Ancient LA

Connecting collections and communities with ArcGIS Story Maps

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Natural history collections represent specimens from around the world with stories that often do not tget told to the general public. There is also a lack of educational resources that teach how to think geospatially. The Natural History Museum of Los Angeles County Invertebrate Paleontology (**LACMIP**) and California STEM Institute for Innovation and Improvement (**CSI³**) have partnered together to address these deficiencies by developing Story Maps about specimens collected around Los Angeles for teachers to use in classrooms.

Ancient LA is LACMIP's and CSI3's prototype of how Story Maps can be used for the general public and in classrooms. This poster explains how ArcGIS Story Maps can be used by other institutions looking to increase the reach of their collections.

What is Ancient LA?
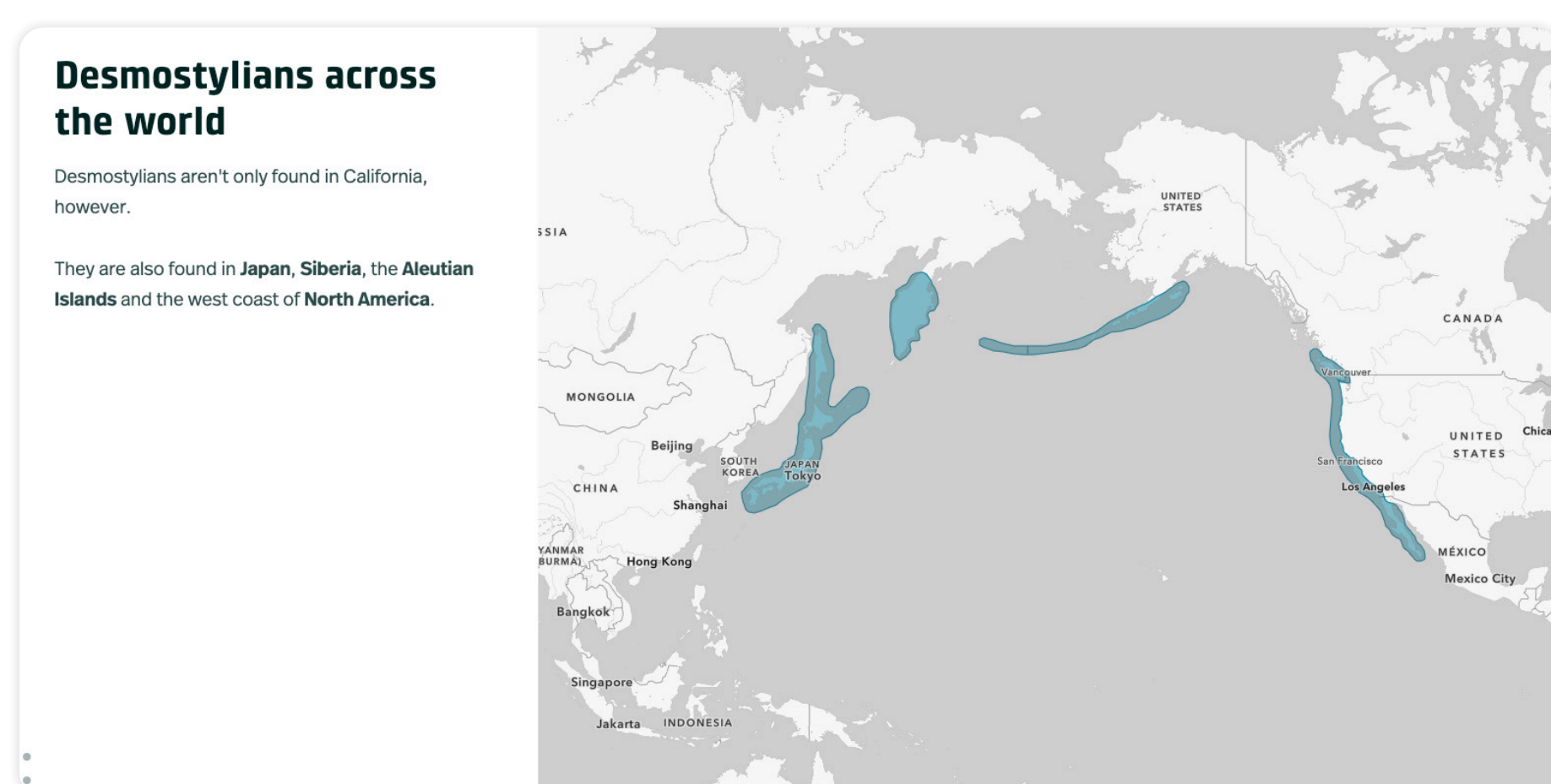
Community focused

Hollywood Bowl Desmostylian
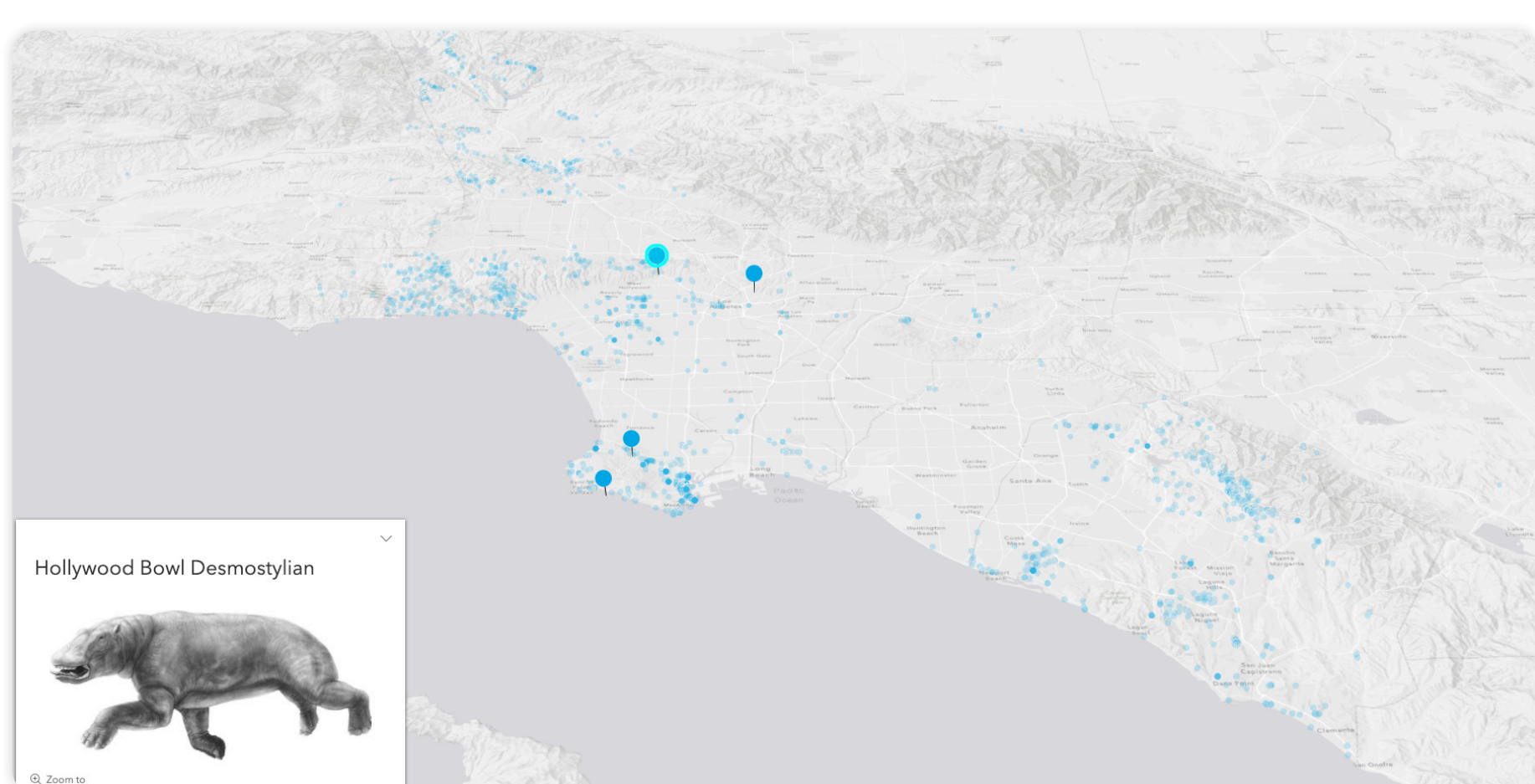
Ancient LA's landing page is a **3D map** of the Los Angeles area. Blue dots represent fossil localities and pins are links to other Story Map submodules about specific specimens. Users can pan around Los Angeles to see where the museum has collected specimens.

Interactive

A Miocene Star

Desmostylian fossils are relatively rare. Paleontologists rely on incomplete remains such as this **lower jaw and tusk** to piece together as much information as they can about how these animals lived.
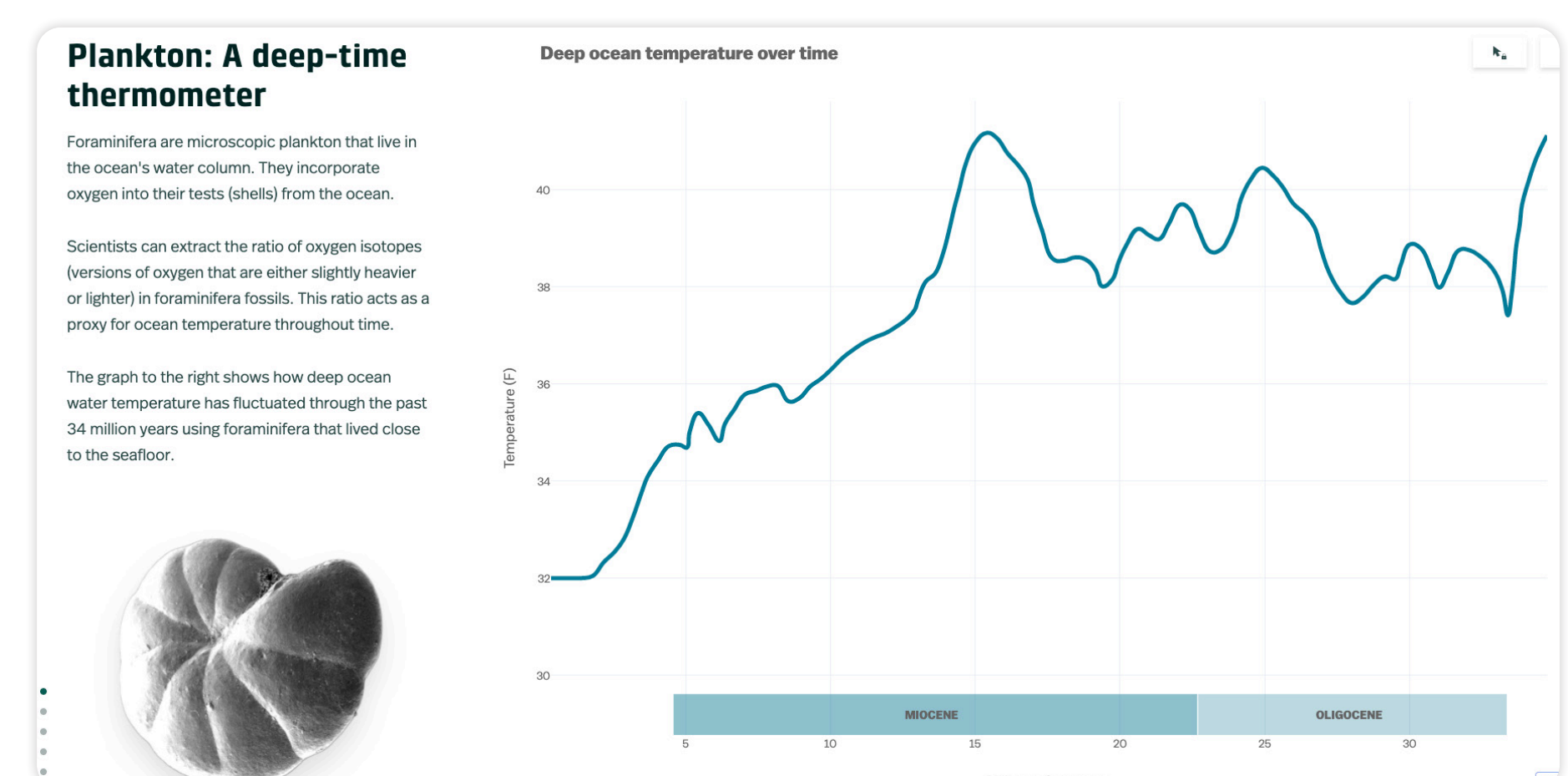

Websites can be **seamlessly embedded** as iFrames or as URLs. This desmostylian tusk is animated with a magnifying glass and is hosted, for free, on GitHub Pages. Additional information can be added to graphics so as to not overwhelm users with text or graphics.

Geospatially driven

Desmostylians across the world

Desmostylians aren't only found in California, however.

They are also found in **Japan, Siberia**, the **Aleutian Islands** and the west coast of **North America**.

Maps can easily be produced with the Story Map Express Map maker or by uploading a csv of points to ArcGIS Online. While Story Maps benefit from GIS knowledge, its not necessary. Here, Desmostylia occurrences were pulled from **GBIF** and polygon layers were drawn using the Express Map creator.

Classroom ready

Plankton: A deep-time thermometer

Foraminifera are microscopic plankton that live in the ocean's water column. They incorporate oxygen into their tests (shells) from the ocean.

Scientists can extract the ratio of oxygen isotopes (versions of oxygen that are either slightly heavier or lighter) in foraminifera fossils. This ratio acts as a proxy for ocean temperature throughout time.

The graph to the right shows how deep ocean water temperature has fluctuated through the past 34 million years using foraminifera that lived close to the seafloor.

Deep ocean temperature over time

Ancient LA incorporates **educational standards** used by teachers in LAUSD to create lessons. Ancient LA will accompany lesson plans with tailor-made content. A photo of a benthic foram references LACMIP's 3D printed foraminifera which have been used as a physical prop in educational settings.

Why ArcGIS Story Maps?

ArcGIS Story Maps were chosen due to Esri's **free or inexpensive** licensing for non-profits and educational institutions. Esri is a world leader in geospatial technology, and ArcGIS Story Maps require little technical knowledge of their ArcGIS platforms or coding to create scalable, mobile-friendly and responsive web apps.

Story Map requirements

All you need is an ArcGIS Online account, which is offered by Esri for free or at a heavy discount for educational and non-profit organizations. If you are unsure if you have a license, it's worth asking your IT support. NHMLA had a non-profit that was largely unused before developing Ancient LA.

Future directions

LACMIP is currently developing more submodules about specimens collected around Los Angeles to expand the scope of Ancient LA. In the long term, we hope to use the Story Map platform to connect Los Angeles with stories from a more diverse range of **museum objects from around Southern California**.

Acknowldgements