

## Ernie Pollard Meets the Dragonflies



Doug Taron  
Peggy Notebaert Nature Museum



## It all started with butterflies



## Monk's Wood



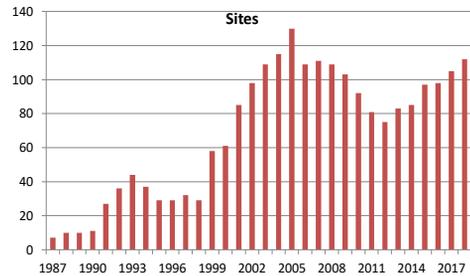
## Bluff Spring Fen Butterfly Survey Route



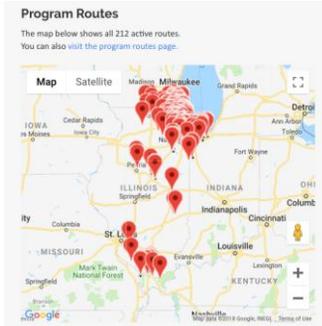
## Citizen Science



## Sites Submitting Data



### IBMN sites in Illinois



### Pollard Protocol Butterfly Monitoring is Expanding Nationally



### What Pollard Surveys Do and Do Not Show

**Yes**

- Relative abundance
- Changes in abundance over time
- Distributions

**No**

- Absolute population size
- Movement of individuals
- Mortality/Individual lifespan

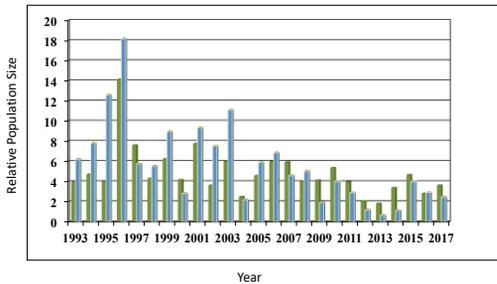
**IMPORTANT:** In order to compare locations, years, or even different surveys on the same site, the amount of search effort must be accounted for. Record start and stop times!

Additionally, the surveys must be conducted in a way that is consistent as possible in order to generate data that is most suitable for analysis.

### How have butterfly data been used?

- UK Butterfly Monitoring Scheme:
  - Over 100 journal articles
  - 6 Books
  - 14 Book chapters
- IBMN
  - 3 Journal articles
  - 2 Book Chapters

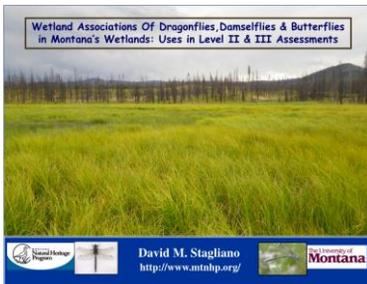
### How have butterfly data been used? Monarchs in Illinois and Mexico



### The move from butterflies to dragonflies



## We were not the first to try to apply Pollard's technique to dragonflies



## We were not the first to try to apply Pollard's technique to dragonflies



## IOS started in 2002, right here at the Nature Museum

- Gareth Blakesley started the project
- Originally called the Dragonfly Monitoring Network
- Part of a larger project to include dragonflies in our butterfly exhibit
- That part didn't work very well- but dragonfly monitoring did



## The program has moved around a lot

- 2003: First year of data collection, PNNM
- 2005: Moved to Harper College
- 2013: Moved to Lake Katherine
- 2017: Returned here to PNNM



## Data formatting is now inconsistent Today data are stored in:

- Filemaker Pro records in an outdated version
- Excell spreadsheets with at least 4 different formats
- PollardBase



## A goal for IOS is getting data to the point where it can be analyzed







Technology has helped tremendously with consistency

- Digital mapping makes it much easier to keep track of routes, and to keep survey routes associated with the data collected there.
- Menu-driven databases keep species and place names much more uniform.

PollardBase!

Again, it began with butterflies

- 2012 Meeting at Georgetown
- Storage for Pollard survey data identified as priority
- PollardBase developed, began taking data in 2013
- IBMN historic data uploaded in 2017
- PollardBase began taking dragonfly data in 2018



**PollardBase** Home Reports My PollardBase Help

Hi Test User2  
Illinois Butterfly Monitoring Network

Home » Program Routes

**Program Routes**

The list below provides access to active routes for all programs of which you're a member. Use the filters to limit the results by monitoring program, by favorites, by county, by state, or by a site name.

Displaying 1 - 20 of 212

Monitoring Program (Illinois Butterfly Monitoring Network) State (Any) County Site Status Active

Favorites Any Reset

**Illinois**

**Main Route**  
Add to favorites  
Land Owner: FPODEC  
County: DeWitt  
Route ID: IL-12114  
[Report survey results](#)

**Illinois Caddisfly Pool**

**Main Route**  
Add to favorites  
Land Owner: Chicago Park District  
County: Cook  
Route ID: IL-6003  
[Report survey results](#)

**PollardBase** Home Reports Surveys My PollardBase Help

Hi Doug Tarn  
Illinois Butterfly Monitoring Network » Illinois Climate Survey

PollardBase » Illinois Butterfly Monitoring Network » All In » Main Route

**Main Route**

View Edit Revisions

Illinois

Land Owner: FPODEC  
County: DeWitt  
State: IL  
Status: Active  
Total surveys entered: 31  
First year entered: 2017  
Last year entered: 2018

Section A: Woods  
Section B: Restored Prairie  
Section C: Pond Edge  
Section D: Roadside  
[Report survey results](#)

**Surveys**

- Main Route - Sep 12 2018 - 1:05pm
- Main Route - Sep 5 2018 - 10:20am
- Main Route - Aug 30 2018 - 4:45pm
- Main Route - Aug 29 2018 - 11:20am
- Main Route - Aug 25 2018 - 12:15pm
- Main Route - Aug 15 2018 - 11:15am
- Main Route - Aug 7 2018 - 10:00am
- Main Route - Jul 29 2018 - 1:05pm
- Main Route - Jul 25 2018 - 11:20am
- Main Route - Jul 23 2018 - 11:20am
- Main Route - Jul 19 2018 - 10:45am

Images

**PollardBase** Home Reports My PollardBase Help

Hi Test User2  
Illinois Butterfly Monitoring Network

PollardBase » Illinois Butterfly Monitoring Network

**Illinois Butterfly Monitoring Network**

The Illinois Butterfly Monitoring Network engages citizen scientists in the process of collecting quantitative data on butterfly populations. Their goal is to provide data collected with a standardized protocol that allows land managers to evaluate long-term trends in a changing landscape. The Network also offers opportunities for fellowship, mentorship, and continuing education between citizen scientists and professional biologists.  
Website: www.ill.org

**Program Routes**  
The map below shows all 212 active routes. You can also visit the program routes page.

**My Favorite Routes**  
Up to four of your favorite routes are listed below.

**All In**  
Main Route  
[Report survey results](#)

See all routes on the program routes page.

**PollardBase** Home Reports My PollardBase Help

Hi Test User2  
Illinois Butterfly Monitoring Network

Home » Add content

**Create Monitoring Program Survey**

People \* Date and Time \* Weather (start) \* Weather (end) Species Data \* Notes

Images

Each program has its own rules about how many people can go on a survey and what roles each person can take. Everyone who walks the route should be recorded here in the proper place. Most programs have a lead monitor (observer/leader) who is the only person who can report butterflies. A recorder/scribe often accompanies the lead monitor and records observations. Other participants should be listed separately.

**Observer/Leader \***  
Full Name  
Recorder/Scribe

**Other participants**  
Please list any additional participants in a comma separated list.  
Admin

Revision information  
Revision log message  
Created by Test User2

Provide an explanation of the changes you are making. This will help other partners understand your motivations.

**Moderation state**  
Pending  
Set the moderation state for this content.

Preview

**PollardBase** Home Reports My PollardBase Help

Hi Test User2  
Illinois Butterfly Monitoring Network

Home » Add content

**Create Monitoring Program Survey**

People \* Date and Time \* Weather (start) \* Weather (end) Species Data \* Notes

Images

Enter start and stop date and times. If you took any significant breaks, please record those.

Date \*

If you do not know the end time, then enter the same time as you entered for "start." Make a note in the Notes tab.

Date Time  
2018/10/01 10:00am  
E.g., 2018/10/17 E.g., 08:38am

Date Time to \*  
2018/10/01 11:00am  
E.g., 2018/10/17 E.g., 08:38am

**Break Time**  
[]  
Record the length of any breaks in minutes.

**Was the survey completed? \***  
Yes  
No  
Unknown

**PollardBase** Home Reports My PollardBase Help

Hi Test User2  
Illinois Butterfly Monitoring Network

Home » Add content

**Create Monitoring Program Survey**

People \* Date and Time \* Weather (start) \* Weather (end) Species Data \* Notes

Images

**Sky \***  
Select a value -

**Wind \***  
Select a value -

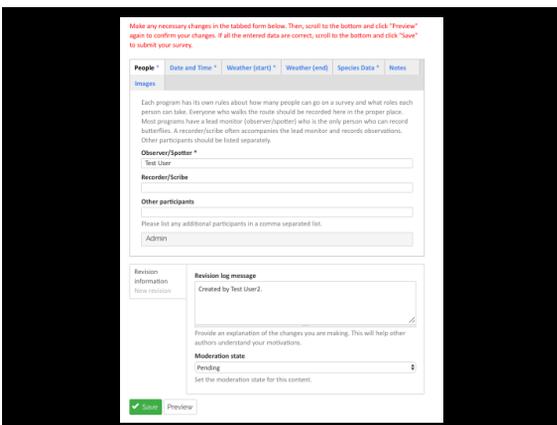
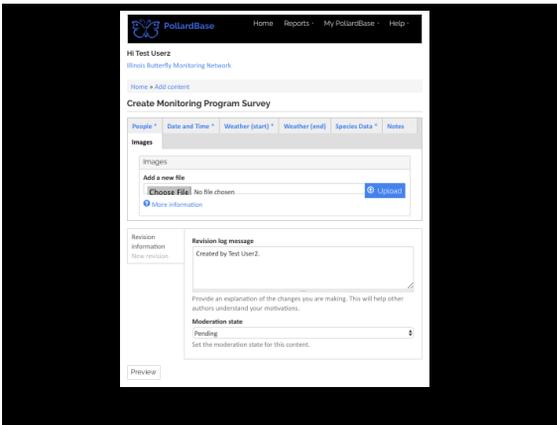
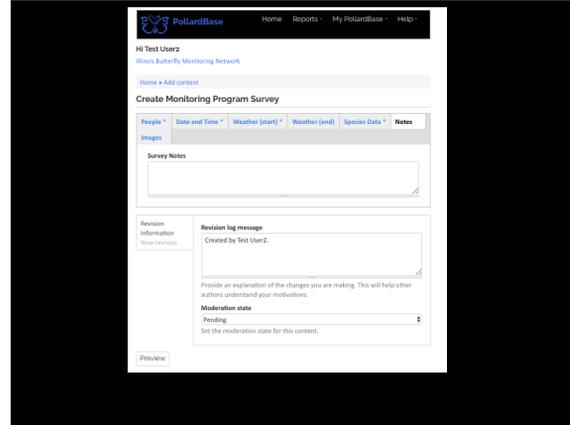
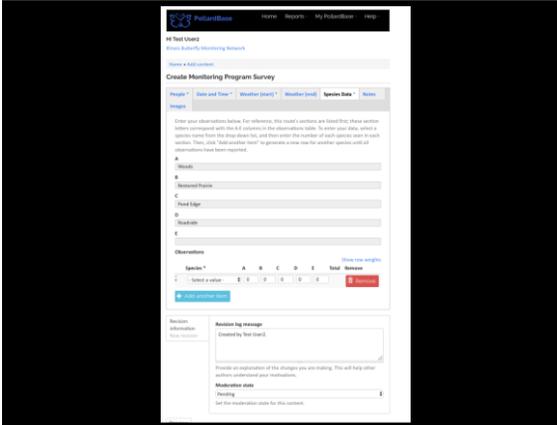
**Temperature**  
Enter degrees in Celsius or Fahrenheit, depending on your program.  
Temperature is unknown

Revision information  
Revision log message  
Created by Test User2

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Pending  
Set the moderation state for this content.

Preview



### Tips and Tools for Improving Accuracy

- Always consider more common species before identifying something as a rarity
- Pay attention to the list of the most common species. The majority of your sightings will be on that list.

## Springwater Dancer - *Argia plana*



## Tips and Tools for Improving Accuracy

- Always consider more common species before identifying something as a rarity
- Pay attention to the list of the most common species. The majority of your sightings will be on that list.
- Make use of partial identifications. Less precise is far preferable to wrong.

## Data Quantity

Datasets frequently become more powerful as they become larger:

- More survey routes
- More surveys per year
- Longer time series

Incorporating historic data into PollardBase and recruiting volunteers are high priorities for IOS

More analyses will become possible with a larger, more accessible data set.

Wei, J. W., Lee, B. P. Y., & Wen, L. B. (2016). Citizen Science and the Urban Ecology of Birds and Butterflies—A Systematic Review. *PLoS one*, 11(6), e0156425

- Among the butterfly monitoring projects represented by contributions to scientific journals, the survey model developed by the Chicago-Illinois Butterfly Monitoring Network is arguably the most commendable in terms of producing data which could contribute to a greater variety of research categories, in particular long-term population trends.

