Environmental Service Learning
Why We Do These Projects:
Citizen Science

Center for Earth and Environmental Science
IUPUI School of Science
Why be involved in Citizen Science Projects?
By recruiting citizen scientists to assist with data collection, researchers are able to gather data over vastly larger areas and for longer periods of time.

More eyes on the ground.

More eyes in more places.

Reduces the cost of conducting large scale studies.

Citizen volunteers rather than paid researchers.

Fosters better relationships between scientists and the public.

Involvement in science projects increases public support of research/science.

Increases public understanding of science and the scientific process.

Avenue for developing relationships within communities.

People come together to participate in the activity.

The lack of scientific literacy is a problem in the United States.

Non-scientists generally do not understand the scientific method (i.e. how the process of science works and how scientists add to our knowledge base).

what types of questions science can address.

there are even issues with how the language of science differs from everyday language usage.

theory, for example.

With more data – and larger scale data sets – scientists can draw more robust conclusions.
GREAT BACKYARD BIRD COUNT

The Great Backyard Bird Count

Sign In or Register as a New User

GBBC is one of the longest running Citizen Science projects: established in 1998.

First online Citizen Science project to display data in real time.

Experience with Citizen Science projects is extremely beneficial for students looking at a career involving education – it is something you can incorporate in your own classroom.
GBBC

GBBC 2018 numbers:

- 180,609 check lists submitted
- 6460 species observed
- 28,894,636 individual birds sighted

Participant locations:

- North America
- South America
- Europe
- Australia
- Asia
- Africa
- Antarctica
- Oceanic Islands
Why count birds?

Birds are excellent subjects for Citizen Science work.

Birds are charismatic mega-fauna.
- colorful & attractive
- people find them interesting (catering to bird watching & bird enthusiasts is BIG business)

People are “predisposed” to care about birds (already have feelings of attachment/concern).
- keep birds as pets
- feed wild birds

Birds readily come to feeders.
- brings the science to the citizens

Bird biodiversity isn’t overwhelming.
- approximately 10,000 species
  - compared to, say, beetles (350,000+ species).
  - some estimates put the number closer to 20,000, but it depends on how you define a species.
- many identification aids (e.g. Sibley Guide to Birds, Merlin Bird ID app)
Why count birds?

Birds populations are very dynamic – they are constantly in flux.

Some bird species have different summer and winter ranges.

Some bird species stay in the same area year-round.

GBBC provides a snapshot in time (mid-February) of what bird species are where and in what numbers.

Answer questions about how populations are changing over time and how changing environmental conditions affect birds.

Are ranges shifting over time?

Do shifts correlate with particular climatic factors (temperature, rainfall, etc.)?

Are certain species more sensitive to fluctuations, and therefore might function as the proverbial “canary in the coal mine” – early warning indicators of climatic changes?

Are other factors influencing bird populations?

- catastrophic events (e.g. fires, flooding, etc.)
- habitat loss
- introduced species (predators)
- disease
- food supply

Long-term data set: 20+ year period.
Massive world-wide data set: look for large scale patterns.

There are many possible causes of such fluctuations.

Is timing of migration changing?