article in local media **(10 pts / 1 hr)**

- http://www.phillyburbs.com/my_town/quakertown/effort-under-way-to-certify-haycock-habitat/article_c4390691-5cbc-522d-ad12-d5f2449d3a05.html
- http://www.mcall.com/news/local/allentown/mc-haycock-wildlife-federation-20110719,0,4573761.story
- http://edition.pagesuite-professional.co.uk/launch.aspx?eid=9bfb4154-25c0-448e-8ca8-a31638b9121a (page 2)

**August 14, 2011** – Create & Distribute a native plant list for community **(5 pts/ 2 hrs)**

- http://haycockwildlifehabitat.wordpress.com/2011/08/14/informative-links-to-native-and-invasive-plants-in-pa/

Hold a series of at least 3 workshops to educate the community members about wildlife and gardening **(10 pts)**

**July 30, 2011** – How to make a Rain Barrel **(3 hrs)**
**April 2012** – Bat presentation through the Rutgers Nature Through Nurture program to children ages 8-12 **(3 hrs)**
**April 28, 2012** - Family Pond Prowl at the Nockamixon State Park. Macroinvertebrates that live in the pond and how insects are beneficial for both habitat and as indicators of water quality (3 hrs)

**Install screen: If using a screw top barrel, simply unscrew the lid, have a helper hold a 2 ft x 2 ft piece of fiberglass window screen over top of the barrel and pull taught. Then screw the lid down on top of the screen. Trim excess screen as desired.**

If using a basket to insert into the top of the closed top barrel, simply cover the entire basket with a sheet of fiber-glass window screen large enough to allow it to be tied at bottom, and seat the basket in the inlet opening.

Congratulations! The rain barrel is done.

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# How to make a Rain Barrel

***Inlet:*** Use a jig saw to cut an 8-inch diameter hole in top of barrel. Or, if using a pond basket, co ander, or other device for the inlet, cut the opening to fit the device without gaps to avoid all ɔwing in mosquitoes.

***Faucet:*** For a screw top barrel, use the drill and one inch hole saw to drill a hole about six inches up from the bottom. If using a closed top barrel, the length of your reach inside the barrel to where you can screw on the lock nut will determine how far down the hole should be drilled. Avoid drilling on a seam, which will cause the barrel to crack and leak.

Wrap two thirds of the faucet threads with two layers of the thread seal tape. Leave the bottom third of the threads uncovered so it will be easier to start threading into the barrel. Apply a layer of sealant over top of the tape and threads. Use latex-free gloves when using silicone sealant (caulk).

First cover half the threads and around the barrel wall with sealant, then screw the locknut on and tighten down using the groove joint pliers.

Wrap thread tape around two thirds of the pipe thread side of the garden hose adaptor. The pipe threads are finer then the hose threads. Leave the bottom third of the threads uncovered, similar to the way the faucet was done.

Cover the threads and tape with a layer of sealant. The overflow fitting threads are slightly larger in diameter than the faucet threads, so once you start threading into the barrel by hand, you will quickly need to use an adjustable wrench to tighten the fitting.

Line-up the threaded portion of the faucet with the hole in the barrel, and applying pressure, screw in the faucet. The sealant will pile up behind the faucet as you screw it in, filling in any small cracks.

Smooth the excess sealant around the base of the faucet.

***Overflow:*** Decide which side you want to locate your overflow; right side, left side, or facing front. Avoid having the overflow face toward your house. Using the one-inch hole saw, drill a one inch hole about four inches from the barrel top.

Thread the locknut to the inside threads of the overflow.

**Community Projects – 50 Points**

**August 12-17, 2011** - Organize a Native Plant Sale **(10 pts / 3 hrs)**

- http://haycockwildlifehabitat.wordpress.com/category/replacing-invasives-with-natives/

Create an information booth at one or more community events-up to 3 at 5 points each **(15 pts- 3 hrs/ date)**
**Sept. 30, 2012; June 26, 2011; July 31, 2011; Aug 28, 2011; Sept 25, 2011**

- At Haycock Firehouse Sunday breakfasts - Information Table with our Haycock Community Wildlife brochure, and the NWF Backyard habitat application; also NWF magazines and NWF backyard habitat sign

**June 1, 2012 -** Organize an invasive plant removal at a public site **(5 pts / 32 hrs)**

- Removal of Invasive Plant Species, Scrub, Diseased Trees & Shrubs from the edge of Lake Nockamixon - Cost $1600 paid for by Haycock resident

Habitat team member that serves on community board or council related to environmental issues: **Dr Julie Fagan, Rutgers Energy Institute (5 pts)**

**Oct 27-Nov 17, 2011** - Three presentation to organizations (South Brunswick, East Brunswick, and Woolwich, NJ Townships) not yet associated with CWH project-5 pts each to promote the NWF Community Habitat Wildlife Program **(15 pts / 6 hrs)**

**July 24, 2011 –** Speaking Engagement: Scope of Project & Backyard Certification @ St Paul's Church (Haycock Twp) - Dr. Julie Fagan **(1 hr)**

**October 20, 2011 -** Speaking Engagement: Natural habitats for local wildlife @ Haycock Historical Society – Dr. Julie Fagan **(1 hr)**

**Administrative Goals – 30 Points**

*Required:* Maintain a project notebook
*Required:* Individuals on the post-certification Habitat Team: **Julie M. Fagan, Ph.D.**, **team leader**, **Beth Clark**, **Jenn and Alex McCracken**, **Drs. Warren and Roberta Heydenberk, David Hughes, Gina Fredericks, Carol Schroding.**

Partners Organization affiliated with the Haycock Wildlife Community Habitat 10 pts each, up to 5 **(30 pts)**

- The Turnip Truck
- NE Natives and Perennials
- Vanderlely Landscaping

**Appendix I: Excel Spreadsheet of all Project Activity**

**Appendix II: Supporting Documents**

Microsoft Word Document

**Appendix III: Activity/Points**

Microsoft Word Document

Haycock Township, with the help of many township residents and students of Rutgers University, was able to attain the points required of NWF to be certified as an NWF Community Habitat. As aforementioned, this will not only promote ecological restoration of native plant species and local wildlife; but also, unites the residents, bringing forth a greater sense of community and in general a better place to live. Haycock Township is set to celebrate their achievement of the NWF Community Habitat certification on October 21, 2012.

**Time to Celebrate!**

**Save the Date! - Oct 21, 2012- :**
**Haycock NWF Community Habitat Certification Celebration**
**On Sun Oct 21, 2012 between 1-4pm, a representative from the National Wildlife Federation will be travelling to Haycock Township to officially certify Haycock Township as a National Wildlife Federation Community Habitat. Haycock Township will be the 63rd NWF community habitat certified in the US. The ceremony will take place at the township building, 640 Harrisburg School Rd., Quakertown, PA, during their annual open house. All are welcome.**

The Haycock Township Open House will be held on Sunday October 21st from 1-4pm. In the event of rain, the rain date is October 28th. There will be food, beverages, caricatures, face painting, pumpkin painting, clowns, balloons and more!

**Goals for Upcoming and Future Years**

1) Get young people living in the township involved in the program and serve as team members with the guidance of the adult team members. We have recruited 2 young team members thus far (M.M. and D.B) and potentially a new adult team member P.M. (pending).

2) In order to help limit traditional pesticide use, harbor pollinator populations, information will be distributed through our website and ask that Haycock Township residents participate in a surveys and sign a pledge to use safer pest control and harbor pollinator populations.

3) Fundraiser for the purchase of 2 signs showing that Haycock Township is a NWF Community Wildlife Habitat. Ideally, these signs will be permanently affixed to poles along the highway (Rte 563) as you enter and exit the township. This is a state road and we will need to adhere to their sign regulations and gain permission to put them up.

4) Workshops given throughout the year, each year. Proposed workshops for the 2012-2013 year include:

Lecture / presentation by Gina Frederick that addresses how average homeowners can have an impact on biodiversity, storm water runoff, water quality.

Classes and workshops at a local farm given by Jenn McCracken, teaching people of all ages how to grow their own healthy food, and implementing school and community gardens that will change the way kids and adults eat and live. These programs have the potential to create a ripple effect locally, improving the health and lives of many people in both urban and rural communities.

5) Documentary showings and social gatherings (dessert and coffee) to be held at the Haycock Historical Societies Stover House, the township building or in the homes of Haycock residents.

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**EDITORIAL**

# Haycock Township as a Community Wildlife Habitat

*Haycock strives to be first community in PA to be certified by the National Wildlife Federation*

Dr. Julie Fagan, Janice Foo

The National Wildlife Federation has a program that encourages both individual backyards and entire communities to register as wildlife habitats. Bucks County, a place with bountiful land and a deciduous ecosystem for planting native species, is an ideal location for this purpose. Haycock resident Dr. Julie Fagan has certified her own backyard and is heading the community group that is working towards certifying Haycock Township as a whole.

The Haycock Wildlife Team has several main goals. The first is to remove invasive plant species and plant native ones. Bucks County is known as the second county in Pennsylvania for its overgrowth of invasive plant species (441 total). Invasive plants are difficult to control and stunt the growth of native plants or can crowd them out entirely. One solution to this problem is pulling invasive plants and using them as brush pile for wildlife. Meanwhile, planting native plants can restore the natural habitats of Bucks County.

The second goal is to limit the use of pesticides and herbicides, as they are toxic to frogs, fish, birds, and humans. Pesticides ruin the soil; they kill the microbes that live in the soil, and contaminate food and water. The use of organic methods, such as treating the soil with natural fertilizers, interplanting, and weeding, will be stressed.

Additionally, we are seeing dramatic declines in both our bat and bee populations. White Nose Syndrome has killed off over a million bats since 2006. The fungus grows on the nose, wings, and skin of bats and drains fat and energy reserves needed for hibernation. An emphasis will be placed on building and placing bat houses in the outdoors (not the attic!).
Bee colonies, nearly one-third of them, have vanished due to Colony Collapse Disorder since 2006. Honeybees are extremely important as they pollinate crops and flowers. Without them, numerous crops will be in jeopardy such as apples, broccoli, carrots, and onions, to name a few. Probable causes of their decline include pesticide exposure, air pollution, climate change, invasive mites, and lack of flowering plants. Planting native flowers, reducing pesticides and establishing bee colonies will be emphasized.

In the upcoming July 11 Haycock Township meeting at 7pm, Dr. Fagan will request support from the Board of Supervisors to register the township as a National Wildlife Community Habitat. Certification will involve a collaborative effort amongst residents that wish to participate.
Anyone can register their own backyard though; go to the NWF.org website.

Contact Dr. Fagan at (610) 847-2411

# Bee costume gets Haycock's attention

*Diane Marczely Gimpel Bucks County Herald Aug 3, 2011, pgs 1 &8*


At the Haycock supervisors'Aug.1 meeting, resident Julie Fagan used extraordinary measures to show she really wanted the board to seek designation for the township as a National Wildlife Federation Community Wildlife Habitat. She did this by covering her torso with a large, school bus yellow cylinder around which black electrical tape was wrapped in horizontal stripes, placing a headband with antenna- like protrusions on her head and wearing black tights and yellow socks. Supervisor Henry DePue said:"I've seen it all now." "I did dress up as a bee," Fagan told the board. "That should achieve some points." The bee costume probably was not what convinced the supervisors to unanimously agree to ask the National Wildlife Federation for the designation. It was that Fagan reported more than 50 residents had sought certification for their

backyards as backyard wildlife habitats. At least 50 backyards must be certified by the federation as backyard wildlife habitats for the township as a whole to get community certification.

At the supervisors' July meeting, board members told Fagan they wanted to make sure the community supported her idea before they backed it.

The National Wildlife Federation, based in Reston, Va., calls itself the nation's largest conservation organization. It aims to protect and restore wildlife habitats and combat global warming, according to its web site. While individual residences that have backyard wildlife habitat certification have individual goals for their backyard habitats, Fagan has established goals for Haycock Township as a whole, including saving declining bat and bee populations, removing invasive plants and replacing them with native plants and limiting the use of environmental poisons. Fagan told the board at its Aug. 1 meeting that scientists noticed in 2006 that honey bees were dying at alarming rates. The decline is important because honey bees pollinate 30 percent of the food supply. Pesticide use is believed to be a factor in the decline, according to Fagan, a Rutgers University professor. "Our mission is to support the bee population and get residents to be aware of what they put on their land," Fagan said. "The initiative will promote healthy habitats."Fagan also has said the project would bring the community together toward a common goal and foster environmental education and awareness. Fagan has information about the proposal on a blog at haycockwildlifehabitat.wordpress.com.

http://edition.pagesuite-professional.co.uk/launch.aspx?eid=5f68813e-d569-4e7a-9b77-c49126e561b7

**Flyer that was made available at our kick off event to the Haycock Township residents**

## Local Events

### Lake Nockamixon Pulling Party

- June 14 and 21 from 5-7 pm.
- Help pull the invasive water chestnut from the lake.
- Meet at 3 Mile Run Road with your own canoe or kayak
- Please register RA-nrspnockenved@state.pa.us

### Lake Towhee Pulling Party

- June 28, 29 & July 9
- Help pull the invasive aquatic plant - Water Chestnut
- Meet at 9am at the boat launch (via Old Bethlehem Rd entrance)
- Bring kayak/canoe/raft if you have, lunch, wear clothes/shoes to get muddy in
- Contact Meghan, the Bucks County Conservation District Watershed Specialist at 215-345-7577

**haycockwildlifehabitat.wordpress.com**
Dr. Julie M. Fagan
Haycock Resident

drjuliefagan@gmail.com
(610) 847-2411

Certifying

**Haycock Township**
**as a**

National Wildlife Federation
**Community Wildlife Habitat**

*(the 1st in PA!)*

How you can be a part of this community effort …

## National Wildlife Federation

About NWF and certification

The National Wildlife Federation is an organization that teams up with Americans to protect natural wildlife. By turning backyards into wildlife habitations, NWF gives wildlife a place and a chance to flourish. Their work includes defending endangered species and removing invasive species while benefitting the ecosystem. In particular, their community certification program inspires citizens to take initiative and transform their own property into a habitat. The impact is effective when many households together form livable environments for both endangered and native species.

250 points total are needed from Haycock community in order to be certified (100 of which must be from residents certifying their backyard).

So, let's get started!!!

## Is your backyard wildlife friendly?

Registering your backyard with the National Wildlife Federation.

1.) Go here to start!
http://www.nwf.org/Get-Outside/Outdoor-Activities/Garden-for-Wildlife/Certify-Your-Wildlife-Garden.aspx?campaignid=

2.) Click on the green certify now button to begin!

CERTIFY NOW

3.) Select type of habitat (home, business, place of worship, school) then fill out info and submit!

4) Inform us that you've submitted (your point counts!) drjuliefagan@gmail.com. Your NWF backyard will then be listed on our community blog

**haycockwildlifehabitat.wordpress.com**

5) Submit your questions and habitat writings to **our** blog

## Community goals

3 goals for Haycock Township

- **Save the bats!**
The bat population is rapidly declining due to white nose syndrome (WNS). Millions of bats have died in the past 5 years. Building bat houses (keep them in their own, not your house) can increase bat numbers and control mosquitoes.

- **Pull invasive and plant native plants**
Invasive plant species crowd out native plants and keep them from flourishing. Identify invasive plants, remove them and make a brush pile for wildlife. Planting native plant species can provide food and habitat for wildlife.

- **Limit use of environmental poisons**
Pesticides and herbicides are a threat to frogs, fish, birds, and humans. They are also not good for the soil and contaminate food and water. The chemicals can remain in the air for 21 days and even up to a few years. Organic methods can be found here: **http://1greengeneration.elementsintime.com/?p=306**

Additional goals and events will be posted on our blog with your input!

**Second flyer advertising Residential Backyard Certification Appointments**

## Local Events

**Residential Backyard Certification Appointments**

For residents interested in certifying their 'Backyard Habitat'

Schedule an appointment for Sundays July 17, 24, & 31 at goingreenpa@yahoo.com

Appointment entails:

A home visit from Dr. Fagan's student to help the homeowner to fill out the NWF Backyard Certification form,

Provide recommendations with regards to removal of invasive species, natural food, and water sources to support wildlife, etc

Upcoming events to include:

Native Plant Sales

Showing of a Bee documentary

Opportunity to purchase Bat houses

Demonstration Garden Tours - featuring certified 'Backyard Habitats'

**Benefits of certifying Haycock as a Community Wildlife Habitat include:**

Bring community together toward reaching a goal

Provide education & hands-on workshops

Provide outlet for creative and intellectual expression

Provide expertise and services to residents

Stimulate the local economy by highlighting local businesses and increasing the value of real estate

Enabling environmental stewardship

haycockwildlifehabitat.wordpress.com
Dr. Julie M. Fagan
Haycock Resident

goingreenpa@yahoo.com
(610) 847-2411

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5) Submit your questions and habitat writings to our blog

## Community goals

3 goals for Haycock Township

• **Save the bats and the bees!**
The bee and bat population is rapidly declining due to colony collapse disorder (bees) and white nose syndrome (bats). Anyone interested in starting a bee colony (to promote pollination and honey – yum) or putting up bat houses (keep them in their own, not your house) that will increase bat numbers and control mosquitoes.

• **Pull invasive and plant native plants**
Invasive plant species crowd out native plants and keep them from flourishing. Identify invasive plants, remove them and make a brush pile for wildlife. Planting native plant species can provide food and habitat for wildlife.

• **Limit use of environmental poisons**
frogs, fish, birds, and humans and contaminate our food and water. Learn how to grow your own food organically and maintain your garden Pesticides and herbicides are a threat to toxin-free.

Additional goals and events will be posted on our bl

**It's Official!**


**Articles Published:**

The Intelligencer: Haycock earns prestigious environmental certification

http://www.phillyburbs.com/news/local/the_intelligencer_news/haycock-earns-prestigious-environmental-certification/article_76ae93c9-007b-5f34-b1ae-e004ac58bc91.html#user-comment-area

# National organization cites Haycock for wildlife preservation

*Laura Kruger*

The National Wildlife Federation was in Bucks County last weekend to present the Haycock Township supervisors with the National Wildlife Federation Certified Community Wildlife Habitat designation during their annual open house.

Roxanne Nersesian Paul, senior Coordinator for the NWF Community and Volunteer Outreach Education Department, said that there couldn't have been "a better time of year or more beautiful day" to celebrate this prestigious achievement.

The commendation honors the community for its conservation and stewardship of the land and the creation of a habitat where people and wildlife live in harmony.

Haycock Township is the 63rd community in the country to receive the designation, which seemed coincidentally fitting as the Haycock Township Fire Company is Station 63. Only two other communities in the state have earned the award, Hamburg and the City of Bethlehem, which was awarded only two weeks ago.


HEATHER DISARRO

*At the Haycock presentation are, from left, Wildlife Control Specialist David Hughes, Haycock Township residents Warren and Robyn Hendenberk, Gina Frederick of Vanderbilt Landscaping, National Wildlife Federation Representative Roxanne Nersesian Paul, Haycock Township Supervisors Kathy Robb, Michael Leonard and Henry DePue, and Haycock Township resident Dr. Julie Fagan.*

**The Haycock Wildlife Habitat Group**