

Questions about research briefs

- What features did interpreters identify as useful?
- What did existing briefs offer?
- What are the missed opportunities?

Need

Describe a format for briefs that supports interpreters'

1. knowledge and confidence
2. efforts to promote STEM learning
3. conversations about the value & relevance of park-based research



Findings

Of the 86 briefs analyzed
24 posed questions to organize info
3 had ideas for taking action
22 offered applications for managers

Scientists' briefs are informative and often

- Assume knowledge of technical terms
- Are densely written
- Omit photo credits & fair use info
- Don't typically offer suggestions for stewardship or ways to stay connected to the research

Read more at iswoopparks.com/reports

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Research Briefs: Adjust the format and content Make it easier for interpreters to talk about your science with the public.

Share WHY (why now, why it matters)

Offer ways to stay connected or learn more

Use questions, encourage prediction

Give story ideas (challenges overcome)

Offer sources for hi-res images, clarify credit & fair use

Great Lakes Research and Education Center

Amphibian Response to Climate Change at Indiana Dunes National Lakeshore

Importance
This study is part of the Terrestrial Wetland Global Change Research Network project coordinated by US Geological Survey Amphibian Research & Monitoring Initiative (USGS ARMI) to investigate the response of amphibian populations to climate change in the northern parts of North America. The research focuses on Wood Frogs (*Rana sylvatica*) and Blue-spotted Salamanders (*Ambystoma laterale*). These are the two species of amphibians that range the furthest north and are the most likely to be impacted by climate change and management approaches. Researchers asked: Does warming impact amphibians in north-west Indiana, including Indiana Dunes National Lakeshore?

Methods
In 2013 and 2014 data were collected in the Cowles Bog wetland complex (Figure 1). Amphibian communities are monitored in the field by surveying wetlands and surrounding forest habitat. Each site is surveyed at least once a month from March to June. Adult and larval amphibians, and eggs are surveyed in wetlands using visual searches, minnow traps, and dipnets. Researchers search for terrestrial adults and juveniles under logs and leaf cover. Song meters are mounted in boxes on trees at four sites to record frog calls. The digital recordings are sent to the USGS ARMI program for analysis. The call data can be used to identify species. Dates are added to a database on timing of breeding activities for each species. The amphibians collected are photographed and identified in the field and immediately returned to their site of collection.

Preliminary Results: Amphibian Abundance
Observations made in 2013, the year flooding ended the 2012 drought, revealed larger numbers of breeding amphibians, however, this was the first year that the research team did not observe any Four-toed Salamanders. Slimy Salamanders had become rare in recent years, and none was found in 2012 or 2013. Other herpetologists have observed similar declines. In 2013 data were collected during four survey visits and from one songmeter in Cowles Bog.

Figure 1. Researchers assessed abundance for baseline (2013), restoration activity (2014-2015), and post restoration (2016).

Figure 2. Amphibian trends are shown with red regression lines and R2 for amphibian abundance, diversity index, species richness, and salamander abundance for baseline (2013), restoration activity (2014-2015), and post restoration (2016).

*Summarizing the research is easy.
The part that is difficult is getting people engaged.*
—Janel Brackin, Science Communicator



Interpreters' Aims and Preferences

- Reveal something amazing, memorable, or significant
- Spark curiosity & excitement
- Highlight the importance or relevance
- Tell a suspenseful or amusing story about your work.

iSWOOP learned from 19 interviews (n=19) with park rangers at 3 parks

- Visualizations of data (esp. easy to understand, colorful bar graphs) can supply a punch line, cluing visitors in to a disturbing or hopeful trend (5 interpreters).
- The back story is of interest: "What's happening to the populations that made this an important research project; why are we doing it?" "Has the research been ongoing?" (4 interpreters).
- Seasoned interpreters looked for "catchy things" they could use with visitors: impressive facts or an intriguing question.

Regarding images

Images are a large part of most research briefs. The mode was two (2 images in 24 of 86 briefs analyzed). Nearly all briefs featured photos, maps, or graphs that provided visual interest, illustrated text, or described trends.

We coded for images that presented something puzzling, rarely seen, or that included the researcher in action. Of 245 total images and figures:

- 9 included the researcher
- 13 showed some aspect of the resource that is rarely seen, and
- 4 had an ambiguous image that might prompt a reader to wonder, "What am I looking at here?"

Typical briefs	
Sample of 86 briefs	Average
Flesch-Kincaid reading ease (0-100, 100 is easiest)	33
Grade level readability	13
Word count	819
Illustrations (graphs, etc.)	3.75

More Ideas for a Better Brief

- State the IMPORTANCE within & beyond the park
- Make it obvious where to find the full report
- Use intriguing headlines
- Give impressive facts (about the instruments, the phenomenon, resource, or the methods)
- Include pictures of people in action doing fieldwork
- Show off the cute and furry
- Show before and after images