### InVEST: A New Tool for Mainstreaming Conservation

### The Natural Capital Project is a new collaboration among 3 partners







WOODS INSTITUTE FOR THE ENVIRONMENT STANFORD UNIVERSITY



# Working together to make conservation *mainstream...*

a part of everyday life and everyday decisions

Our first product is a new tool called *InVEST*:

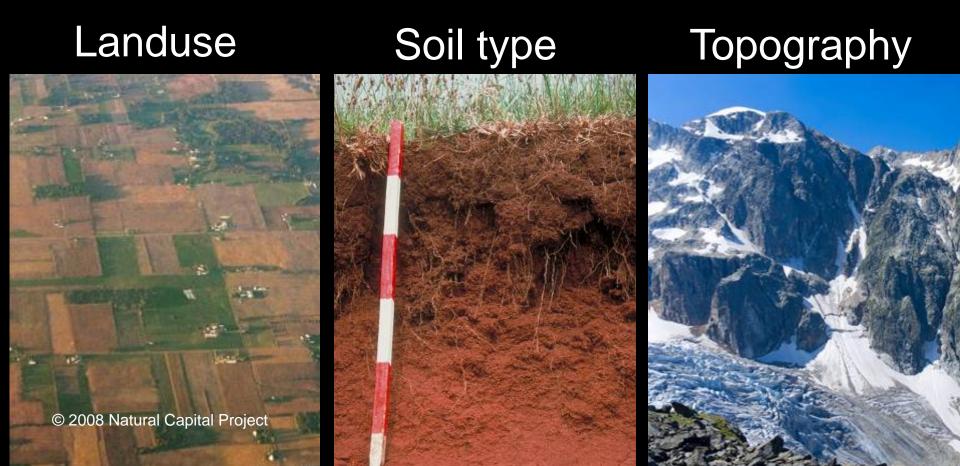
> Integrated Valuation of Ecosystem Services and Tradeoffs

### InVEST is a *free* software package that brings together

#### nature and economics



### InVEST puts together data on the **biophysical** landscape, such as....



### With data on the *human* landscape, such as....



### To predict *how much* ecosystem service will be



#### InVEST 1.0 Beta can map

**Biodiversity** 

Water pollution regulation

Carbon sequestration

Managed timber production

Crop pollination

Avoided reservoir sedimentation



#### The next version of InVEST will add

- **Tourism and recreation**
- Agricultural production
- Flood mitigation
- Hydropower production
- Irrigation





### You can download InVEST 1.0 Beta today

at

#### http://invest.ecoinformatics.org

### You will get a set of ArcGIS 9.2 toolboxes to install on your computer.



#### The program comes with...



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#### A detailed user's guide

#### A sample data set and

#### **Online technical support**

2008 Natural Capital Project

### Once installed, InVEST will appear as an ArcToolbox

ArcToolbox 3D Analyst Tools Analysis Tools +Cartography Tools +Conversion Tools +Coverage Tools +Data Interoperability Tools Ŧ Data Management Tools Ŧ Geocoding Tools ÷ Geostatistical Analyst Tools InVEST Linear Referencing Tools Multidimension Tools +Samples + Server Tools  $\left| + \right|$ Spatial Analyst Tools + Spatial Statistics Tools +

## Each ecosystem service has its own script



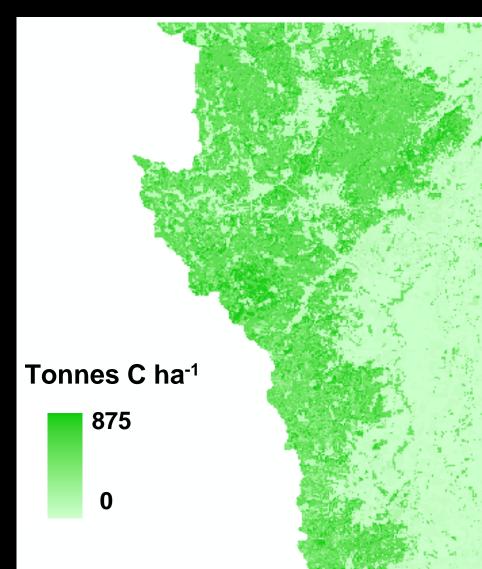
### Each script opens an interface where you can easily enter your data

\$ Timber	
<u> </u>	🕐 Help 🔺
Workspace	
C:\InVEST\Timber	Timber
Managed area map C:\InVEST\Timber\Input\plantation.shp Plantation Production Table C:\InVEST\Timber\Input\plant_table.dbf	This model estimates the per ha net present value of areas designated for the harvest of trees. It is a simplified valuation model
Market Discount Rate	designed for cases where little data on tree stand management exists. The model can handle cases
Results suffix (optional)	where an entity (e.g., a government, tribe, or private timber company) has a formally recognized right to harvest roundwood or pulp from a forest. Another management regime the model can analyze includes tree stands used exclusively by a social group or community, either through official designation or because of social norms (sources) for timber
OK Cancel Environments << Hide Help	(sources), for timber

© 200

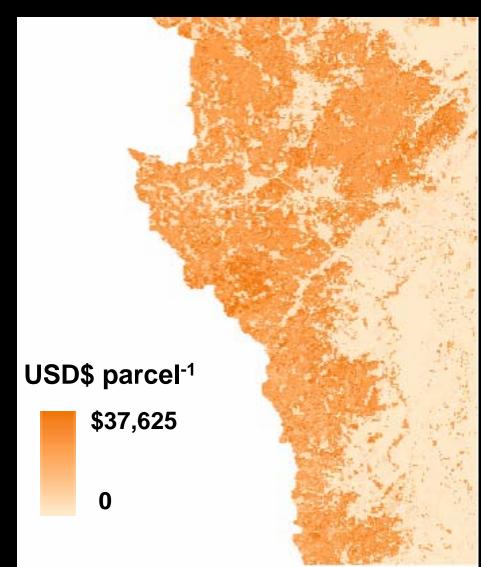
## Run a script and you will get a map of your ecosystem service of interest

In *biophysical* terms, such as this map of carbon storage in tonnes per hectare



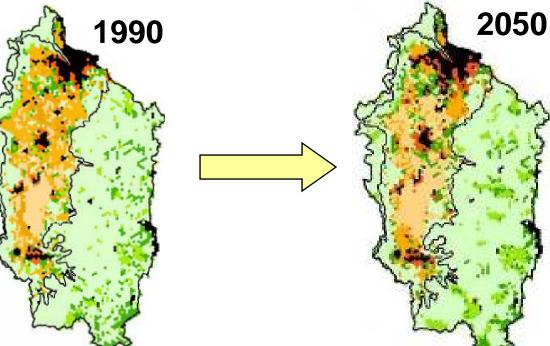
## Run a script and you will get a map of your ecosystem service of interest

Or in *economic* terms, such as this map of the Net Present Value of carbon in US Dollars

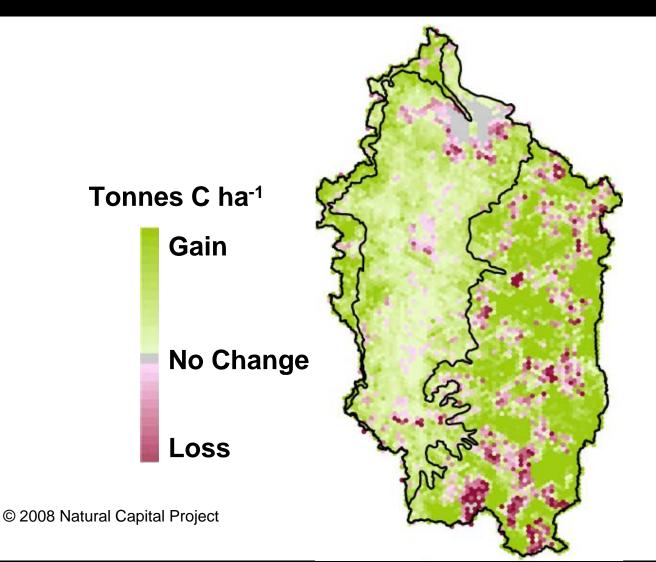


# You can run the models again with a possible future landscape to see how services will change

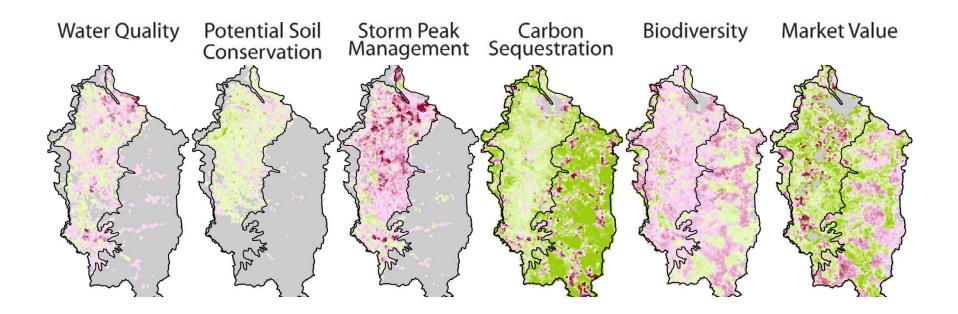
Here's an example from Oregon Showing development over the next 50 years.



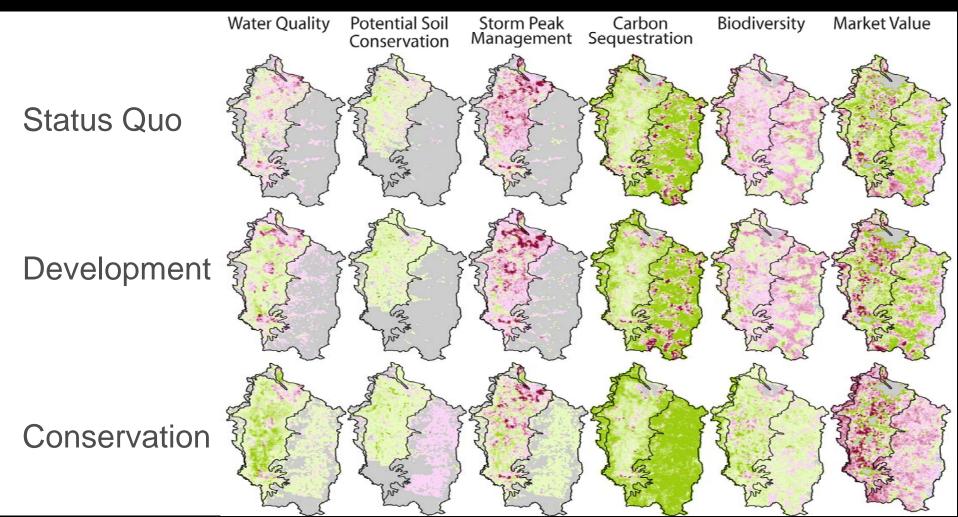
### This map shows how carbon storage will change across the landscape



### Maps of changes in multiple services can be viewed to reveal tradeoffs



#### And multiple scenarios can be lined up to find the best options for the future



### InVEST is being applied around the globe to answer diverse questions



See our other demo for one example of how InVEST is helping mainstream conservation

### **InVEST**ing in Hawai`i's Natural Capital