

WHENOLOGY: Science of the seasons

Richard Feldman¹, Alyssa Caddle², John Cardente², Mark Chandler³, Abe Miller-Rushing⁴

¹Schoodic Institute, ²EMC Corporation, ³Earthwatch Institute, ⁴National Park Service, Acadia National Park

With the support and assistance of:



WHENOLOGY is a computer platform that integrates multiple citizen science data sets

<http://www.emc.com/whenology>

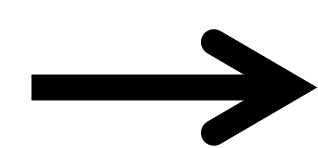
EXAMPLE

Important species interaction:

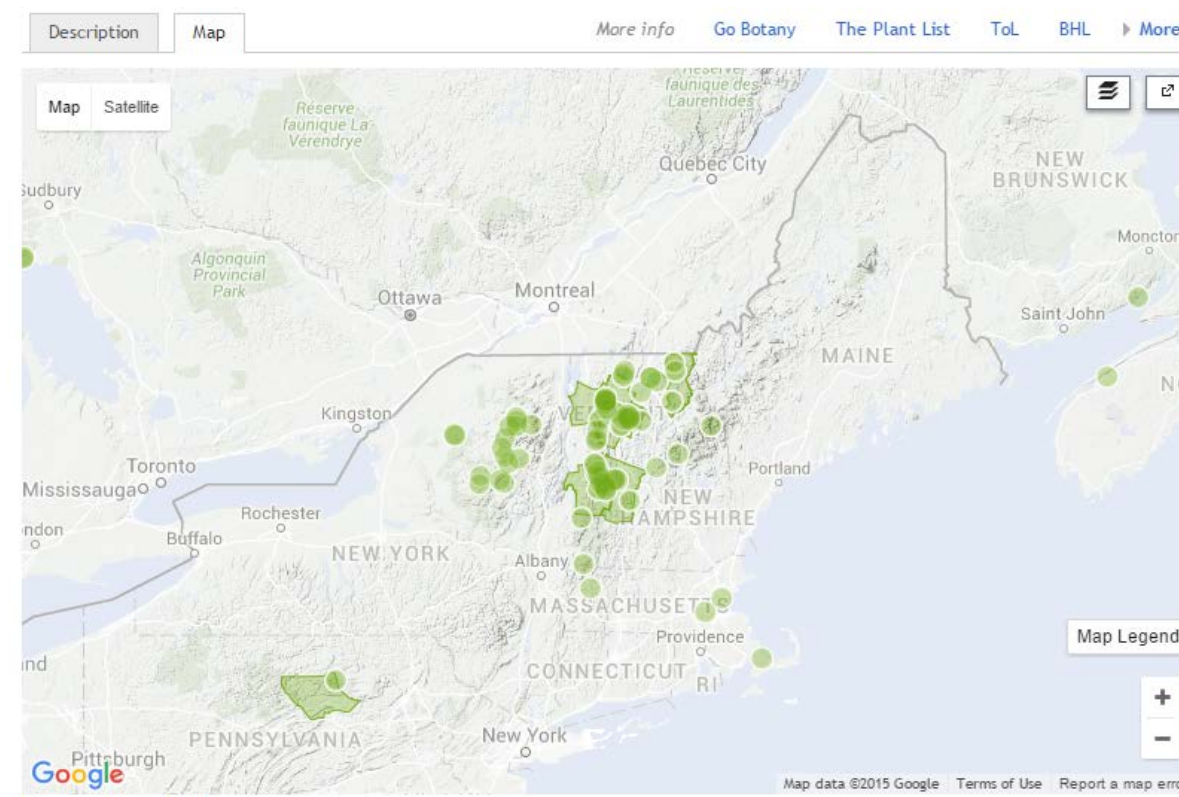
Cedar waxwings eat Mountain ash fruit*!



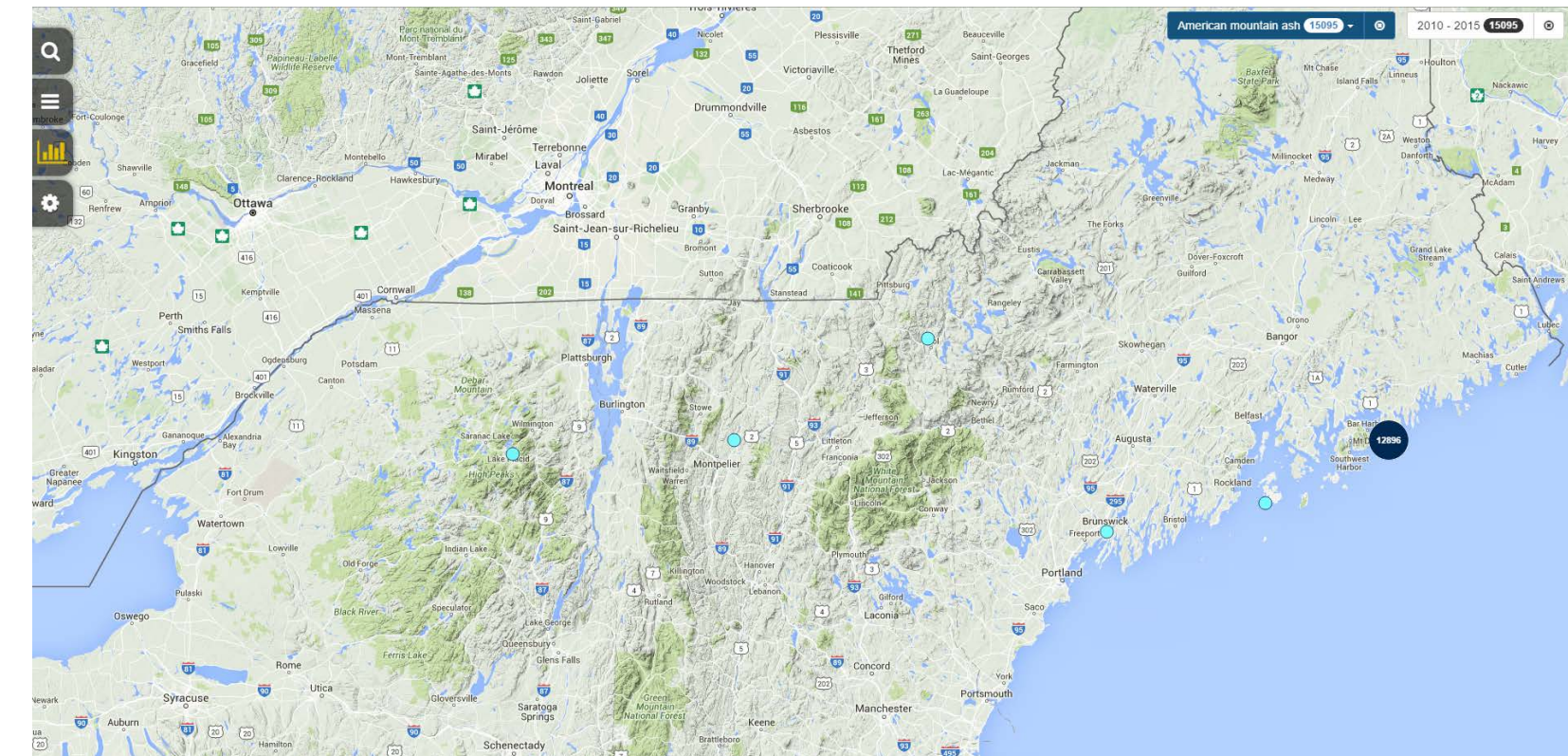
*Okay, This isn't Mountain ash. It's Mountain holly. But they're pretty pictures, courtesy Megan Roselli



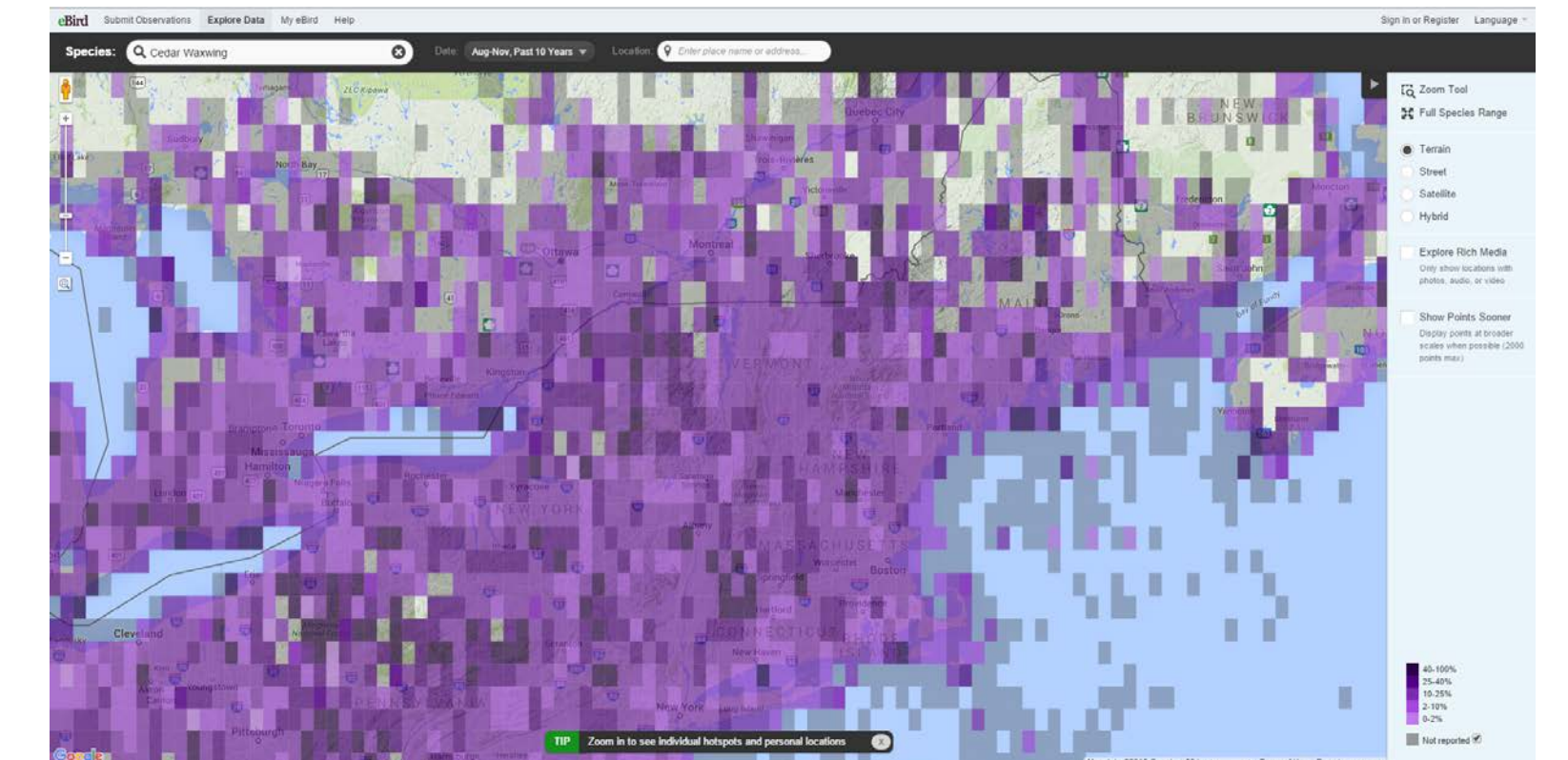
Where do we have occurrence data for mountain ash and cedar waxwings?



Mountain ash observations from *iNaturalist*
www.inaturalist.org



Mountain ash observations from *Nature's Notebook*
www.usanpn.org/nm/connect/visualizations



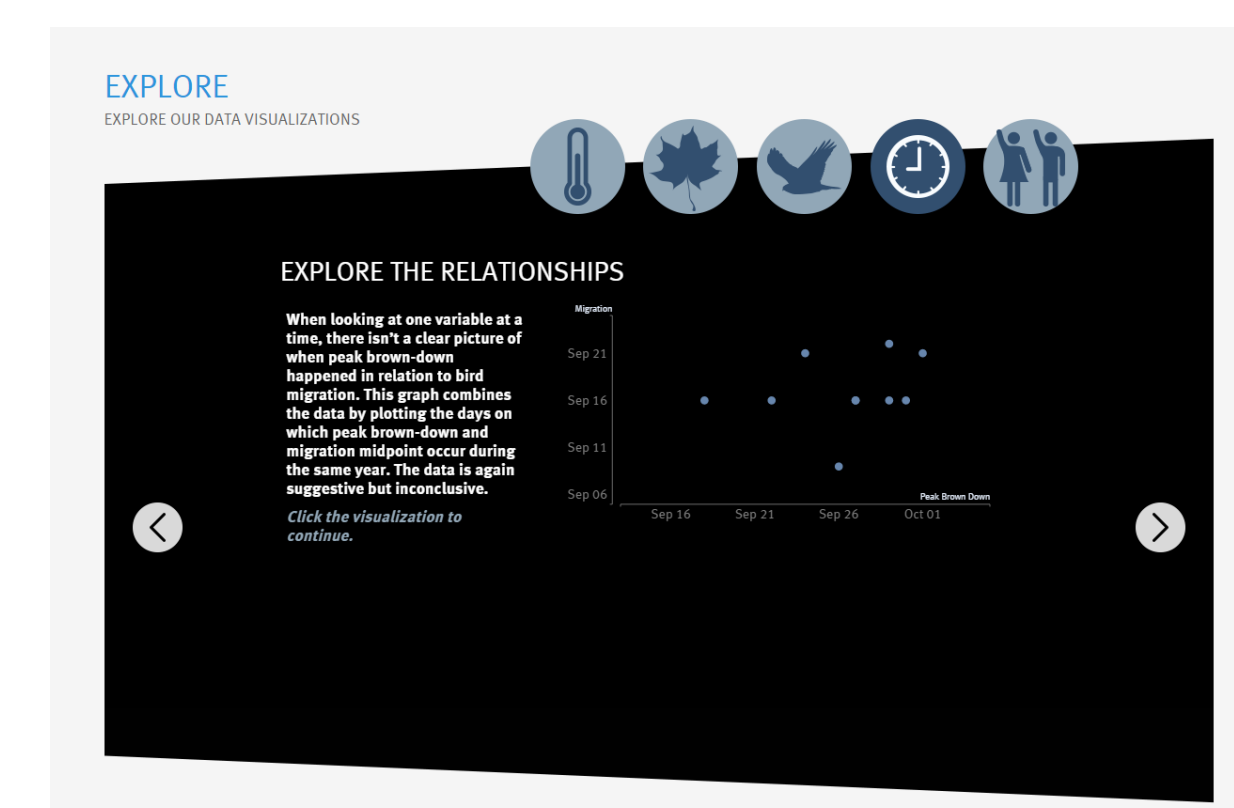
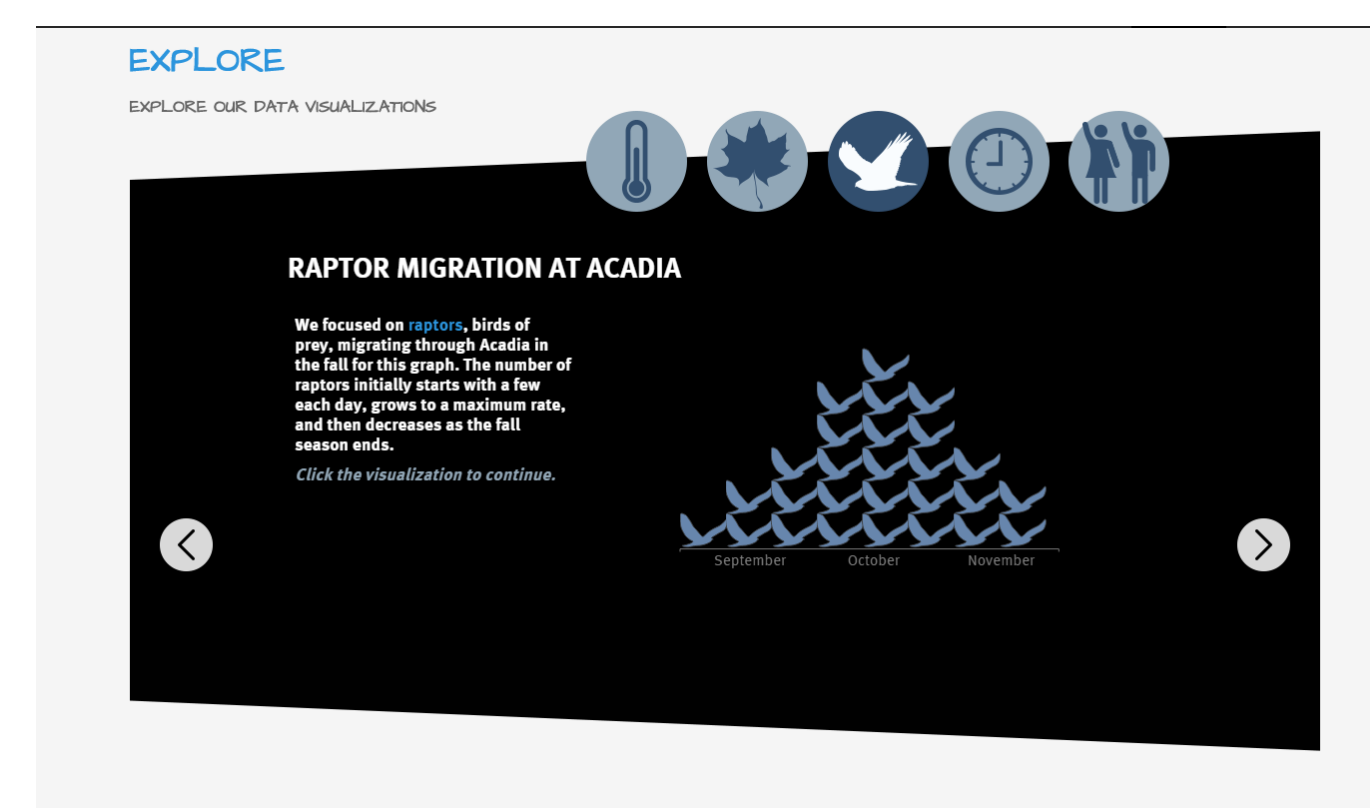
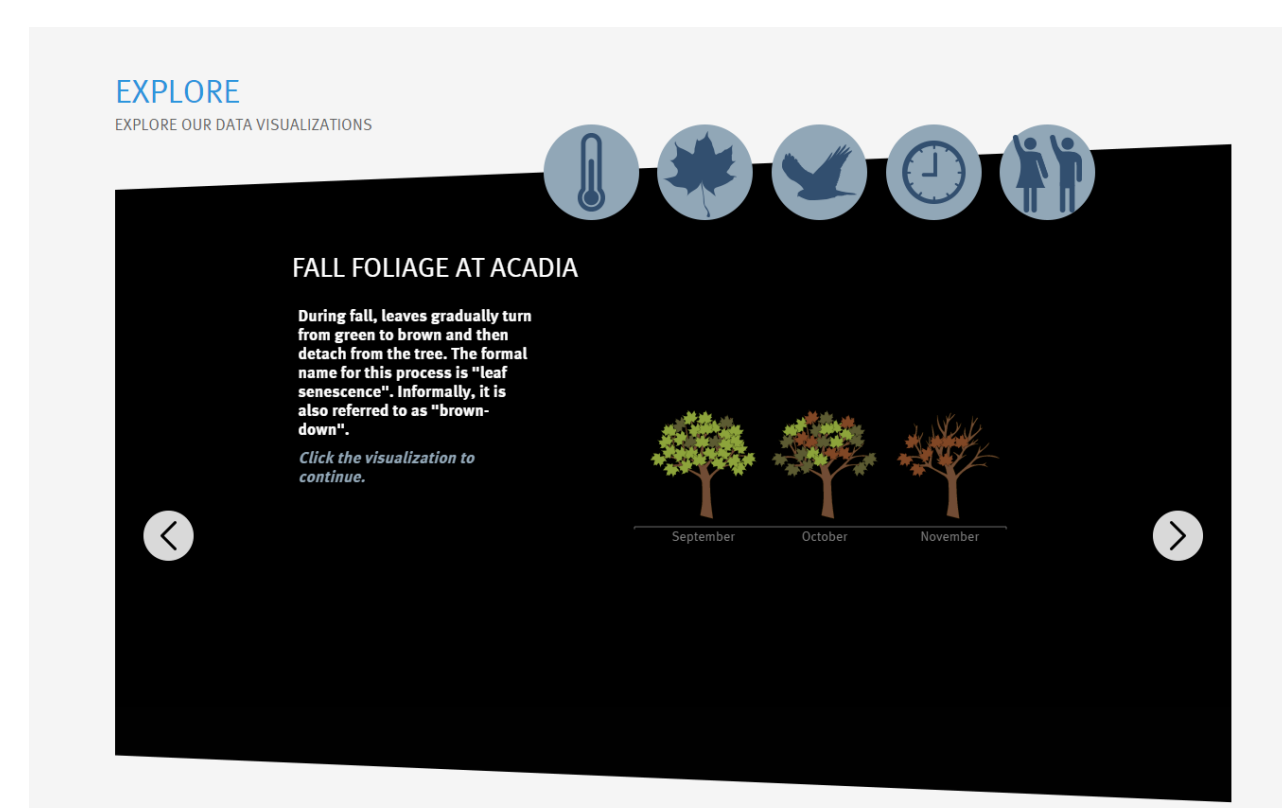
Cedar waxwing observations from *eBird*
www.ebird.org

WHENOLOGY uses citizen science data to monitor and predict the effects of climate change on species interactions

<http://www.emc.com/whenology>

EXAMPLE

Do raptors migrate before or after most trees have lost their leaves?

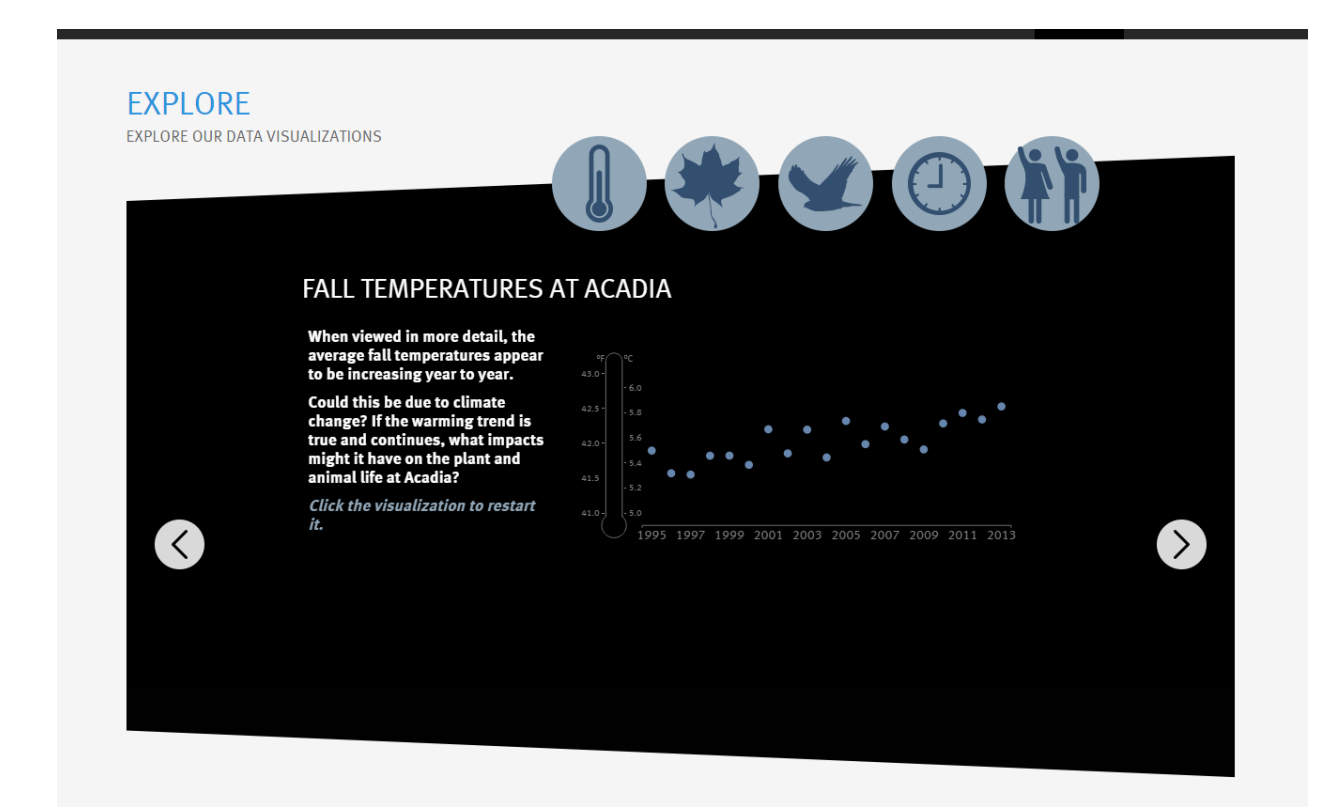
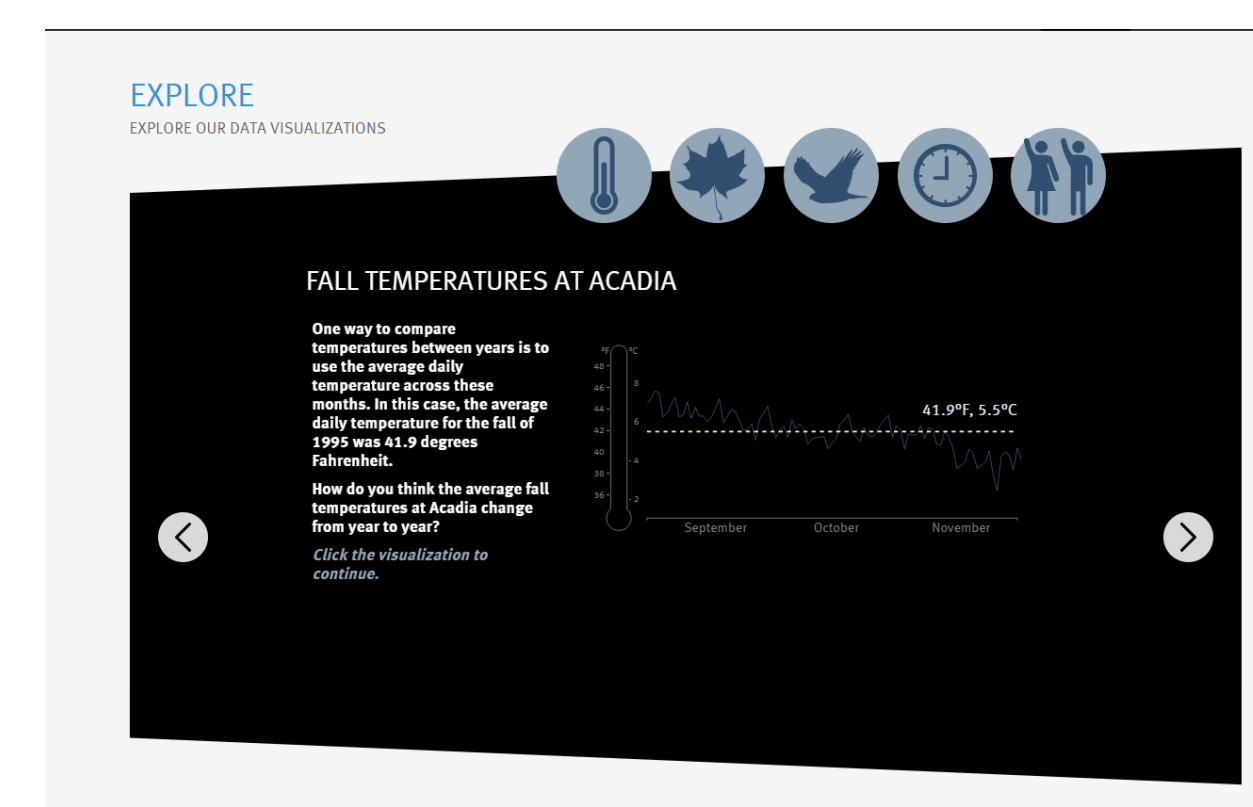
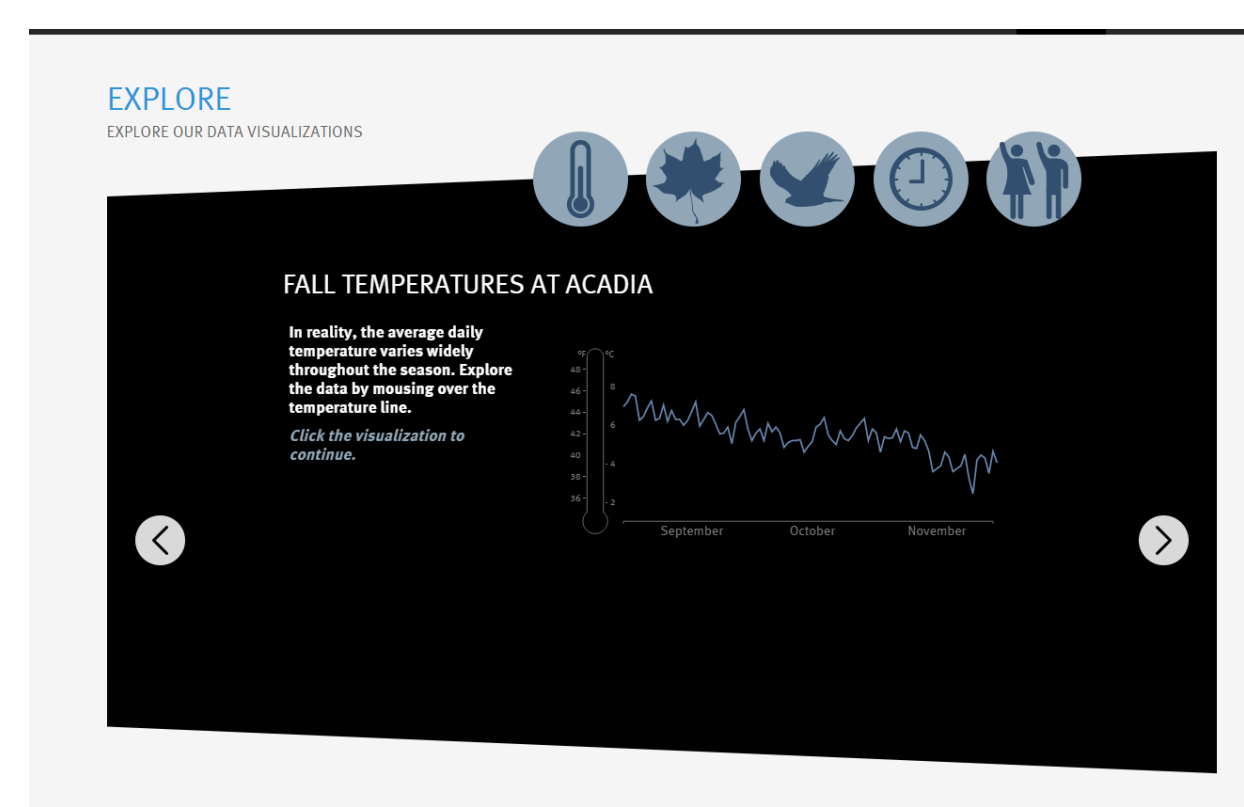
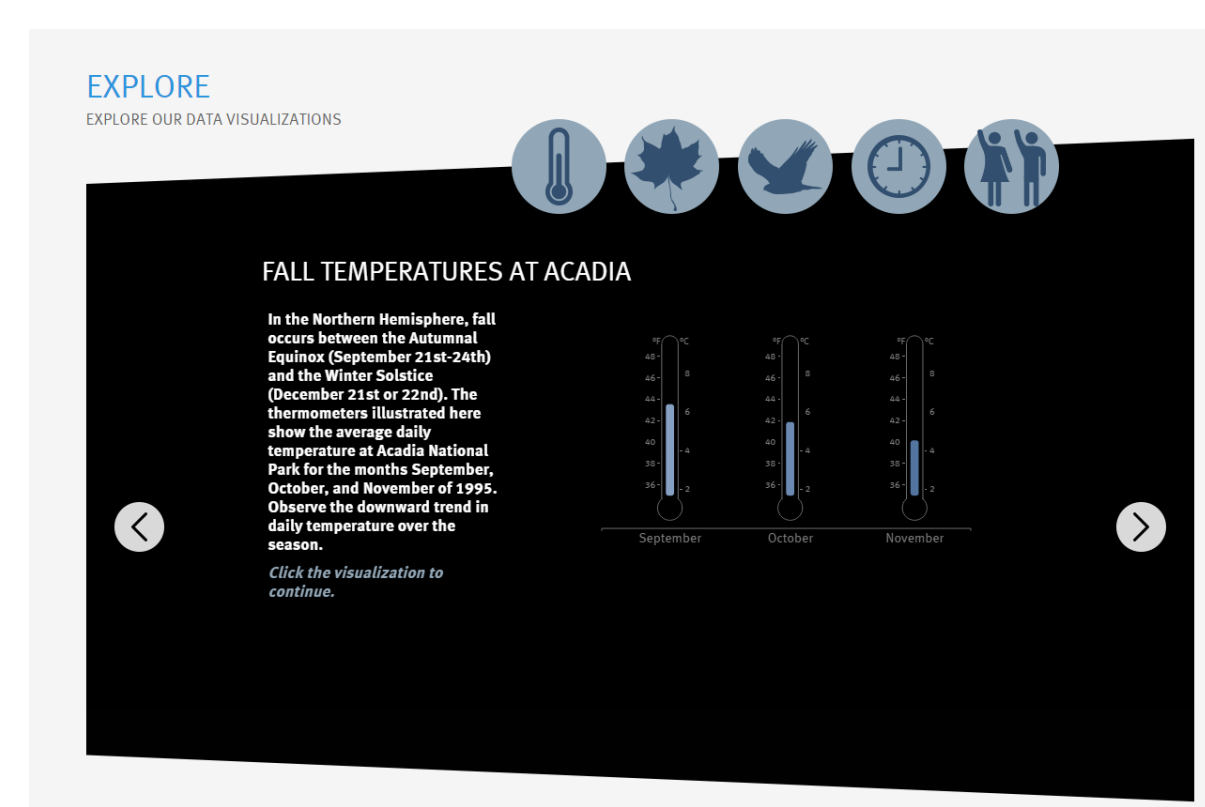


WHENOLOGY uses visualizations to tell stories about climate change and biodiversity in Maine and across the world

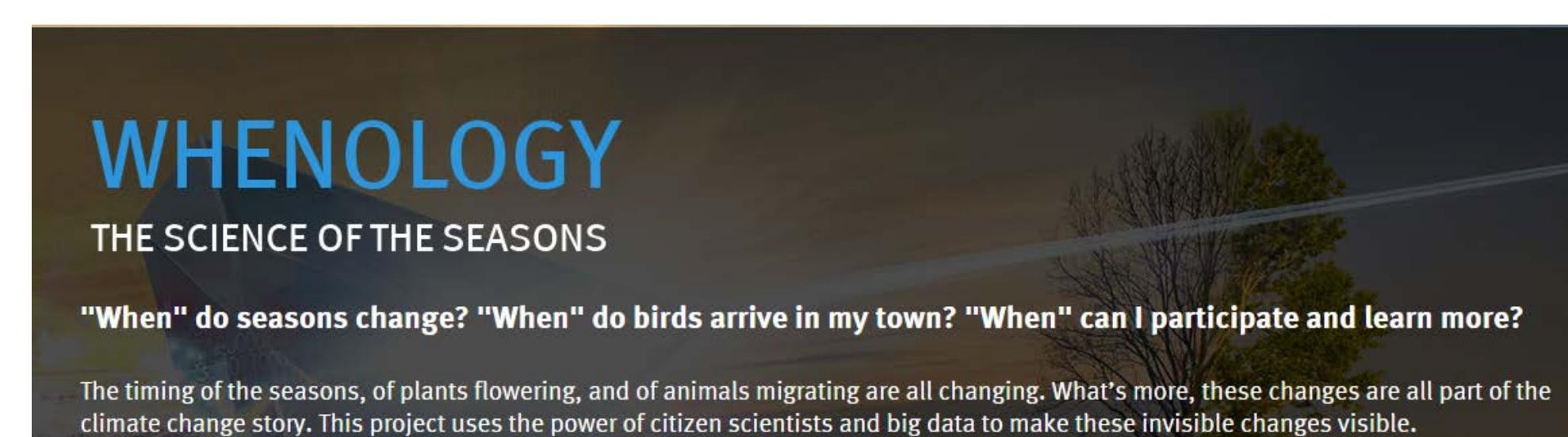
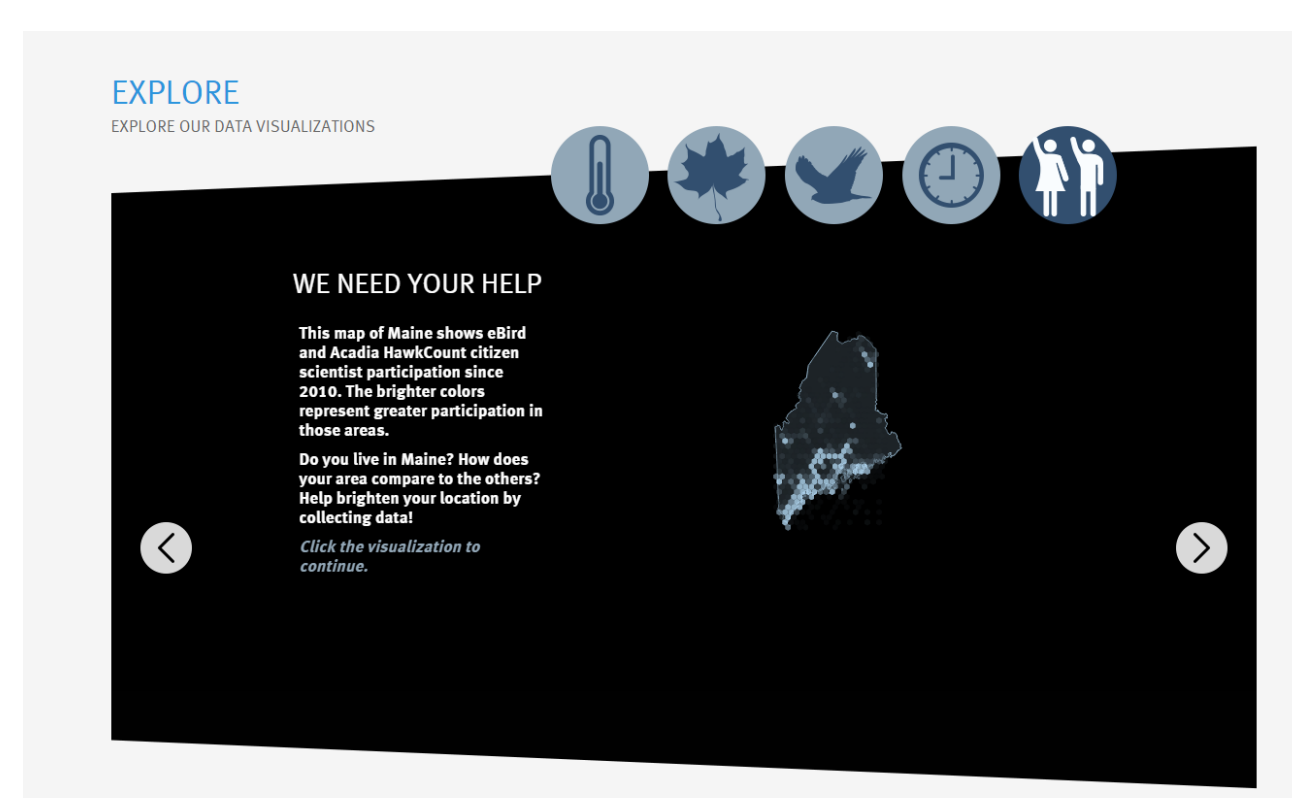
<http://www.emc.com/whenology>

EXAMPLE

How is fall temperature changing at Acadia National Park?



WHENOLOGY. Get involved! Visit us online.



<http://www.emc.com/whenology>

WHENOLOGY project – next steps -

- Expand analyses and visualizations to more species using more data sources
- Improve visualizations based on feedback from diverse audiences
- Build models to predict how species abundances change across seasons