Big Data and The Future for Ecology

Challenges at scales individuals can’t address


http://www.nceas.ucsb.edu/globalmarine
Science project & data size

$2,865,388,605

2% receive ~ 20% of funding

“Dark data”

Number of awards sorted by size

Heidorn 2008 Library Trends 57(2)
How dark is Ecology’s “dark data”? 

Random selection 100 DEB awards 
1 paper from each award 
“Reasonable efforts” to locate data online 

8% make any non-genetic data public 

Hampton et al in review
Observatories

NEON Inc. – Image: Nicolle Rager-Fuller, National Science Foundation
Citizen Science

Remote sensing
Collectively Ecology may have “big data” – we just aren’t using it

How do ecologists move into the information age?

Institutional incentives
Cyberinfrastructure
Cultural change
Training

Johann Friedrich Greuter: Socrates and His Students
How do ecologists move into the information age?

Organize & archive data for posterity
Collaborate with heterogeneous data
Share data

Shift your local culture

Johann Friedrich Greuter: Socrates and His Students
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