



National Snow and Ice Data Center
University of Colorado Boulder

Social and technical dimensions of community data management: An overview from the ELOKA program

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Exchange for Local Observations & Knowledge of the Arctic

- Since 2005, ELOKA has fostered **collaboration and learning** between resident Arctic experts and visiting researchers to facilitate the **collection, preservation, exchange, and use** of local observations and Indigenous knowledge of the Arctic.
- ELOKA provides **data management and user support** in partnership with Indigenous communities and organizations to ensure their data and knowledge are ethically and equitably managed, shared, and used in order to uphold knowledge and data sovereignty for Arctic residents.

<http://www.eloka-arctic.org>



ELOKA Through the Years



Workshop in Anchorage - 2008



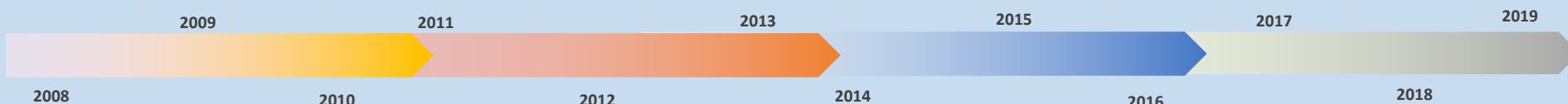
ELOKA community workshop – northern meeting, Kuujjuak, Nunavik - 2012



ELOKA Advisory Committee “Sharing Knowledge” workshop - 2013



Deg Xinag place names workshop, Anvik, AK - 2018



ELOKA Workshop, Boulder – 2011



Calista Elders Council Yup'ik Environmental Knowledge Project Meeting, Bethel, AK - 2012



Gwich'in Place Names & Traditional Knowledge Workshop – Fort Yukon, AK - 2017



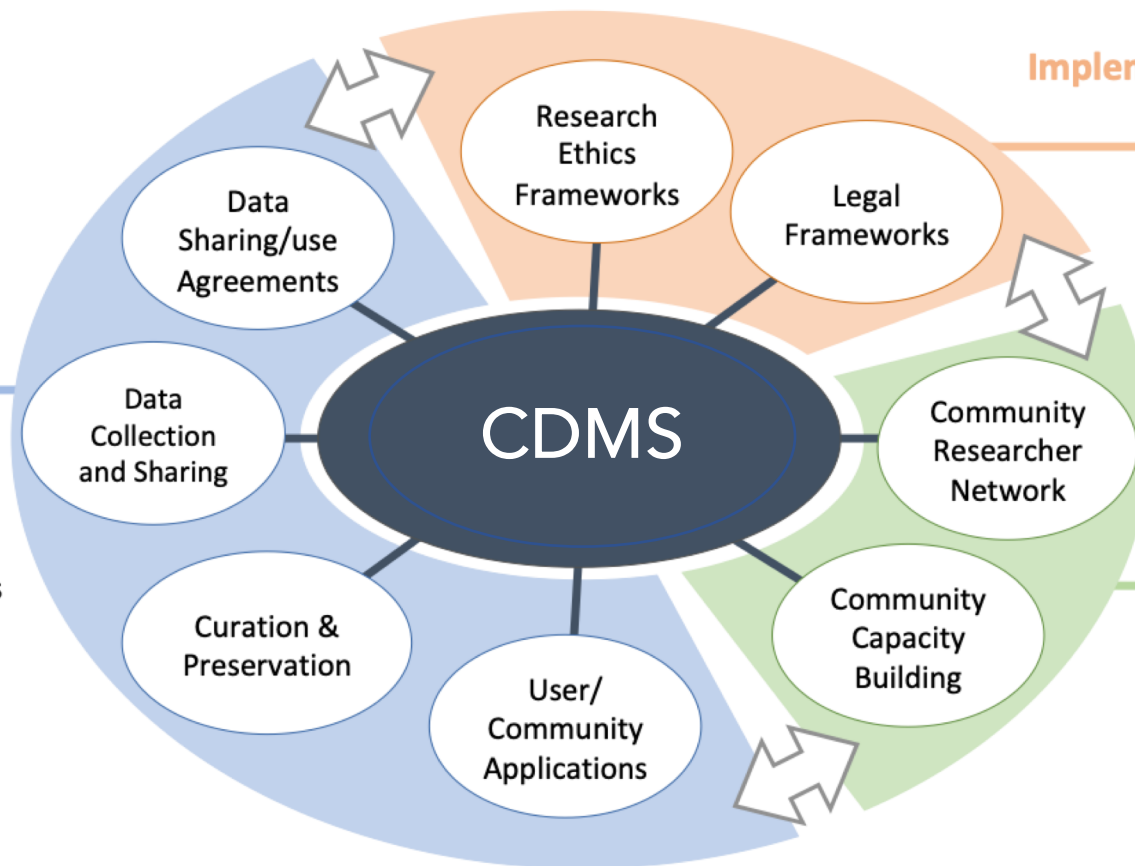
LKSD Teacher Training, Bethel, AK - 2018-2019



Community Data Management System (CDMS)

Collaborative Data Stewardship

- Common frameworks
- Project-specific adaptations
- Agile development
- Enabled for interoperability
- Use/Usefulness Assessments



Implementing Requirements & Best Practices

- UNDRIP
- FAIR and CARE Data Principles
- Land claims/treaties
- Tribal governance

Building Capacity & Community

- Trust building
- Multiple ways of sharing
- Collaborative scholarship
- Skills training
- Institutional capacity (infrastructure & technology)



Evolving norms for Arctic research

“Indigenous data sovereignty is the right of a nation to govern the collection, ownership, and application of its own data. It derives from tribes’ inherent right to govern their peoples, lands, and resources.”

- *U.S. Indigenous Data Sovereignty Network*





Evolving norms for Arctic research

- Growth of Indigenous research frameworks, strategies, programs, and projects
- CARE Principles (Collective Benefit/Authority to Control/Responsibility/Ethics)
- New platforms for Arctic Indigenous observations & Knowledge (SIKU, Local Environmental Observer (LEO) network, Indigenous Sentinels Network)





Data as a Resource for Governance

- Recognize and respect Indigenous governance structures
- Ask what data is needed and for what purpose (Not just a one-time ask)
- Resource data management appropriately
- Build capacity to host/manage data with Indigenous organizations





Building capacity for/ connection through CDM

Addressing gaps in digital access, technical capacity, and digital literacy through:

- Network trainings
- Supporting partners in hiring and training local technical leads and staff
- Co-creation across generations (elders and youth) to incorporate non-technical approaches



Recording place names for the Yup'ik Environmental Knowledge Project



Building capacity for/ connection through CDM

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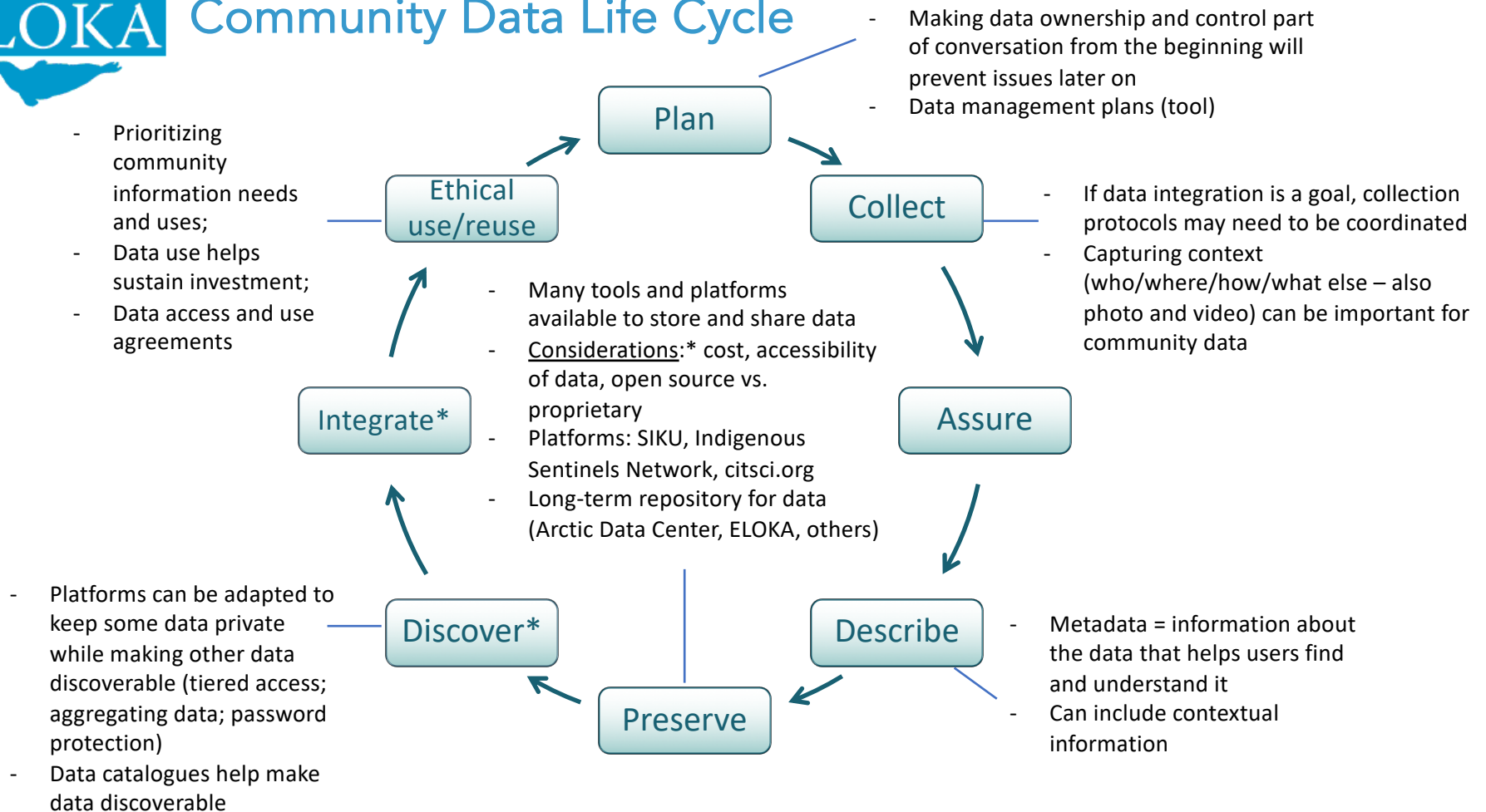
- Network trainings
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Teacher training workshop in Bethel, AK, 2019



Community Data Life Cycle





Example: Public vs private access sites

<http://eloka-arctic.org/product/atlas/nunaput-atlas>

Nunaput Private Atlas

[Home](#)[Monitoring](#)[Maps](#)[Observations](#)[Stories](#)[School](#)

WelcomeLogin

Nunaput Atlas Home Page

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Google

Welcome to the Nunaput Atlas

Nunaput translates to "our land" in Cup'ik, the Indigenous language of Chevak, Alaska. Chevak or *Cev'aq* means "cut through channel" and refers to the creation of a short cut between two rivers. Chevak is a Cup'ik community, distinct from the Yup'ik communities that surround it, located in the Yukon-Kuskokwim Delta region of Western Alaska.

The *Nunaput Atlas* is a community driven, interactive, online atlas for the Chevak Traditional Council and Chevak community members to create a record of observations, knowledge, and share stories about their land. The *Nunaput Atlas* is being developed in collaboration with the Exchange for Local Observations and Knowledge of the Arctic (ELOKA) and the U.S. Geological Survey (USGS). The community of Chevak has been involved in a number of community-based monitoring and research projects with the USGS and the Yukon River Inter-Tribal Watershed Council (YRITWC) over the years. The monitoring data collected by the Chevak Traditional Council's Environmental department as well as results from research projects are also presented in this atlas.



Example: Data Use Agreement

<https://eloka-arctic.org/sizonet>

The Local Observations database was developed to record, archive, and share indigenous sea ice knowledge and expertise. This information is generously shared with the public by the observers and the communities within which the observers reside. We ask that anyone interested in browsing or using the information review and agree to adhere to the ethical and appropriate use guidelines.

Visit the [Contacts page](#) if you have questions or would like to contribute observations.

Access to the Observations Catalog

Use Agreement

I understand that the observations compiled in this product were made by recognized local sea ice experts and are shared generously by the observers and their communities to help further education, scientific research, and communication between holders of local and indigenous knowledge and research scientists. I also understand that the observations were made in the context of sea ice knowledge and use specific to the different communities that are part of this project; any interpretation of the data should respect this context.

When using or referencing data from this product for research or reporting purposes, I:

1. Must acknowledge and cite by name the person(s) whose observations are being discussed or analyzed, unless the name of the observer(s) is not identified in the observation record.
2. Must use the following citation to reference the data set: Adams, B., L. Apangalook, P. Apangalook, S. John, J. Leavitt, W. Weyapuk, Jr., and other observers. 2013. *Local Observations from the Seasonal Ice Zone Observing Network (SIZONet)*. [Indicate subset used]. Edited by H. Eicken and M. Kaufman. Boulder, Colorado USA: National Snow and Ice Data Center. <http://dx.doi.org/10.7265/NSTB14VT>.
3. Should refer to the specific context within which the observations were made and compiled, as outlined in the following paper that provides additional background information: Eicken, H., Kaufman, M., Krupnik, I., Pulsifer, P., Apangalook, L., Apangalook, P., Weyapuk JR, W. and Leavitt, J. (2014) A framework and database for community sea ice observations in a changing Arctic: An Alaskan prototype for multiple users. *Polar Geography*, 37.(1), pp.5-27.

By accessing the data, I agree to the above Use Agreement.

Guest Access:

☐ I hereby agree to abide by the terms set forth in the Use Agreement.

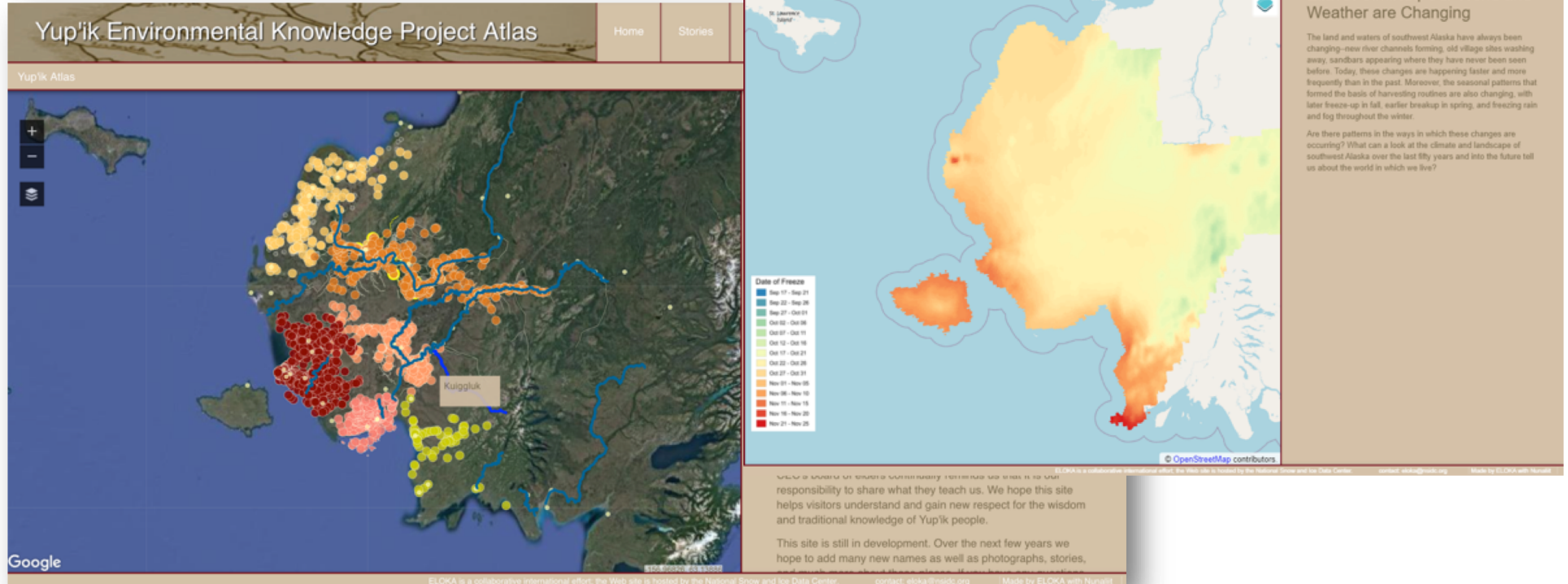
Registered Users:

Email

Password

Example: Yup'ik Environmental Knowledge Project Atlas

with Calista Education & Culture





Looking Ahead: Toward a Framework for **Use and Usability**



Credit: Shari Fox

- How to design/enhance data applications to:
 - Better address community needs and values
 - Ethically and equitably store and share community data
 - Connect to broader information sharing architectures
- How to support co-production of knowledge and shared learning
 - Working groups on place names & cultural atlases & long-term observational data
 - Synthesis through use cases to inform a broader framework
 - Learning & evaluation framework development



<http://www.eloka-arctic.org>

Contact Us:

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