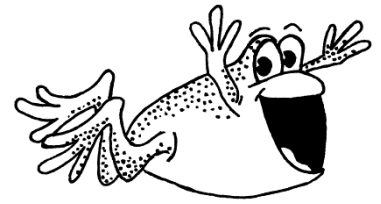




LEEPfrog



The Newsletter of the
Lutherlyn Environmental Education Program

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A Fox of a Different Color by Todd Garcia-Bish

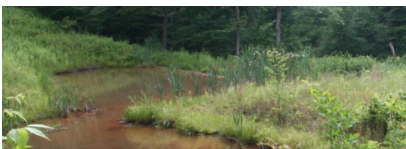


Photo by Bettina Arrigoni [Creative Commons Attribution 2.0 Generic](#)

When most people hear the word fox, they immediately think of the red fox (*Vulpes vulpes*). Although some have heard about gray foxes (*Urocyon cinereoargenteus*), most think that they are just a red fox of a different color. Genetically speaking, however, red foxes are more closely related to wolves, coyotes, and domestic dogs than they are to gray foxes. The truth is that gray foxes are an extremely unique species and vastly different from their red cousins.

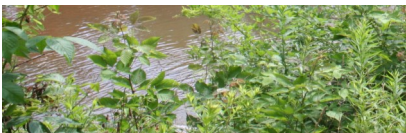
Although their habitats sometimes overlap, red foxes prefer open fields and farms while gray foxes prefer deciduous forests. Both species use dens for giving birth and raising their young. Underground dens are used by both reds and grays, but gray foxes will also use hollow logs and tree cavities. In fact, gray foxes have anatomical adaptations that allow them to spend much of their time in trees.

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Notes from the Naturalists by Holly Schubert

These are the twigs of a hemlock tree infested with **Hemlock Woolly Adelgid**. The little white puffs at the base of the needles hide tiny aphid-like insects that damage hemlock trees by sucking the sap out of the needles. Needles are damaged and die off, and trees cannot get enough nutrients and eventually perish. Woolly adelgids are an invasive pest, accidentally introduced from Japan. They have been spreading throughout the eastern United States for several decades, and have been expanding into Western PA over the past 15 years. Unfortunately, we spotted them on some of our hemlock trees at Lutherlyn in 2020. Woolly adelgids disperse naturally by wind or animals, so there is no way to prevent their eventual spread into an area with hemlock trees and suitable climate.



Woolly adelgids, like most invasive species, have no natural predators or controls here. They reproduce asexually by cloning, making it especially difficult to control a population once it is present. Extended periods of cold weather can kill off many of the adelgids, but not every winter gets enough cold weather here to have this effect. Current controls include horticultural oils, pesticides, and predatory beetles. To learn more about treatment options, see our Nature of Lutherlyn blog for December 8, 2021.

(www.lutherlynnature.blogspot.com)

The LEEPfrog is published annually by the staff of the Lutherlyn Environmental Education Program.

A Fox of a Different Color (continued from page 1)

Unlike other canids, gray foxes have wrists that rotate like human hands do, which allows them to grasp a tree trunk for climbing. Their claws are curved and semi-retractable, much like a cat's, and, along with spreadable toes, this further aids tree climbing. Gray foxes also have a large tail for their body size that enables them to maintain their balance when climbing or jumping.

Climbing trees is very important for gray foxes. They often rest on tree branches and also find some of their food in trees. As omnivores, gray foxes eat a great variety of things. They prey upon rabbits, small mammals, reptiles, grasshoppers, and crickets. They also climb trees to catch birds or steal eggs from their nests. During the summer and fall, foxes mostly eat plant material like nuts, berries, and other wild fruits. When gray foxes have caught a rabbit or other animal, they will often carry their prey up onto a tree branch. This keeps them out of reach of their main predator - the coyote.

Gray foxes are definitely a beneficial predator to have in Pennsylvania and throughout much of the U.S. Unlike their red fox cousins, grays tend to avoid people and their poultry. As a small mammal predator, they eat lots of mice. White-footed mice are where ticks pick up Lyme disease, so the more animals preying on mice, the better. Even if seldom seen, gray foxes are wonderful to have around.



Photo by Renee Grayson
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Earthcare Corner: Getting Started with Solar by Holly Schubert



We have had solar panels at Terra Dei Homestead since 2007. This experience has led people to ask us for tips about getting their own solar system. We recently had a chance to talk about this with our solar installer, John Younkin of Blue Roof Farms. Here is what we learned from him:

Currently, the average payback period is about 12-14 years. You will make back in electric bill savings what you paid for the solar installation in about 12-14 years.

(That estimate does include some payback from tax credits, which non-profit organizations do not qualify for; so for non-profits like churches or schools the payback time would be a little longer.)

Most solar systems today are grid-tied. This means you are still connected to the power company as well as to your solar panels. Sometimes the solar panels provide all the electricity you need, or even more, and sometimes you need to draw electricity from the power company. This eliminates the need for batteries when the solar panels are not producing and allows for extra power to be sold back to the electric company.

Solar panels and installation currently cost about \$1,300-\$1,500 per panel. This is an overall expense that factors in the costs of additional equipment, such as inverters and wiring, as well as installation. Most

residential customers need somewhere around 24-36 panels to supply all their electricity. (To learn more about how to estimate how many panels would supply all your electricity, see our Nature of Lutherlyn blog for February 4, 2021, www.lutherlynnature.blogspot.com.) How many panels you choose to install is up to you – you don't have to install enough panels to provide ALL your electricity. Because the system is grid-tied, you could provide some of your electricity from solar panels and some from the grid. You also don't have to install all the panels you want all at once – you can add more later.



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Terra Dei Homestead: Expanding our Sustainable Vision

by Todd Garcia-Bish

This column has usually been a place where we have updated readers on new developments at Lutherlyn's sustainability site - Terra Dei Homestead. However, after 28 years, we find that we are not developing new things at Terra Dei as much as we are applying what we have learned to other areas of Lutherlyn's ministry.

The most unique aspect of Terra Dei has been the basic straw bale structure. It was the first straw bale home in Pennsylvania and we expanded on this experience with the construction of Baker Chapel fifteen years later. In addition to taller and more complicated walls, we also used a more sustainable earthen plaster to cover the straw.

Terra Dei was given a metal roof in 2001. We have found that roof to be virtually maintenance-free. In addition, in 30 years when it needs to be replaced, it can be totally recycled. These two reasons were influential in decisions to put metal roofs on three Lutherlyn structures in 2021.



Recycled plastic lumber has been used at Terra Dei since the very beginning for benches, tables, compost bins, and (most recently) decking. Lutherlyn is now using plastic decking to construct the accessible trail boardwalks, docks for Miller Lake, and to replace the decks on some of the cabins.

When Terra Dei Homestead was constructed, we used carpet made from 100% recycled plastic bottles for floors in the living room and bedroom. Lutherlyn is now using a product that goes far beyond that. The new carpeting in cabins, Baker Chapel, Redwood Lodge, and Woodland Lodge is made by Interface. This company not only uses recycled and bio-based materials, it recycles used carpet and nylon fishing nets gathered from ocean waste.

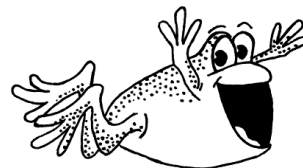
Energy efficient lighting has always been an important part of what we teach about at Terra Dei. Throughout the past six years, LED lighting has been installed in Woodland Lodge, Baker Chapel, the dining hall, and many fixtures in the cabins. In addition, fixtures that take fluorescent tubes are gradually being rewired to accept LED lighting.

Solar power may be the most impactful technology that we have used at Terra Dei. Solar panels were first installed in 2007 and added to in 2013. Lutherlyn is currently researching options for providing more of the entire camp's electricity with solar panels.

We hope that the lessons we have learned at Terra Dei touch some of the thousands of lives that experience it every year. We pray that our vision of a sustainable future may inspire others to care for creation in a similar fashion.

Register now for summer camp
at Lutherlyn!

www.lutherlyn.com/summer



Share this newsletter with a friend!

Contact us: Lutherlyn Environmental Education Program, Box 355, Prospect, PA 16052
(724) 865-9079, leep@lutherlyn.com, www.lutherlyn.com/EE

LEEP Public Programs: Saturday Safaris

Lutherlyn Saturday Safaris are a great way to spend part of a Saturday! They are designed for groups and families of all sizes and shapes. Safaris are \$8.00 per person and all of the programs involve outdoor adventures! Please check LEEP's website (www.lutherlyn.com/EE) or contact the LEEP office for more information or to register for a program.



- **March 5, 2022**- Maple Sugaring, 9:30-12:00 or 1:00-3:30
- **September 10, 2022** - Introduction to Mushrooms & Edible Plants, 9:30-12:00
- **November 5, 2022** - Geology and the Rocks of Lutherlyn, 9:30-12:00
- **February 4, 2022** - TBD, 9:30-12:00

Getting Started with Solar (cont'd from page 2)

Contact a solar installer. A good solar installer will walk you through the whole process – calculating how many panels you need and what type of system, giving detailed estimates of costs, taking care of the interconnection agreement and local permitting, as well as figuring out how to situate panels on your property and installing the panels and system.

Financially, solar panels are fully viable (they pay for themselves in electric bill savings well before the end of their useful life span of 25-50 years), and have been since at least 2003, even here in cloudy western Pennsylvania! In addition, of course, they provide electricity from a renewable resource and cause far less pollution than typical electricity-generating power plants. Getting your electricity from solar panels is a great way to care for the earth!

John can be reached at solar@bluerooffarms.com and www.BlueRoofFarms.com.

The Nature of Lutherlyn: Looking for a way to stay connected with LEEP and the nature of Lutherlyn between visits or field trips? Follow our blog, *The Nature of Lutherlyn*, or Lutherlyn's facebook page. Each Wednesday morning on Lutherlyn's facebook page, LEEP will post a *What is It Wednesday* photo. Readers have all day to guess what the photo is, and around 6 pm LEEP will provide the answer and a brief explanation. *What is it Wednesdays* are re-posted on the blog, usually the next day, and sometimes with expanded information. The blog also includes an archive of past *What is it Wednesday* posts. **Both current**

and past posts are tagged and searchable on the blog! If you want a post and photo to share with students or friends on trees, seeds, insects, animal tracks, or other nature topics, you can find it. Challenge yourself or your students to make a guess and learn along the way!



<http://lutherlynnature.blogspot.com>
<https://www.facebook.com/CampLutherlyn>

You Are Invited:
CampBlast



Saturday, May 7, 2022

Join us for a day of FUN that
 highlights all that Lutherlyn has to
 offer.

The best part.... **EVERYTHING IS FREE!**