

## STUDENT ACTIVITIES

### Singing the Praises of Wind Energy?

#### Research and Inquiry

Could your family consider getting a small wind turbine? Review the information provided to determine what would be required to get a wind turbine.

<http://www.smallwindenergy.ca/en/SmallWindAndYou/Planning.html> (All levels)

<http://www.omafr.gov.on.ca/english/engineer/facts/03-047.htm> (SS)

Based on the windsong article, review the following two turbine videos that address the danger of the traditional wind turbines. Based on your findings, which of the two would you recommend to be replacements? Why?

(MJS/junior/secondary)

1) <http://www.aerotecture.com/documentary.html>

2) <http://www.helixwind.com/en/media.php?categoryID=2>

Birds in Your Neighbourhood

Click on your province to see the conservation plans for birds nearest you. (All levels)

<http://www.ibacanada.com/cp.html>

According to the US Migratory Bird Treaty Act, there is a long list of protected birds. Take a look at the list to see which birds you recognize. Look them up on the Internet if necessary to find out if any of them migrate to your neighbourhood? (All levels)

<http://www.fws.gov/migratorybirds/intrnltr/mbta/mbtintro.html>

“MASITALA, Malawi -- On a continent woefully short of electricity, 20-year-old William Kamkwamba has a dream: to power up his country one windmill at a time. So far, he has built three windmills in his yard here, using blue-gum trees and bicycle parts.” Wind turbines seem like an excellent solution. Watch the second video featured on this website to find out about William’s success. (All levels)

<http://www.helixwind.com/en/media.php?categoryID=2>

#### Discussion and Debate

Which has more value, the energy from the wind turbines or the lives of the animals that are lost? What factors do you consider to make your decision? What might you propose to solve this dilemma?

This article suggests that many more birds are killed by buildings than by wind turbines. Based on this argument, what might make more effective solutions than reducing the number of wind turbines?

<http://www.greenenergyohio.org/page.cfm?pageID=116>

With all the efforts going into saving birds, here is a lesson about steps taken in order to kill them. This is an effective activity that presents students with controversial information in order to teach them how to make informed opinions.

(Elementary/MJS)

<http://www.learner.org/jnorth/tm/rwbb/RedwingPoisoning.html>

This story tells of the danger that tall buildings pose for migratory birds. FLAP (Fatal Light Awareness Program) is a group of volunteers whose mission is to save birds that collide with buildings. Find out how the group was formed and why office towers should turn their lights off at night.

Warning: the first picture will be disturbing for some students. You may want to keep the text of the story only.

(MJS/SS)

<http://www.canadiangeographic.ca/magazine/jf04/indepth/nature.asp>

#### Take Action

Great Backyard Bird Count (Canada and US)

Help out: Plan to count birds for at least 15 minutes during February 15–18, 2008.

<http://www.birdsource.org/gbbc>

This excellent resource offers a way for students to report the sightings of many migratory animals online. There is even a practice page for students to get familiar with the procedures. (Elementary/MJS)

<http://www.learner.org/jnorth/maps/Maps.html>

Make your own anemometer to measure how fast the wind blows. (All levels)

<http://www.energyquest.ca.gov/projects/anemometer.html>

#### Related Links

Creatures of the night

Links to pictures and sounds of nocturnal animals (not available in Firefox) (All levels)

[http://encarta.msn.com/list\\_creaturesofthenight/Creatures\\_of\\_the\\_Night.html](http://encarta.msn.com/list_creaturesofthenight/Creatures_of_the_Night.html)

Nocturnal animals

This page features links to many websites for elementary students to learn about nocturnal animals.

<http://www.deweybrowse.org/nocturnal.html>

Nocturnal eyes

Find out how different eyes function differently in order to see in the dark. (MJS/secondary)

<http://www.pbs.org/wgbh/nova/kalahari/nightvision.html>

How do animals see in the dark? (All levels)

<http://ebiomed.com/gall/eyes/nocturnal.html>

Nocturnal animals in Costa Rica video (Youtube)

A short infrared video & a few shots of animals taken on the playground of a school in Monteverde Costa Rica after the kids are gone home. Have you had any similar experiences? (Elementary)

<http://ca.youtube.com/watch?v=RUhPZy4Vljo>

Wikipedia definition of songbird

<http://en.wikipedia.org/wiki/Songbird>

Bird fact sheets

There are 462 species of birds in Canada. Find out about 50 of these species.

<http://www.hww.ca/hww.asp?id=7&pid=1>

Nature Canada

Nature Canada is a member-based non-profit conservation organization. Their network includes 40,000 supporters and more than 350 naturalist organizations across Canada. Their mission is to protect nature, its diversity, and the processes that sustain it.

[http://www.naturecanada.ca/bird\\_cons.asp](http://www.naturecanada.ca/bird_cons.asp)

# SCIENCE TIMES

*Up to date information and issues related to Science, Technology and the Environment*

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#### Related Links continued

BirdLife International is a global partnership of conservation organisations that strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources.

<http://www.birdlife.org/>

In this article, the Danish organization called “Danish Wind Industry Association” claims that bird collisions with wind turbines is only a problem in California. What steps could you take to find out if this information is accurate? (MJS/SS)

<http://www.windpower.org/en/tour/env/birds.htm>

Echo's Adventure

Follow Echo the bat through Arizona on his adventure to his winter hibernaculum. Learn about remote sensing and use false-color satellite images to help you find Echo.

(Elementary)

<http://science.hq.nasa.gov/kids/imagers/intro/story.html>

Bat research in California: Scientists at the USGS Western Ecological Research Center are studying bats in the San Francisco Bay area and in southern California to provide land managers information they need regarding the occurrence and status of bat species. Survey techniques include detecting bats by their vocalizations, observing foraging bats, and capturing bats at foraging or roosting sites. (MJS/SS)

<http://www.werc.usgs.gov/bats/>

Download this excellent bat resource for teachers put out by the American National Wildlife Federation.

(Elementary/MJS)

<http://www.nwf.org/batguide/batguide.pdf>

What is the US Migratory Bird Treaty Act?

[http://www.biokids.umich.edu/guides/conservation\\_status/m\\_bta/](http://www.biokids.umich.edu/guides/conservation_status/m_bta/)