



The Biodiversity Indicators Dashboard

--Monitoring Biodiversity Trend and Conservation Performance



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NatureServe

Partnership and Collaborators



Partnership and Collaborators include:

- NatureServe
- IUCN
- Biodiversity Indicators Partnership (bip)
- Species Survival Commission (SSC)
- BirdLife International
- UNEP WCMC
- University of Maryland
- Conservation International
- Centre d'Ecologie Fonctionnelle & Evolutive
- MacArthur Foundation

Outline

- Background & conceptual approach
 - Dashboard development timeline
 - Pressure-state-response-benefit indicator framework
- Intended audiences and goals for Dashboard
- Demonstration of initial Dashboard prototype
- Indicator recruiting strategies
- Challenges and capacity needs: Lessons learned from regional stakeholders
- Dashboard ongoing efforts and next steps

Life on Earth needs monitoring...



The screenshot shows the website for the Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets. The page features a navigation menu with 'The Convention', 'Cartagena Protocol', 'Nagoya Protocol', 'Programmes', 'Information', and 'Secretariat'. The main content area highlights the 'Strategic Plan for Biodiversity 2011-2020' and lists 'Aichi Biodiversity Targets - Plans' with links for 'English', 'French', and 'Spanish'. A sidebar on the right lists 'Related Targets developed in the framework of the Aichi Biodiversity Targets' and 'Strategic Plan Indicators'.

...and conservation needs monitoring...

Money for Nothing? A Call for Empirical Evaluation of Biodiversity Conservation Investments

ENVIRONMENT

"True" Conservation Progress

The article discusses the need for empirical evaluation of conservation investments and includes a section on 'True' Conservation Progress.

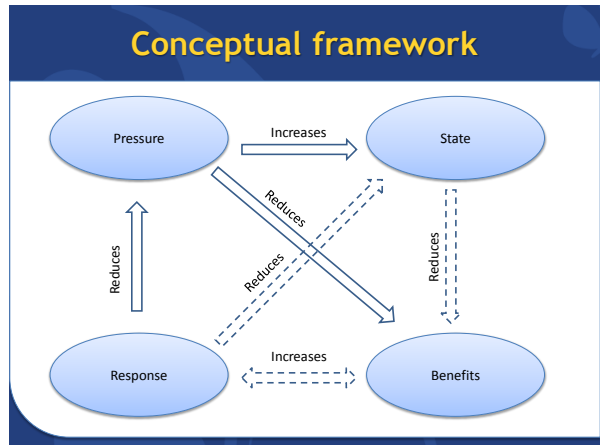
...but monitoring is difficult!

- Barriers to data access and sharing
- Lack of access to remotely sensed data
- Dispersed, inadequate, non-standard data
- Limited data reporting and visualization tools
- Insufficient resources: human, funding, IT
- Inadequate coordination among institutions
- Ineffectual national regulatory requirements

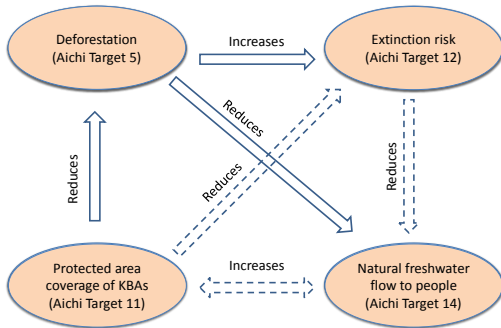
...Comprehensive and easily understood information on biodiversity trends is often not available at regional and national scales

Dashboard development timeline

- Phase I: Proof of Concept, 2011 – 2012
 - Establish four baseline indicators in three regions
 - Access local data capacity through regional consultation workshops
- Phase II: Dynamic Prototype, 2013 – 2015
 - Develop the dashboard platform
 - Continue building local capacity
 - Analyze dashboard data to assess conservation actions



Global indicator examples



Dashboard program goals

A clear, user-friendly visualization of biodiversity indicators that tracks biodiversity and conservation performance and facilitates iterative adaptive management

- Establish regional dashboard assessments for reporting on trends in biodiversity using a “pressure–state–response–benefits” indicator framework
- Develop infrastructure to allow data upload, maintenance, analysis, and reporting
- Catalyze sustainable national investment in the data flow needed to sustain assessments
- Inform adaptive management and investment by better placement of responses within the regional context of status, threats, and benefits to humanity

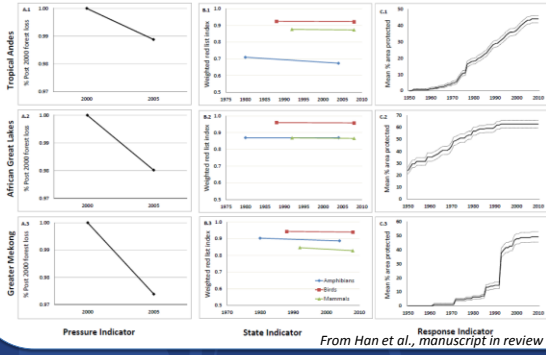
Audiences: policy and practice

- Regional and global:
 - Support reporting to global conventions, e.g., the Convention on Biological Diversity
 - Inform regional- and global-scale investment by agencies and donors
- National:
 - Strengthen coordination and investment among national government agencies and civil society
- Local:
 - Provide counterfactuals for appropriate reporting of conservation results
 - Support adaptive management of conservation action and investment

Geographic regions



Sample indicator trend graphs



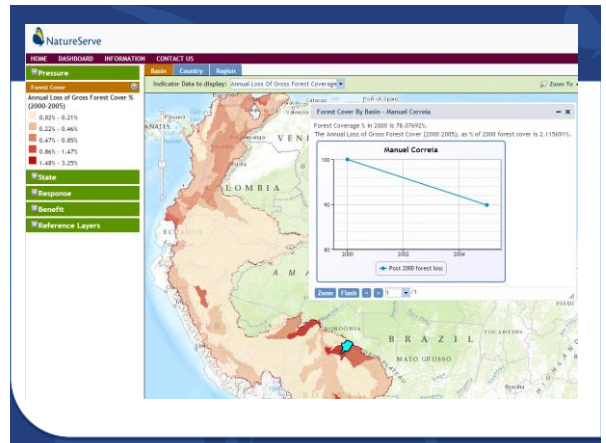
Outline

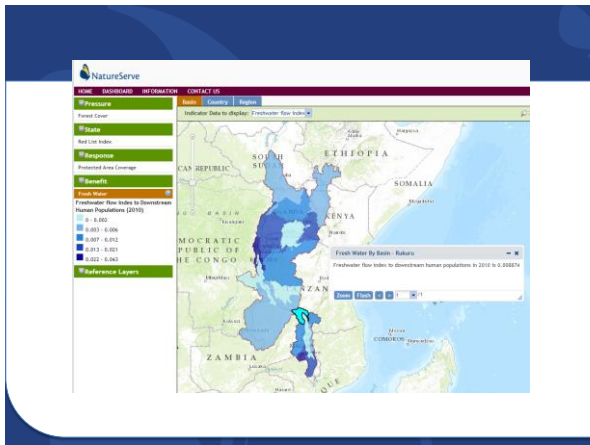
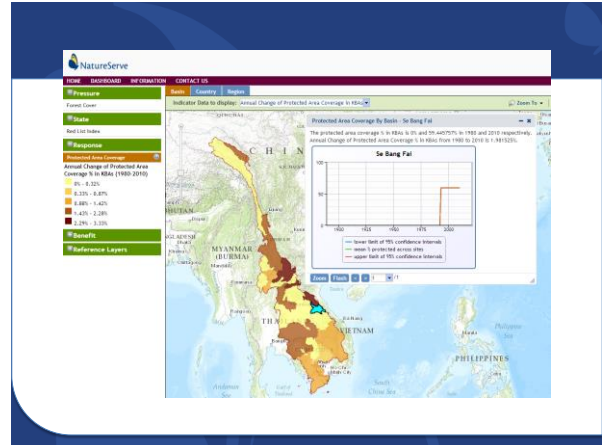
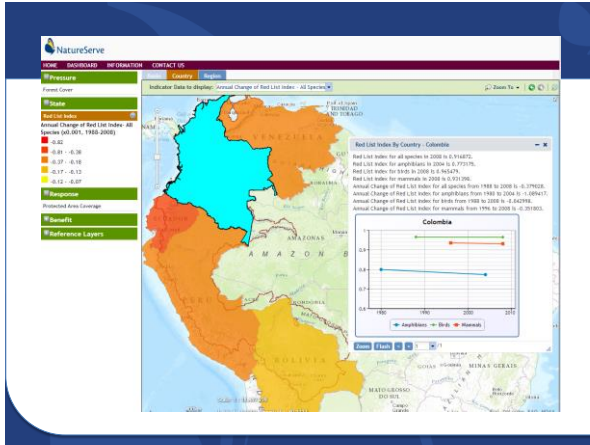
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Prototype Demonstration

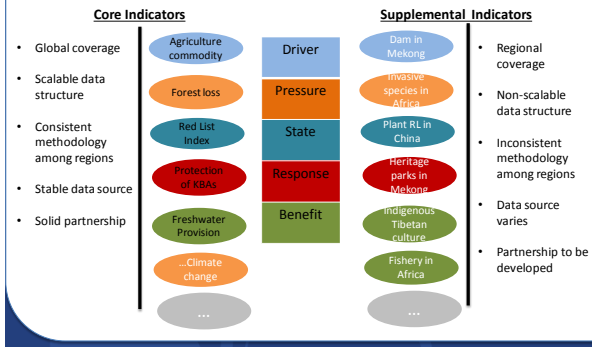
<http://dashboarddev.natureserve.org>





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Biodiversity Dashboard Indicators



Core Indicators

- Closely work with partners to update and calibrate the existing indicators



- Watch out for promising existing and emerging indicators and develop new partnerships, possibly through the networks of:
 - BIP
 - GEO BON
 - GBIF
 - IPBES

Supplemental indicators

- Data mining of National Reports and NBSAP reports
- Partner with existing intergovernmental data hosts to harvest ready country indicators & national reporting agencies
 - ASEAN Centre for Biodiversity
 - World Bank Open Data
 - China CBD /Nanjing Institute of Environmental Science
 - Vietnam National Biodiversity Database System
 - Uganda Data Bank
 - Peru National Environmental Information System
- Acquire indicators generated by foundation grantees
- Partner with existing local-scale monitoring initiatives , regional data centers, and NatureServe network



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Consultation workshops

- Entebbe, Uganda (Sep 2011)
 - 20 participants from 6 countries
- Phnom Penh, Cambodia (Oct 2011)
 - 70 participants from 5 countries
- Entebbe, Uganda (Nov 2011)
 - 39 participants from 10 countries
- Nairobi, Kenya (Jan 2012)
 - 27 participants from 3 countries
- Hanoi, Vietnam (Mar 2012)
 - 47 participants from 9 countries
- Lima, Peru (May 2012)
 - 27 participants from 4 countries
- Lima, Peru (August 2012)
 - 30 participants from 10 countries

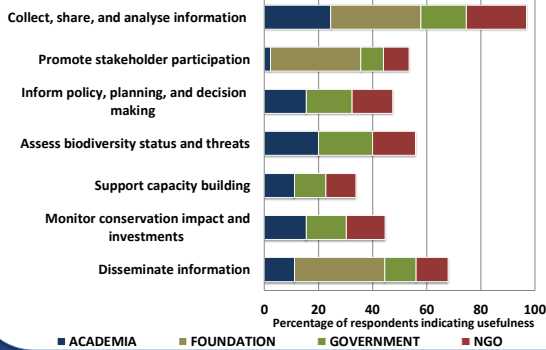


Dashboard questionnaire

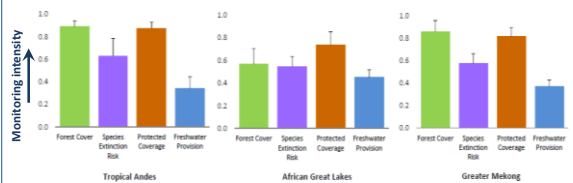
1. How might the dashboard program be useful in your country?
2. Are the four example indicators being monitored in your country? What other indicators are monitored?
3. Which of the spatial scales would be most useful in your country?
4. Do you have any other questions/comments about the dashboard program?



How might the dashboard program be useful in your country?



Monitoring of dashboard indicators



From Han et al., manuscript in review

What other indicators are being monitored?

Indicator	Drivers	Pressure	State	Response	Benefit
			Mekong	Great Lakes Region	Tropical Andes
"Social indicators"			✓		✓
"Economic indicators" (agriculture, livelihoods) / Land use and agricultural yield			✓	✓	✓
Wildlife trade / poaching			✓		
Hydro power dams			✓		
Hydrological data				✓	✓
Illegal cultivation				✓	✓
Alien invasive species				✓	✓
Climatic data				✓	✓
Livestock censuses				✓	✓
Change of habitat other than forest				✓	✓
Fuel wood / charcoal use				✓	✓
Plant biodiversity			✓		
IBAs status and trends				✓	✓
Wildlife census: birds and large mammals			✓	✓	✓
Wetland coverage				✓	✓
Wildlife: herpetology and entomology				✓	✓
Community based conservation actions (forestry)			✓		
Conservation investments					✓
Protected Area Management Plans			✓		
Proportion Natural Areas Protected			✓		
Water quality			✓	✓	✓
Fisheries / Fish stock assessment			✓	✓	✓
Living conditions of people around protected areas				✓	✓
Carbon				✓	✓
Bio-culture diversity				✓	✓
Traditional ecological knowledge				✓	✓

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Work plans for Phase II, 2013-15

Develop digital information architecture:

- Migrate dashboards from static proof of concept to dynamic digital environment
- Support a minimum of 4 datasets for data upload, periodic archiving, analysis, download, reporting, and accuracy assessment

Analyze data to assess conservation actions:

- Extend Phase I results to **watershed scale**
- Incorporate a **driver** indicator
- **Calibrate** pressure and benefits indicators against high resolution data
- Advance scientific research on **benefits and impact** of conservation investments and actions

Continue building monitoring capacity

Communicate with audiences

Story map

- [Dashboard Map Journal for Mekong region](#)

Thank you!

<http://dashboarddev.natureserve.org>

Establishing Dashboard Assessments

Assess the current status of the system, identify the key drivers of change, develop a strategy to address the key drivers of change, and monitor and evaluate the system.

Assess the current status of the system

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Develop a strategy to address the key drivers of change

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Monitor and evaluate the system

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Global Partners

- U.S. Fish and Wildlife Service
- World Bank
- World Wildlife Fund
- U.S. Environmental Protection Agency
- U.S. Department of the Interior
- U.S. Department of Agriculture
- U.S. Department of Health and Human Services
- U.S. Department of Education
- U.S. Department of Justice
- U.S. Department of State
- U.S. Department of Energy
- U.S. Department of Transportation
- U.S. Department of Commerce
- U.S. Department of Labor
- U.S. Department of Housing and Urban Development
- U.S. Department of Veterans Affairs
- U.S. Department of the Treasury
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