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# The EcoTrends Web Portal: An Opportunity for Data Discovery and Exploration by Teachers and Students

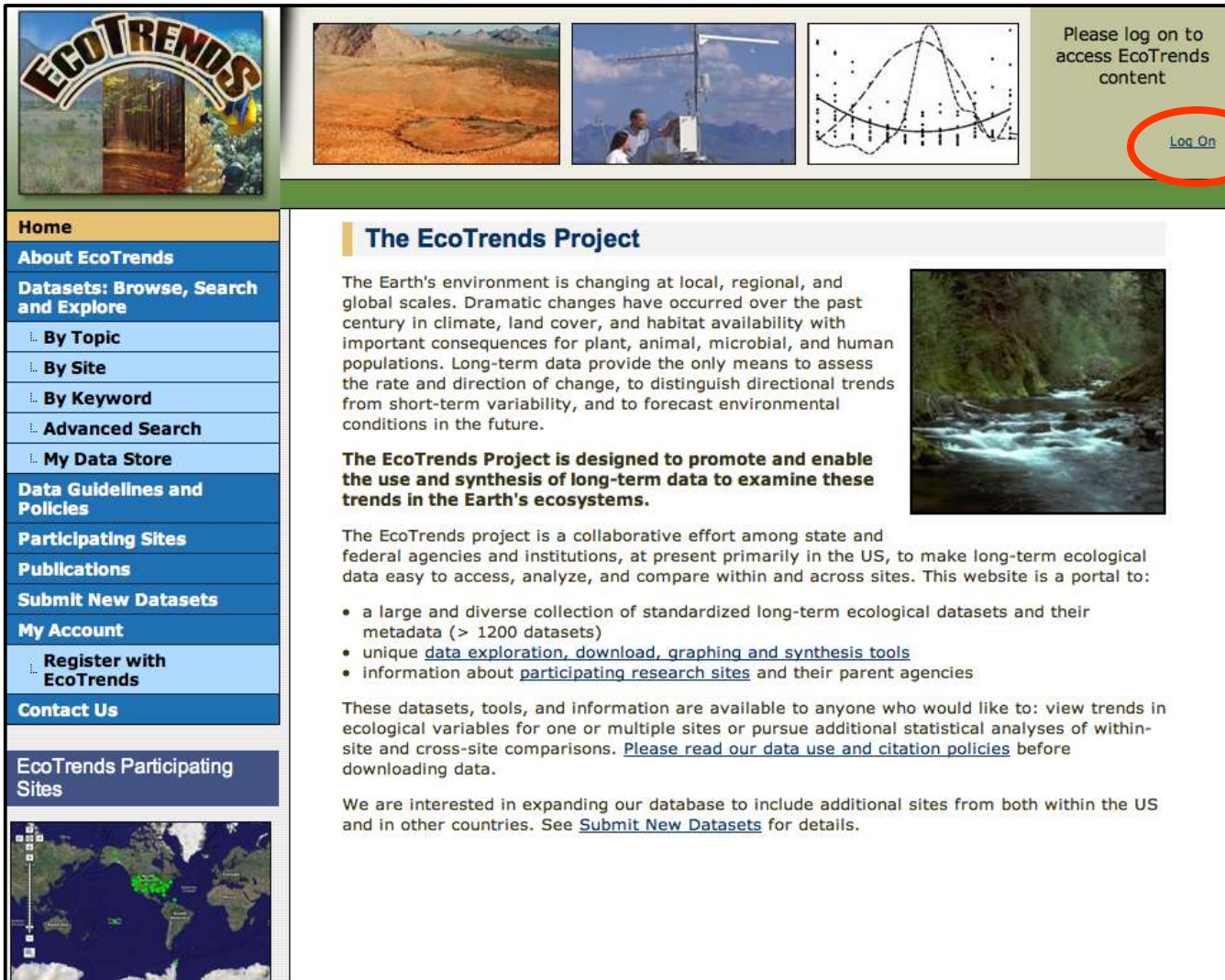
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Jornada Basin LTER, New Mexico State University  
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# EcoTrends Project Overview

- Goals
  - Promote and enable “long-term” ecological time-series data for use in synthesis projects (book and website)
    - Use raw data from the sites to create derived datasets that are in the same format, on the same time scales
  - Simplify Discovery, Exploration, and Access to “derived” data products (website)
- Timeline
  - Project conception – 2004
  - Book/web portal release – Fall 2008 [Note that datasets currently on the website are in the reviewing process]
- Data Partners: U.S. LTER, USDA (ARS/FS), USGS, DOE, and Univ. Arizona (50 sites total, 23,817 unique data sets)


# http://www.ecotrends.info/



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**EcoTrends Participating Sites**



**The EcoTrends Project**

The Earth's environment is changing at local, regional, and global scales. Dramatic changes have occurred over the past century in climate, land cover, and habitat availability with important consequences for plant, animal, microbial, and human populations. Long-term data provide the only means to assess the rate and direction of change, to distinguish directional trends from short-term variability, and to forecast environmental conditions in the future.

**The EcoTrends Project is designed to promote and enable the use and synthesis of long-term data to examine these trends in the Earth's ecosystems.**

The EcoTrends project is a collaborative effort among state and federal agencies and institutions, at present primarily in the US, to make long-term ecological data easy to access, analyze, and compare within and across sites. This website is a portal to:

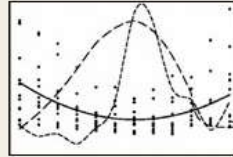
- a large and diverse collection of standardized long-term ecological datasets and their metadata (> 1200 datasets)
- unique [data exploration, download, graphing and synthesis tools](#)
- information about [participating research sites](#) and their parent agencies

These datasets, tools, and information are available to anyone who would like to: view trends in ecological variables for one or multiple sites or pursue additional statistical analyses of within-site and cross-site comparisons. [Please read our data use and citation policies](#) before downloading data.

We are interested in expanding our database to include additional sites from both within the US and in other countries. See [Submit New Datasets](#) for details.

Learning about ecosystems is a process that requires data to be collected across space and over time

# http://www.ecotrends.info/



Please log on to access EcoTrends content

[Log On](#)

To login, use your EcoTrends Network Affiliate Login, or register a new account.

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## The EcoTrends Project

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### The EcoTrends Project is designed for the use and synthesis of long-term trends in the Earth's ecosystems

The EcoTrends project is a collaboration of federal agencies and institutions, at data easy to access, analyze, and

- a large and diverse collection of metadata (> 1200 datasets)
- unique [data exploration, download](#)
- information about [participating re](#)

These datasets, tools, and information ecological variables for one or multiple site and cross-site comparisons. [Please](#) downloading data.

We are interested in expanding our and in other countries. See [Submit](#)

## EcoTrends Log On

If you have registered with EcoTrends, you may log on here:

Username:

Password:

Network Affiliation:   
  
KU  
LTER  
NCEAS  
OBFS  
PISCO  
SDSC  
UCNRS

[Not a registered user?](#)

[Forgot your password?](#)

[Create an EcoTrends account](#) now.

[Reset your password](#) now.

## EcoTrends Participating Sites



# Use Case Scenario

- Global Climate Change – Global Warming
- Hypotheses
  - Sea level rise due to melting ice caps
  - Melting ice caps due to increasing air temperature
- Find relevant data
  - Search for sea level data on US East and West coasts
  - Search for temperature data at Arctic and Antarctic
  - Verify data is of interest (“exploratory”)
- Compare data in single plot
- Download data

# Where are data available?

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EcoTrends Participating Sites

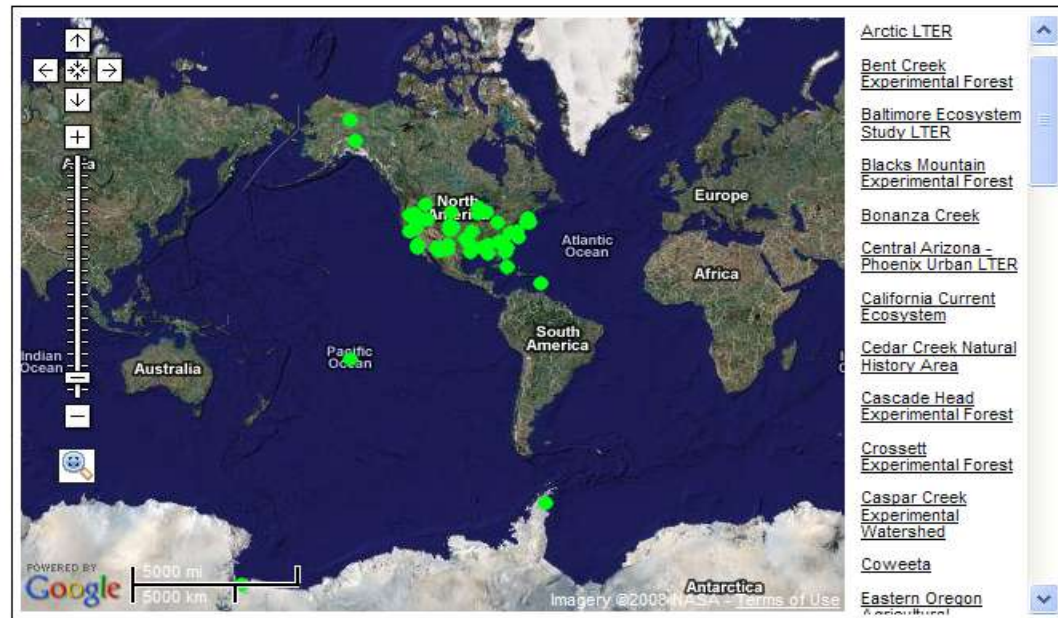


EcoTrends Book (Coming)

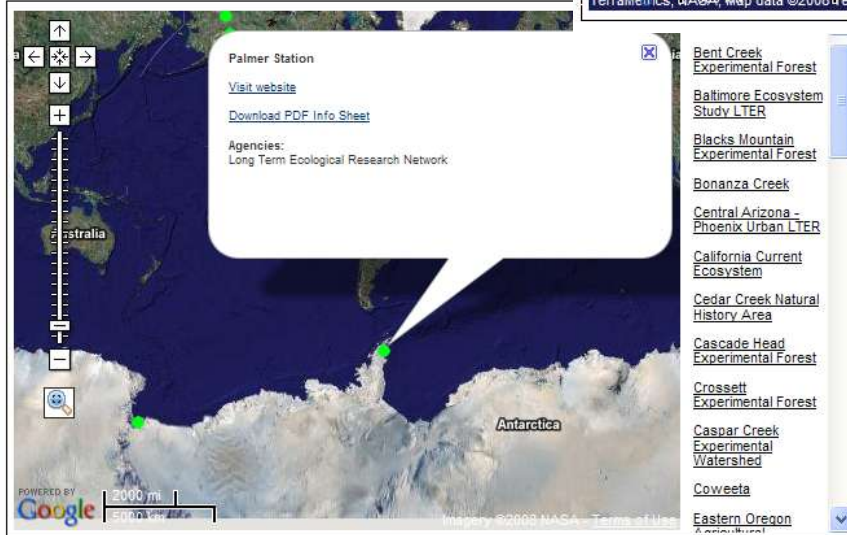
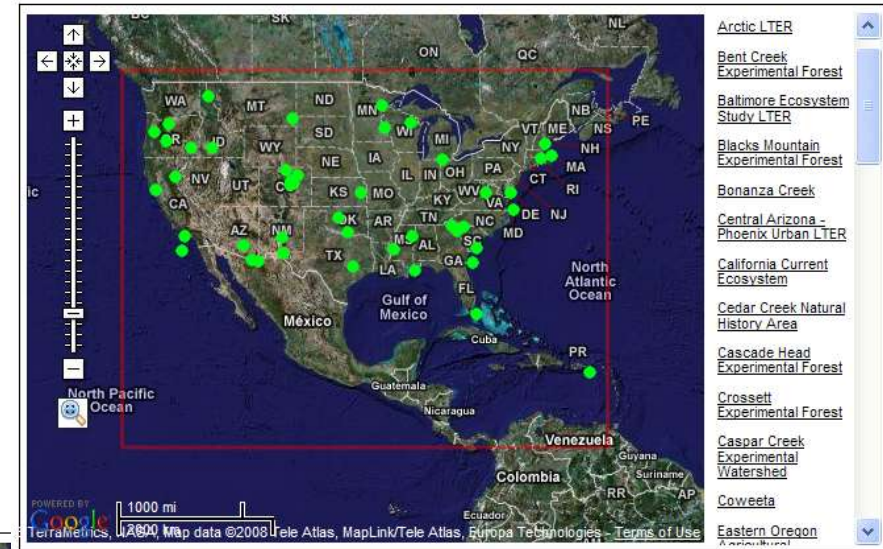
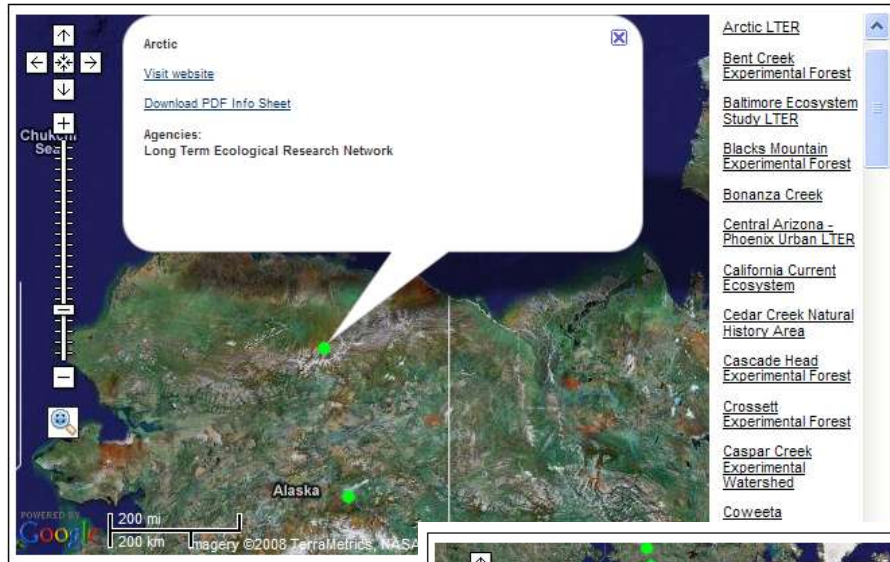
## Participating Sites

EcoTrends is a collaborative effort between many sites affiliated with several agencies. Below is information about our participating sites. Click a point on the map or on a site name for more information or to visit the site's website.

Additional sites can be found at the Pole to Pole Ecological Research Lattice of Sites (P2ERLS; pronounced "pearls") web site (<http://www.p2erls.net>).



# What is the context of the data that were collected at the sites?



Let's look at Palmer Station and Arctic LTER for temperature data; Baltimore Ecosystem Study LTER and California Current Ecosystem LTER for sea level data.

# Data Discovery



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### Browse by Topic

**Biogeochemistry** [about](#)

- Atmospheric chemistry
- Dry deposition chemistry
- Litter and decomposition
- Metals
- [Precipitation chemistry \(636\)](#)
- Soil chemistry
- [Surface water chemistry \(136\)](#)
- Vegetation chemistry
- [Water quality \(3\)](#)

**Biotic structure** [about](#)

- Biomass
- Cover and density of organisms
- Land cover
- Phenology
- Production
- Species richness and species diversity

**Climate and physical variability** [about](#)

- [Air temperature \(412\)](#)
- [Drought \(92\)](#)
- Evapotranspiration
- Groundwater level
- Hydrology
- [Ice, snow and frost \(9\)](#)
- Oscillation Indices (ENSO, SOI, PDOI, etc)
- [Precipitation \(145\)](#)
- [Sea level \(16\)](#)
- [Secchi disk depth \(3\)](#)
- Sedimentation
- Soil moisture
- [Soil temperature \(23\)](#)
- [Solar radiation \(13\)](#)
- [Streamflow \(46\)](#)
- Water depth
- Water heat content
- [Water temperature \(19\)](#)
- [Wind \(13\)](#)

### Browse by Site

**EcoTrends Site**

- [Arctic LTER \(55\)](#)
- [Baltimore Ecosystem Study LTER \(227\)](#)
- [Bent Creek Experimental Forest \(29\)](#)
- [Blacks Mountain Experimental Forest \(29\)](#)
- [Bonanza Creek \(60\)](#)
- [California Current Ecosystem \(57\)](#)
- [Cascade Head Experimental Forest \(10\)](#)
- [Caspar Creek Experimental Watershed \(44\)](#)
- [Cedar Creek Natural History Area \(127\)](#)
- [Central Arizona - Phoenix Urban LTER \(979\)](#)
- [Coweeta \(2242\)](#)
- [Crossett Experimental Forest \(29\)](#)
- [Eastern Oregon Agricultural Research Center \(10\)](#)
- [Fernow Experimental Forest \(45\)](#)
- [Florida Coastal Everglades \(178\)](#)
- [Fort Keogh \(10\)](#)
- [Fraser Experimental Forest \(39\)](#)
- [Georgia Coastal Ecosystems \(196\)](#)

### Search by Keyword

Please enter one or more keywords, separated by spaces (for example: **nitrogen climate**), in the **Keywords** box below. Then click the **Search** button.

Please note:

- When multiple keywords are entered, only datasets with metadata fields matching all keywords will be returned.
- Keyword phrases composed of two or more words separated by spaces should be surrounded by double-quotes, for example, **"Puerto Rico"** or **"air temperature"**.

**Keywords:**  [Advanced Search](#)

*Will be able to start looking at biotic responses to abiotic drivers!*



# Data Discovery



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### Advanced Search

#### EcoTrends Sites +/-

Limit search to these sites:

(If no sites are selected, all are included in the search.)

- Baltimore Ecosystem Study LTER
- Bent Creek Experimental Forest
- Blacks Mountain Experimental Forest
- Bonanza Creek
- California Current Ecosystem

#### Variable +/-

Limit search to datasets containing these variables:

(If no variables are selected, all are included in the search.)

- manufacturing wages
- manufacturing workers
- mean sea level
- merchantable volume
- microbial biomass

#### Timestep +/-

Limit search to datasets matching these timesteps:

(If no timesteps are selected, all are included in the search.)

- monthly
- yearly

(page truncated)





























# Search Results

7 Datasets Matched (Displaying 1-7 of 7)

<< Previous 1000 Datasets    Next 1000 Datasets >>

Any use of data or figures from the EcoTrends project must include the following statement (replace [Original Data Source] and [EcoTrends Dataset Identifier] with values from the website as appropriate): "Data and figures were obtained from the EcoTrends Project (<http://www.ecotrends.info>) funded by the National Science Foundation and USDA Agricultural Research Service. These data are from [Original Data Source]; [EcoTrends Dataset Identifier]."

Plot Options:  Data Points  Data Lines  Moving Average

Site	Stations	Topic	Variable (Unit)	Timestep	
<input type="checkbox"/> Arctic LTER	Toolik Lake Field Station	Climate and physical variability	air temperature (mean) (celsius)	monthly	<input type="checkbox"/>    
<input type="checkbox"/> Baltimore Ecosystem Study LTER	NWS COOP #180465, Baltimore Washington International Airport, MD	Climate and physical variability	air temperature (mean) (celsius)	monthly	<input type="checkbox"/>    
<input type="checkbox"/> California Current Ecosystem	Lindbergh CDO	Climate and physical variability	air temperature (mean) (celsius)	monthly	<input type="checkbox"/>    
<input type="checkbox"/> California Current Ecosystem	NWS COOP #047740, San Diego Lindbergh Field, CA	Climate and physical variability	air temperature (mean) (celsius)	monthly	<input type="checkbox"/>    
<input type="checkbox"/> Palmer Station	Palmer Observatory	Climate and physical variability	air temperature (mean) (celsius)	monthly	<input type="checkbox"/>    
<input type="checkbox"/> Baltimore Ecosystem Study LTER	NOAA Station 8574680, Baltimore, MD	Climate and physical variability	mean sea level (meter)	monthly	<input type="checkbox"/>    
<input type="checkbox"/> California Current Ecosystem	NOAA Station 9410170, San Diego, CA	Climate and physical variability	mean sea level (meter)	monthly	<input type="checkbox"/>    



Add to data store



Get more information (metadata)



Download data (save to disk)



Plot (use above settings)

# BES LTER Sea-level Metadata

**EcoTrends Dataset Identifier: ecotrends.17703.1**

**Original Data Source:** [National Oceanic and Atmospheric Administration](#)

**Site:** Baltimore Ecosystem Study LTER

**Stations:** NOAA Station 8574680, Baltimore, MD

**Revision:** 1 of 1

**Date Range:** 1902-07-01 to 2007-09-30

**Other Revisions:**

**Timescale:** monthly

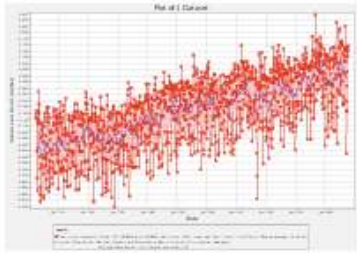
**View:** [Data \(as HTML\)](#)  
[Metadata-EML \(as HTML\)](#)

**Variable:** mean sea level

**Download:** [Data \(as CSV\)](#)  
[Metadata-EML \(as XML\)](#)

**Unit:** meter

**Plot:**



Plot Options:  
 Data Points  
 Data Lines  
 Moving Average

(Click to view plot)

[Add to My Data Store](#) [help](#) [Back to Datasets Matched](#)