

# Jigsaw

Advancing  
Student-Active Learning in  
Ecology Education



ECOLOGICAL SOCIETY OF AMERICA  
**esa**

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**Photo Credit from EcoEdDL:** [The bandcheek wrasse of the Indian and Pacific Oceans](#) by Tim R. McInahan.

## Special Feature: Applied Ecology - Fisheries

### What's new in EcoEdDL

#### A Bird's Eye View of Changing Landscapes: Using Google Earth to Explore Changing Landscapes

By Jim MaKinster, Hobart and William Smith Colleges

In this exercise, students utilize Google Earth and satellite imagery from the United Nations Environmental Programme's Atlas of our Changing Environment to discover ways that landscapes change over time due to human actions and natural forces. By examining patterns in current and historical satellite images from locations around the world, students will be able to predict potential impacts on ecological communities.

#### Using Owl Pellet Analysis to Explore Space Use and Productivity

By Rebecca S. Burton, Alverno College

This exercise provides students an opportunity to explore the idea that territory size is determined by the productivity of an area. By dissecting owl pellets, and through the use of ecological and behavioral concepts, students will be able to estimate the size of an owl's territory. This exercise will also teach students how varied estimations are. Students will develop their abilities in quantitative analysis and problem solving and be introduced to the differences in observations and inferences.

### Announcements

#### Call for Education Share Fair Roundtable Proposals

The 2014 *Life Discovery – Doing Science* Conference will be held in San José, California on October 3-4, 2014. This year's theme is "Realizing Vision and Change, Preparing for Next Generation Biology". Proposals for Hands-on Education Share Fair Roundtable Discussions are currently being accepted through **March 15, 2014**.

### Upcoming Events

#### Webinars by Nature's Notebook

11 am PT / 2 pm ET

**March 4** PopClock: How do I get started? What good are my observations?

**March 11** How a phenology program can help you meet science and outreach objectives (for Local Phenology Leaders)

#### Institute on High-Impact Practices and Student Success

The Association of American Colleges and Universities invites you to apply through March 4, 2014

#### Institute on Integrative Learning and the Departments

The Association of American Colleges and Universities invites you to apply through March 14, 2014

#### American Academy of Microbiology Colloquium Fellowship

Applications will be reviewed on a rolling basis through April 1, 2014

#### 2015 Leopold Leadership Fellowships

Deadline is Monday, April 28, 2014

This format allows you to build or enhance your instructional ideas with a working group of peers.

### Submit your Teaching Resources to EcoEd Digital Library

We invite scientists and science educators to submit teaching resources for use in the classroom, lecture hall, laboratory or informal education experience.

Submissions will become part of a peer-reviewed publication of educational materials.

### Call for Proposals for Resources for Ecology Education Fair and Share (REEFS) Special Session at ESA Annual Meeting, Sacramento, CA

Attending the 2014 ESA Annual Meeting? Whether you have a tried and tested lab, field or classroom activity or a brand new teaching idea, we invite you to present your ideas to engage undergraduate students using student-active methods. We will provide information on digital publishing options during the session. Sign up to share your ecology education resource by **April 30, 2014**. Questions? Contact: Carolyn Thomas, Education Section Chair, [cthomas@ferrum.edu](mailto:cthomas@ferrum.edu)

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## Reports



### U.S. Chamber of Commerce Foundation – A Lesson Plan for Partnerships

Insights From Leading STEM Nonprofits looks to better understand partnerships between corporations and nonprofits. By surveying leading STEM educational programs, the research assessed the relationship between nonprofits and corporate partners and provides a guide for how to build stronger partnerships.

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## Resources



### *Special Feature: Applied Ecology - Fisheries*

#### The Sustainable Use of Fisheries

By Christopher X Jon Jensen, Pratt Institute

This activity is a flash-based game that allows multiple players to simultaneously exploit a model fishery. The game presents a fishery as a metaphor for the tragedy of the commons where 2-8 players actions will impact the sustainability of the system. The game currently runs in two

### Climate Change Demands We Change. Why Aren't We?

The Center for Public Scholarship invites you to register for the April 24 and 25, 2014 conference

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different games modes. The first mode, each year the fish population is replenished to the same level regardless of the level of exploitation the previous year. In the second mode, the growth of the fish population is realistically dynamic.

### Issues in Ecology:

#### Effects of Aquaculture on World Fish Supply

By Rosamond Naylor, et al.



This report discusses the pros and cons of aquaculture as an alternative to harvesting wild stocks of fish. Topics covered in this report include: ecological impacts, changes to the ocean food webs, strategies to improve aquaculture, promoting

sustainability and others.

#### Long Term Changes in Marine Fisheries

By Charlene D'Avanzo, Hampshire College



The Barange (Frontiers, 2003) paper can be used in sections of courses dealing with fisheries, sustainable harvesting, management, biodiversity loss, and human impacts on ecosystems. In ecology texts, species abundance shifts over time are usually discussed in the population ecology chapters. By working with this paper and additional figures, students will be able to appreciate the complexity of large interannual and longer-term changes in species composition and abundance.

**Want to learn more about fisheries education resources? [Click here!](#)**



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