

# SCIENCE TIMES

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

## STUDENT ACTIVITIES

### Biofuels May Lead to Invasive Species

#### Research then Report

Listen to or read about the traits of *Arundo donax*, a reed from the Mediterranean that has taken root in the US. It could either be considered an unruly, invasive plant, or a wonderful biofuel resource, depending on which group you listen to. Find out more details about both sides in this article and then decide which one you fall into. (MJS/SS)

<http://marketplace.publicradio.org/shows/2006/12/06/PM200612068.html>

Make a list of criteria that qualifies something as an invasive species. Then prepare a 1-minute public broadcast announcement that highlights the dangers and destruction of the invasive species: HUMAN (All levels)

<http://www.hww.ca/hww2.asp?id=220>

Research the effects of the Pine beetle. Starting with a map of BC, show the reach of the pine beetle by using a colour-coded legend. Try to include the changes over time. What strategies are being used in BC to combat the harmful effects? (E/MJS)

[http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/sof06/InFocus02\\_e.html](http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/sof06/InFocus02_e.html)  
<http://www.pfc.forestry.ca/entomology/mpb/historical/>

Contact a company or a vehicle owner who is using biofuel. Interview or invite them in to share their experiences. (All levels) Watch the videos “The Biodiesel Educational Video Series” which interview drivers who are using biofuel.

<http://www.bcbiofleet.ca/biodieselvideos.htm>

Make a pamphlet that educates people about biofuels. Use Google’s News Canada search engine to find out the latest information on biodiesel: (All levels)

<http://news.google.ca/news?hl=en&ned=ca&q=biodiesel&btnG=Search+News>

#### Discussion and Debate

Debate: Which is more important – creating new biofuels or protecting the environment from invasive species.

##### Discussion questions:

Invasive species are often introduced from other countries or islands. However, native species can also become invasive.

How might you explain this?

Switch grass is a fast-growing, resistant prairie plant that makes it an ideal candidate for biofuel. But could growing the switch grass extensively also make it the ideal invasive species?

<http://www.kansascity.com/mld/kansascity/news/nation/16166719.htm>

What are the potential pitfalls of switching to biofuels as a primary fuel source?

What challenges do you foresee if farmers choose to replace food crops with biofuel crops?

Would it matter if we used genetically modified organisms (GMOs) for biofuel crops?

#### Role Play

The company your work for is considering a fuel refit for their vehicles. It is your job to make a case for switching to biofuel or to stay with regular diesel. In order to prepare your defence, make a chart comparing diesel fuel and biodiesel. Be sure to include the following factors: how the fuel is made, benefits, harmful effects, costs, etc. (MJS/SS)

<http://www.biofuelcanada.ca/Biodiesel101.wmv>

(Canadian video explaining what makes up biodiesel and the implications for vehicles using biodiesel.)

Imagine you are joining Pete Bethune and his crew of 3 who have set out from New Zealand in a futuristic boat powered by biodiesel on a trip around the globe. They have brought you along to promote and educate others about the merits of renewable fuel sources. Make a video demonstrating the information you would give to people coming to visit the boat. (Watch video and learn more about his trip on the earthrace website.) (All levels)

<http://www.earthrace.net/>

#### Related Links

Welcome to BioFuel Canada Ltd: “It is our goal to offer small scale biodiesel production plants to people who want to be self-sustaining in their energy use, whether it's for their cars, trucks, boats or homes.”

<http://www.biofuelcanada.ca/>

Introduction to biodiesel; suppliers of biodiesel

<http://www.bcbiofleet.ca/introtobiodiesel.htm>

<http://www.bcbiofleet.ca/biodieselsuppliersbc.htm>

American promotional video for the use of biodiesel

[http://www.fieldsoffuel.com/promo/fof\\_promo.html](http://www.fieldsoffuel.com/promo/fof_promo.html)

<http://www.biodiesel.org/multimedia/audiovideo/>

Invasive species and how to deal with them

<http://tncweeds.ucdavis.edu/index.html>

“Revenge of the Killer Knotweed” video spoof

<http://tncweeds.ucdavis.edu/products/outreach/knotweed.mp4>

