

Earth and Environment Science Information Partners: ESIP & E2SIP parallel pathways on opposite sides of the globe

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November 21, 2022

Abstract

Addressing research problems in Earth and environmental science usually requires combining data from multiple sources. This is facilitated by the use of common practices, vocabularies, interfaces and standards and recently it has been accelerated through connected communities of practice. This abstract will focus on the Earth Science Information Partners (ESIP) and the Australian Earth and Environment Science Information Partners (E2SIP) Over the last 20 years ESIP has built a community of practice in USA, supported by NASA, NOAA & USGS, through regular meetings and online forums to examine and develop emerging technologies. ESIP has become a braintrust and professional home for the Earth science data and informatics community where both peer-led education & training and the codevelopment of conventions, practices and guidelines have helped make Earth science data more interoperable. Through connections in the ESIP network and these boundary objects, ESIP has influenced the international community. The Australian Earth and Environment Science Information Partners (E2SIP) was recently established through liaison with ESIP to support similar functions in Australia. E2SIP is working with the National Earth and Environmental Sciences Facilities Forum which provides a common voice to government on behalf of long term science infrastructure. In addition, E2SIP, supported by programs from the National Research Infrastructure Strategy (NCRIS) such as the newly formed Australian Research Data Commons (ARDC), will convene workshops, courses, hackathons, and develop guidance and best practices tailored for the Australian community. This talk will explore how ESIP and E2SIP will work together, utilizing the collective impact framework orienting around a common shared agenda and leveraging a shared backbone structure in the U.S. and Australia. We will highlight our current understanding through a few case studies.



AGU 2018 PA23F-1035: Earth and Environment Science Information Partners: ESIP & E2SIP parallel pathways on opposite sides of the globe

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ABSTRACT

Over the last 20 years, the Earth Science Information Partners (ESIP) has built a community of practice in USA, supported by NASA, NOAA & USGS, through regular meetings and online forums to examine and develop emerging technologies.

ESIP has become a brain trust and professional home for the Earth science data and informatics community where both peer-led education & training and the co-development of conventions, practices and guidelines have helped make Earth science data more interoperable. Through connections in the ESIP network and these boundary objects, ESIP has influenced the international community.

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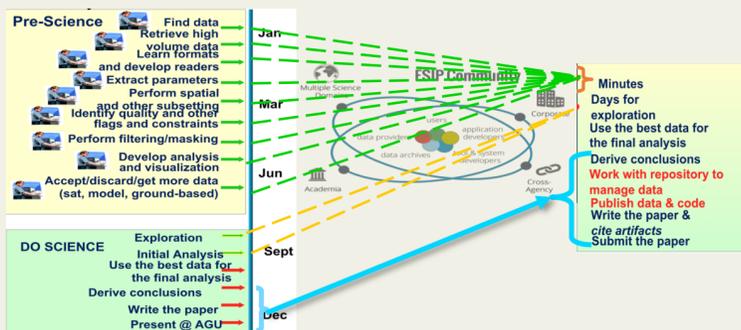
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INTRODUCTION

Addressing research problems in Earth and environmental science usually requires combining data from multiple sources. Often these challenges related to finding, accessing, interoperating and reusing data are common.

Over the last 20 years, communities of practice like the Earth Science Information Partners (ESIP) have accelerated through the use of common practices, vocabularies, interfaces and standards and recently it has been accelerated through connected communities of practice.



To be a leader in promoting the **collection, stewardship and (re)use** Of Earth science data, information and knowledge that is responsive to societal needs.

- Originally founded by NASA in 1998 (20 year history)
- Ongoing support from NASA, NOAA, USGS, Foundations
- Now 110+ organizational members
- Community management backbone organization
- Annual meetings - 2x a year at ESIP, AGU, AMS, ...
- Some federal grants to researchers tied to ESIP participation

DATA MANAGEMENT RESOURCES

- Data Citation Guidelines doi:10.7269/P34F1N1J
- Data Fair Help Desk CDPDESS.org/data-fairs
- Community Ontology Repository crr.esipfed.org
- ESIP collaboration areas develop resources that help researchers manage their data
- Data Mgmt Training Clearinghouse dmtclearinghouse.esipfed.org

Data Management Training Clearinghouse: Search, browse, and contribute to this registry of online learning resources about data management.

Data Citation Guidelines: Share and cite your data with these easy-to-use guidelines.

Community Ontology Repository: A collection of Earth-science specific semantic resources.

Data Fair Help Desk: Ask questions and learn about tools to enhance your research at professional meetings.



INNOVATION RESOURCES

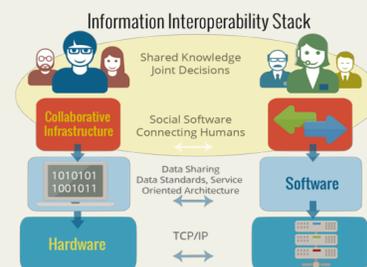
The ESIP Lab supports the development of novel, applied technologies through funding, strategic outreach, and community input.

With our ESIP Lab funding...

- "We transitioned a hydrologic model from 'research grade' to cloud-based operations for watersheds on three continents."
- "We can now produce high-quality crop maps by creating deep learning workflows in web browsers."
- "We are developing a sensor network to calibrate hydrology altimetry data for airborne and satellite applications."
- "We can now incorporate deep learning in Hurricane modeling to save lives and reduce damages."

COMMUNITY APPROACH

ESIP and E2SIP connect the community at the person and organization level in person and through virtual collaboration spaces. ESIP is in discussion with ARDC to collaborate on extending backbone services.



In-Person Collaboration: The groups hosted a series of in-person meetings from May 2017 through July 2018. The planning and implementation of these events built robust bridges between the two countries distributed data communities.

2017 Cutting edge science symposium Linking environmental data & samples
 • Canberra, May 2017 - 3 days
 • ~70 participants, 18 international, ESIP co-chair
 • Geoscience, marine, ecosystems, biodiversity, climate
 • Field trip, presentations, un-conference (breakouts), anti-conference on our challenges

E2SIP @ C3DIS - May 28, 2018
 • Pre-conference workshop - <http://www.c3dis.com/1725> - 09:00-18:00
 • ~40 in the rooms (6 international), ~5 remote (2 international)
 • ESIP on organizing committee
 • 6 NCRIS facilities + CSIRO + GA + CRCRI + 2 state govts + ...

Following E2SIP @ ESIP-US Meetings
 • We brought Lesley Wyborn to ESIP's Winter Meeting and Natasha Simons & Mingfang Wu, ARDC to ESIP's Summer Meeting to continue the exchange

Hoping to formalize with an E2SIP representative on ESIP's Board

Virtual Collaboration: ESIP supports collaboration areas with telecon services, wiki space

How to Start an ESIP Cluster... they're like workshops, only instant and free.

- Step 1: Have an idea? Ping ESIP community (via mailing list or Slack). Get feedback.
- Step 2: Contact ESIP Vice President with Cluster name - get approved.
- Step 3: Get access to ESIP resources [Slack, List serv, wiki, Go To Meeting, GitHub, AWS].
- Step 4: Schedule first telecon and get to work!

Collaboration Areas

Committees: Data Stewardship, Education, Information Technology and Interoperability, Semantic Technology

Cluster: Agriculture & Climate, CLEAN - Climate Library, Cloud Computing, Data Management Training, Disaster Lifecycle, Discovery, Documentation, Drones, Earth Science Data Analytics, Energy & Climate, Environmental, Info Quality, Science Software Creation, Sustainability Data Migration, Data Models, IM Code Registry, Web Services

ARDC and ESIP are hosting joint telecons

E2SIP Cluster & ARDC/ESIP Joint Telecons

Next Joint Webinar: March 2019 - Information Quality

RESULTS



- Founded in 2018 after a pre-workshop meeting w/C3DIS
- NCRIS facilities - ALA, AuScope, IMOS, TERN, NCI, ARDC
- Cross-disciplinary institutions - CSIRO)
- Govt participation, not grants - DoEE, GA, BoM
- Smaller community - Know each other
- ARDC provides backbone organization

The newly formed E2SIP Community formed at the pre-workshop at C3DIS Meeting. The group was enthusiastic and had ideas for what should be considered for E2SIP several next steps

Handwritten notes: "Tangible outcomes - linking experiments, lots of learning, applicability beyond Earth/Env, imp't to keep up w/global, pre-workshop to chat their, Power of bringing together"

ESIP member, IMOS, in Australia are having ESIP-like meetings

ESIP and ARDC are working together on Data Management Training & Enabling FAIR Data

CONCLUSIONS

ESIP's backbone infrastructure and combined US/Australian community interest has led to an exciting collaboration. It is extremely positive that the initiatives have been picked up by additional community members beyond the original core collaborators and we look forward to finding more ways to connect across time-zones and topics in the coming year.