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THE ECOLOGICAL SOCIETY OF AMERICA

# Frontiers in Ecology and the Environment

Issue No 1

Volume 11

February 2013



**How broad are our broader impacts?  
Managing coral reefs for ocean acidification  
Aligning ecology and forest carbon markets**

esa

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Cover picture: Forest carbon projects developed to sequester additional atmospheric carbon dioxide are used to offset greenhouse-gas emissions from other economic sectors. These offsets are traded on the climate exchange market, which works much like the New York Stock Exchange. Forest-based climate-change mitigation is creating demand for market-relevant ecological information.

Central photo: © S Platt/www.iStockphoto.com  
Background photo: © S Alyuk/www.123rf.com

Beyond the Frontier: Listen to Elizabeth Mcleod discussing this research on *Frontiers'* monthly podcast, at [www.frontiersinecology.org](http://www.frontiersinecology.org).

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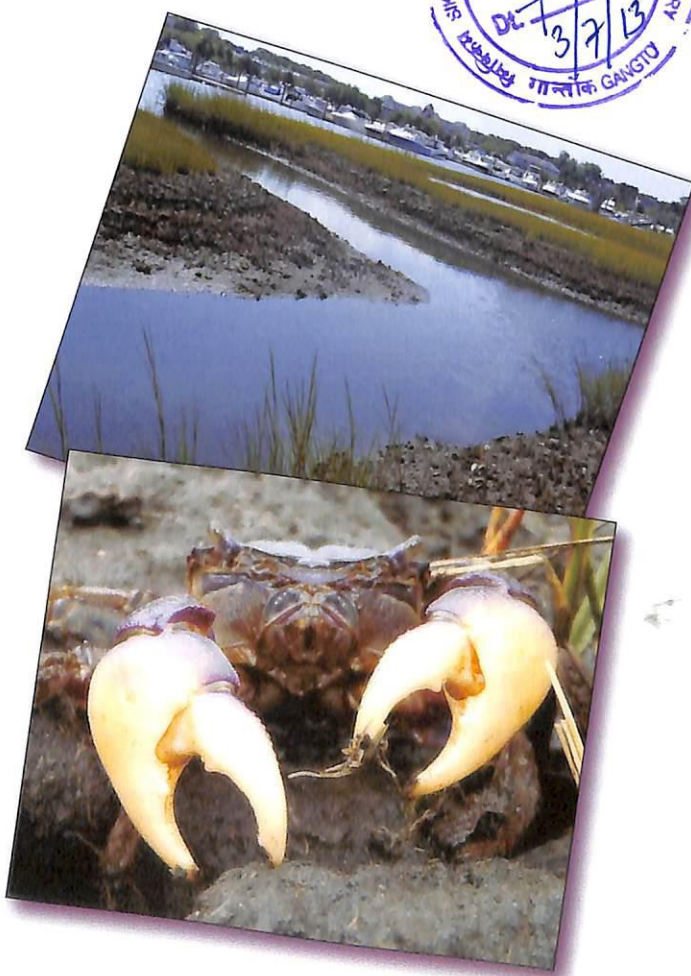
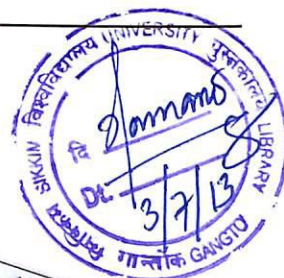
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**Cover picture:** The herbivorous crab, *Sesarma reticulatum*, is causing widespread salt marsh die-off on Cape Cod, Massachusetts, following decades of recreational fishing and predator depletion. The loss of marsh habitat is exacerbated by Depression-era mosquito ditching, an impact that lay dormant for decades but now threatens marshes throughout the region.

**Central and background photos:** C Brisson, A Altieri

 **Beyond the Frontier:** Listen to Rebecca Lloyd discussing this research on *Frontiers'* monthly podcast, at [www.frontiersinecology.org](http://www.frontiersinecology.org).

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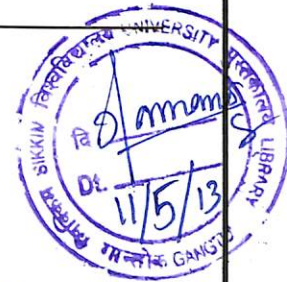
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*A Burton*



**Cover picture:** An unmanned aerial vehicle (UAV) known as an octocopter surveys an agricultural landscape. Recent technological improvements are allowing UAVs equipped with various remote-sensing instruments to collect ecological data at fine spatial and temporal resolutions.

**Central photo:** R Mandel/www.iStockphoto.com

**Background photo:** fotoVoyager/www.iStockphoto.com

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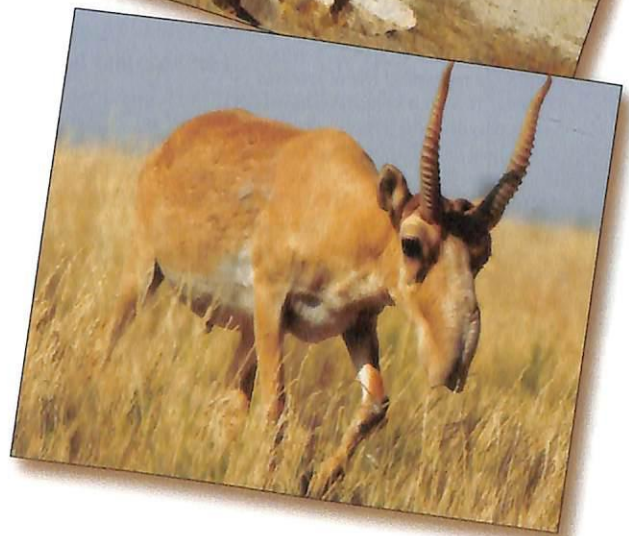
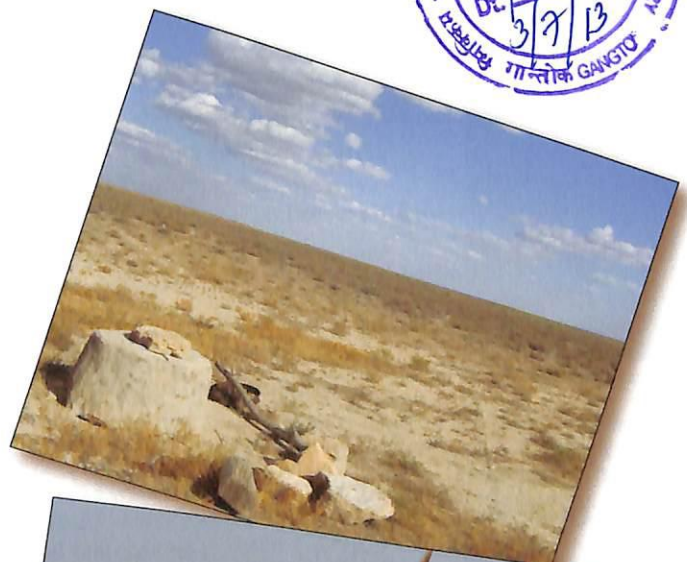
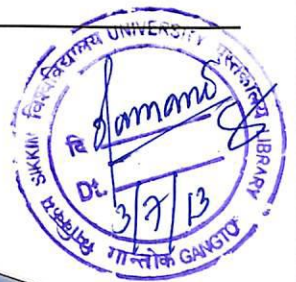
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*A Burton*



**Cover picture:** The static boundaries of protected areas are often ineffective for conserving migratory species such as the saiga antelope (*Saiga tatarica*). Scientists are now exploring new conservation strategies, involving biodiversity offsets, to ensure the survival of such "moving target" species.

**Central photo:** NJ Singh  
**Background photo:** JW Bull

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*A Burton*

31/10/13



Cover picture: Insect pollinators provide vital ecosystem services but are increasingly imperiled by a complex interplay of anthropogenic threats. Nevertheless, certain practical steps are available to mitigate the decline in pollinator populations.

Central photo: M Matacchione/www.bigstock.com  
Background photo: J Wason/www.bigstock.com

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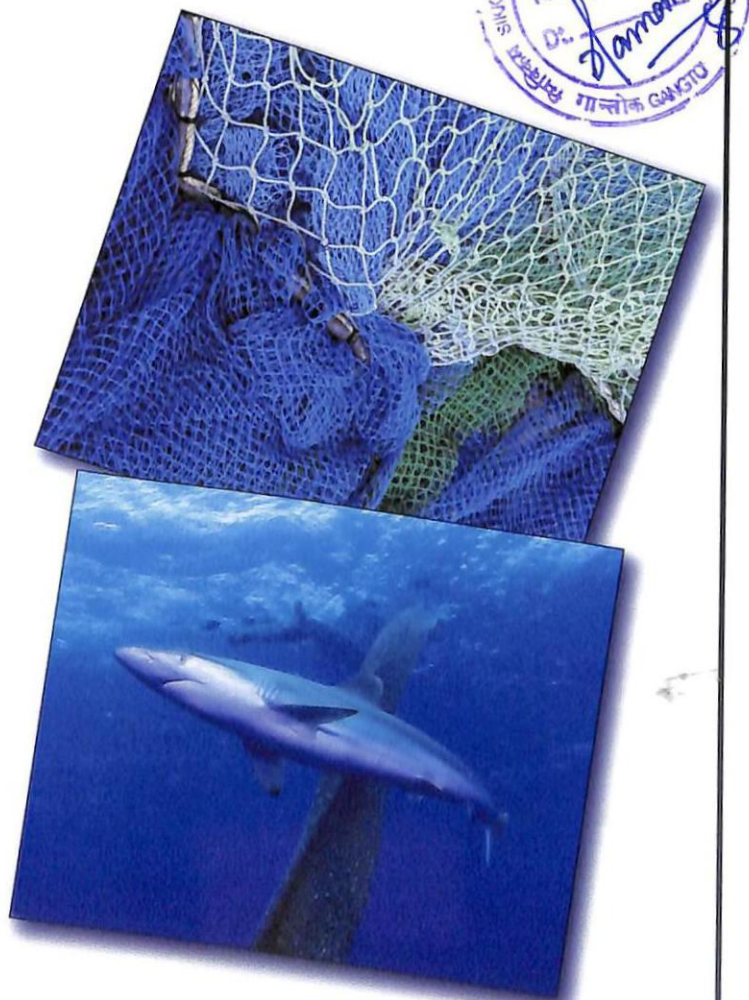
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Tell me, mate, what were emus like?  
A Burton



**Cover picture:** Drifting fish aggregating devices cause high mortality in many marine species, including silky sharks (*Carcharhinus falciformis*). Current estimates suggest that every year hundreds of thousands of these sharks become entangled in aggregating devices in the Indian Ocean alone, making the development of management interventions and monitoring programs an urgent priority.

**Central photo:** F Forget © ISSF  
**Background photo:** Ozturk/www.iStockphoto.com

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Issue 7 Volume 11 September 2013

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This Special Issue and the Workshop on the Ecological Dimensions of Earth Stewardship were generously funded by the National Science Foundation (grant # DEB-1153274).

We thank Guest Editors F Stuart Chapin III and Steward TA Pickett for all their work on this issue.

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*A Burton*



Cover picture: As the ancient Greek goddess of agriculture, the harvest, and the fertility of the earth, Demeter (or Ceres, her ancient Roman counterpart) is often portrayed holding sheaves of grain and a sickle. Her statue at Union Station, in Washington, DC, superimposed on a picture of our planet, represents both Earth and people's responsibility to care for it.

Central photo: CM Highsmith, Library of Congress  
Background photo: NASA





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*A Burton*



**Cover picture:** Studies of the ecological effects of recreational activities in parks and protected areas have traditionally used a curvilinear relationship between use and impact to inform visitor management strategies. However, applying this use-impact relationship generally is an oversimplification – other models may describe responses seen in soils, wildlife, and ecosystems more accurately.

**Central photo:** RhondaSukafiStockphoto.com

**Background photo:** ElenathewiseCanstockphoto.com

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Issue 9 Volume 11 November 2013

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This Special Issue was generously funded by the Gordon and Betty Moore Foundation, the US Geological Survey, and the National Aeronautics and Space Administration.

We thank Guest Editor Nancy B Grimm for all her work on this issue.

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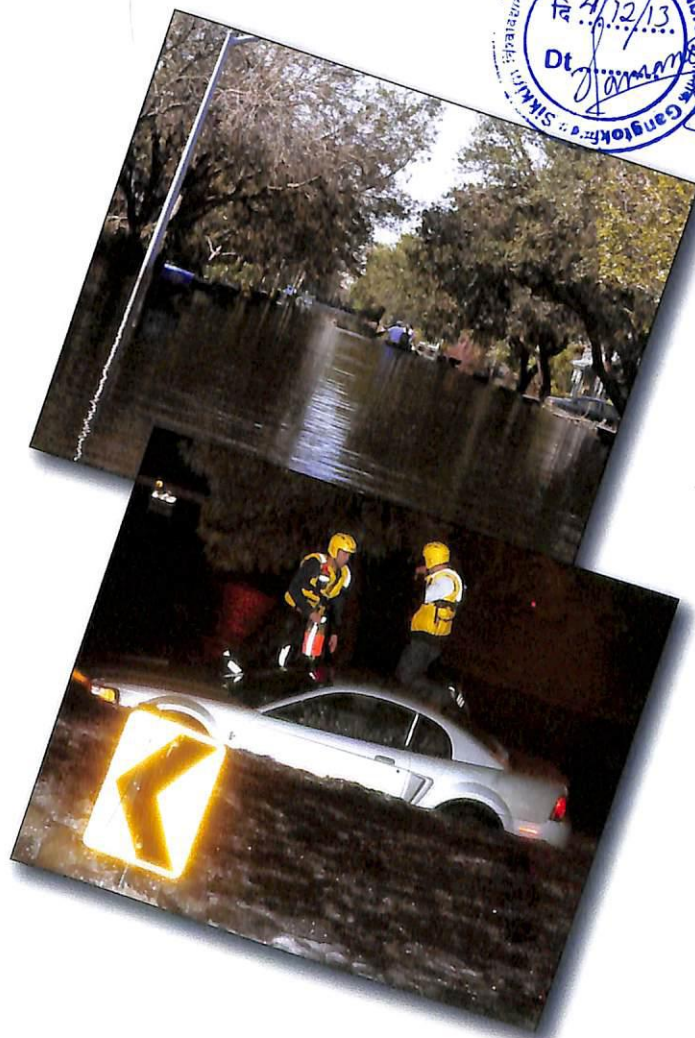
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Gone fishing  
A Burton



Cover picture: Anthropogenic changes to ecosystems reduce their ability to moderate the impacts of extreme weather events, including flash floods. At the same time, such events are projected to increase in both size and frequency because of climate change, putting both people and property at risk.

Central photo: Courtesy of the City of Scottsdale, AZ  
Background photo: jpegisclair/www.bigstockphoto.com

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## e1 Index 2013 (online only)



**Cover picture:** Relatively pristine reef ecosystems – dominated by live coral and charismatic fish such as *Amphiprion ocellaris* – can become degraded and shift to alternate states, like those characterized by macroalgae. Integrated management efforts, however, may facilitate partial recovery to more coral-dominated states.

**Central photo:** J Tan CH  
**Background photo:** J Rizzari