Information Quality and The National Climate Assessment

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Overview

- The National Climate Assessment (NCA)
- Information Quality
- Challenges
- NCA Tools and Practices

The National Climate Assessment

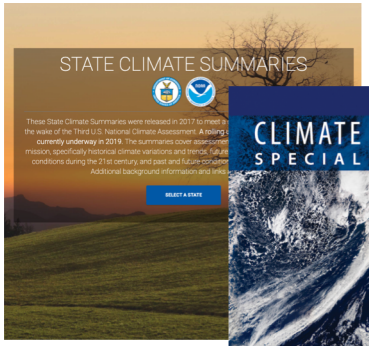
- Global Change Research Act of 1990
- Requires a state-of-the-science assessment of climate impacts and trends for U.S. regions and sectors every four years
- Aims to inform decision and policy-making stakeholders
- Part of a Sustained Assessment process

NCA1
2000

NCA2
2009

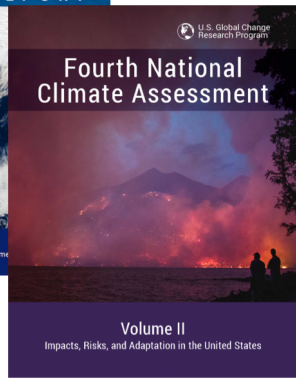
NCA3
2014

CHA
2016



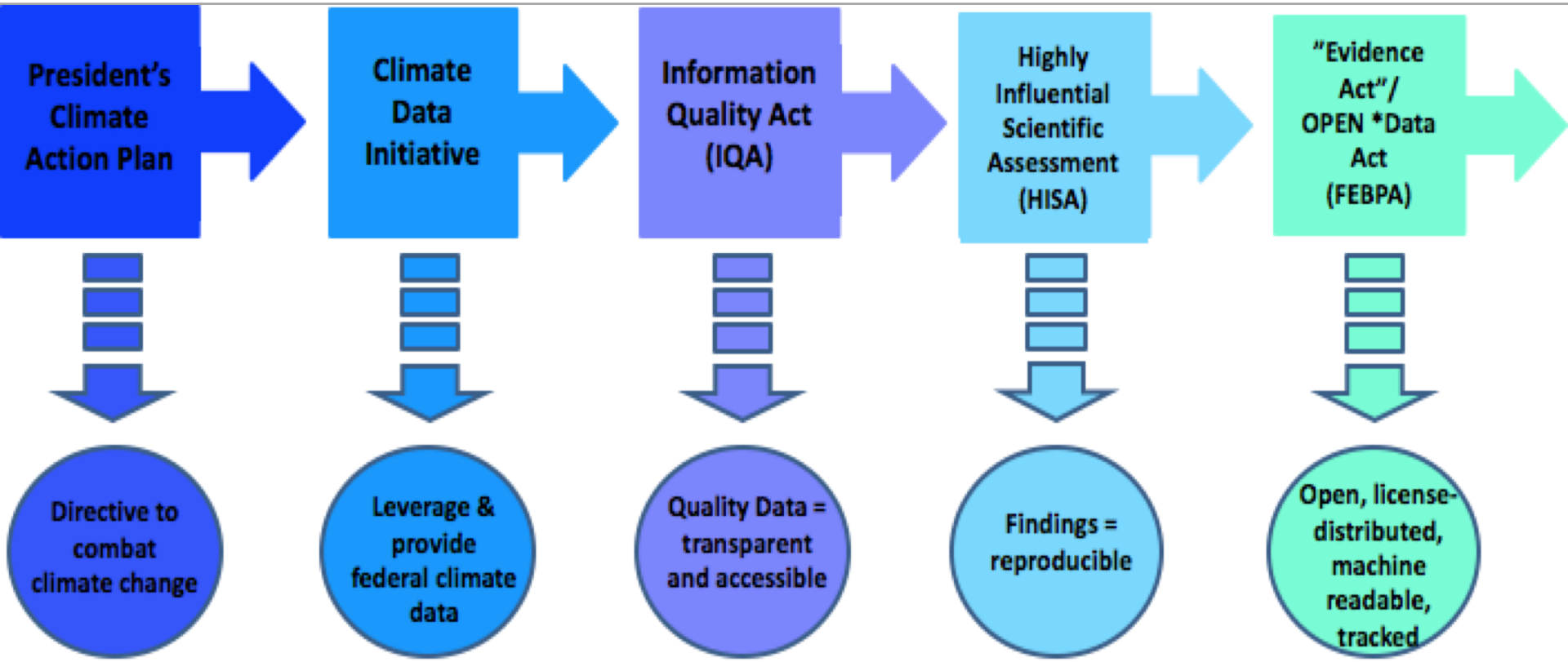
State Climate
Summaries 2017

NCA4, Vol. I
2017

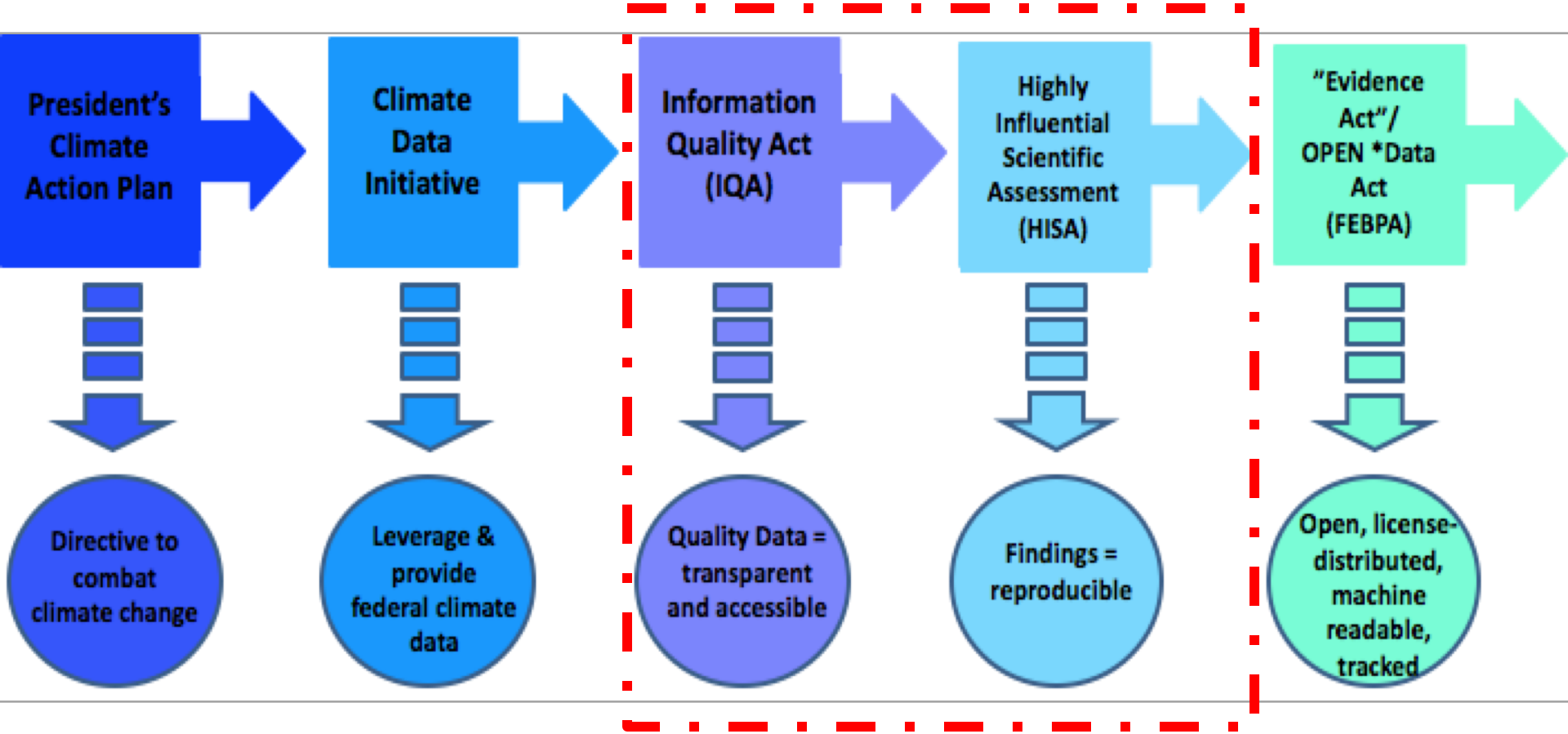


NCA4, Vol. II
2018

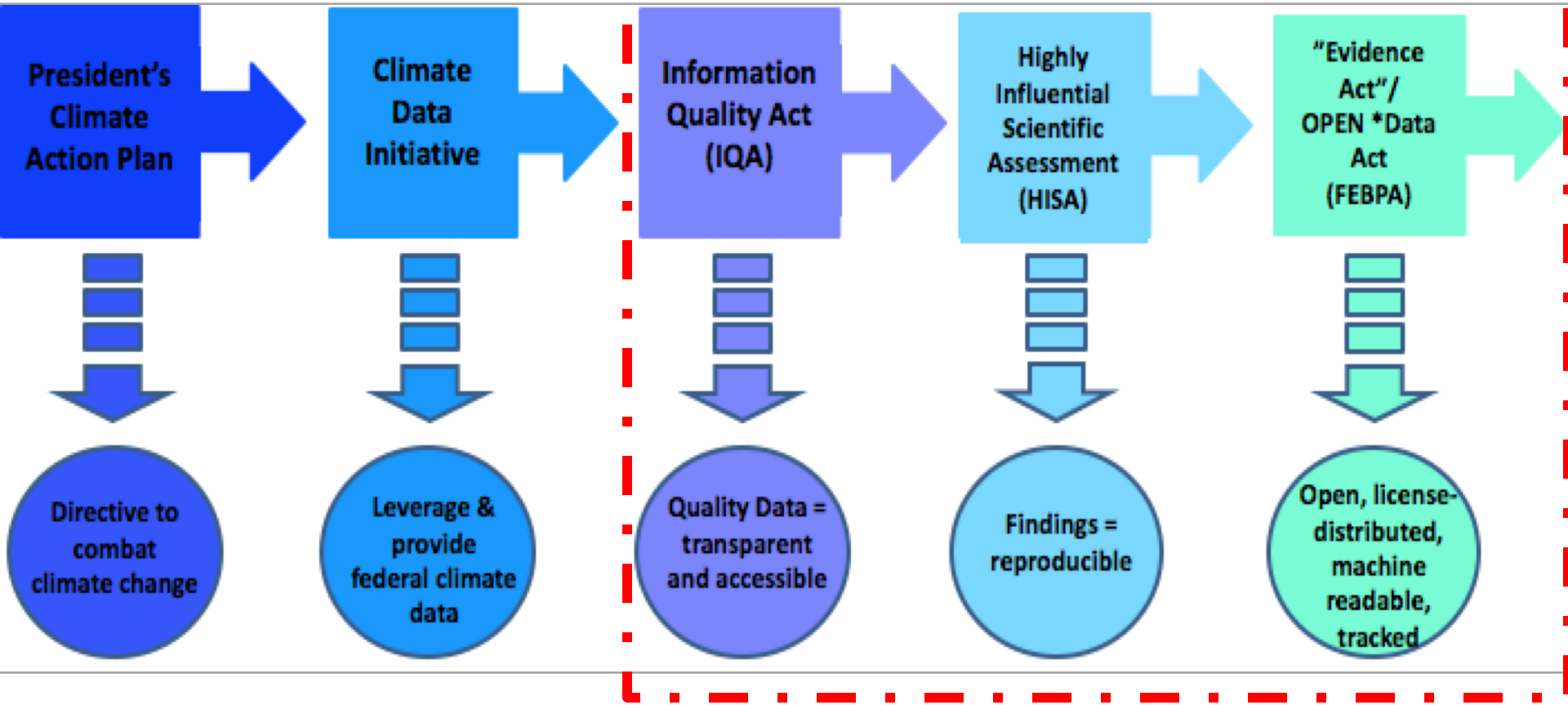
Information Quality



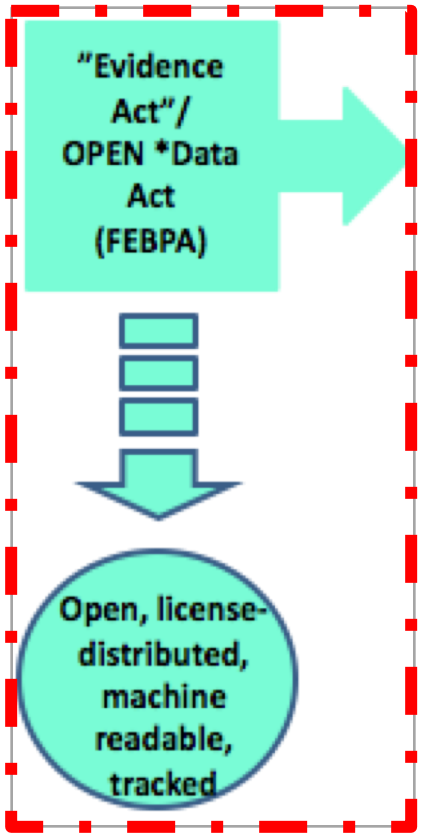
Information Quality

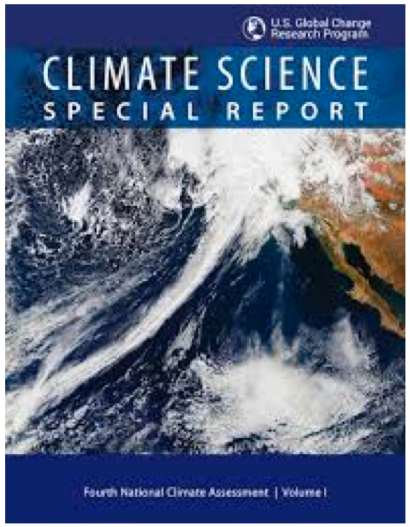


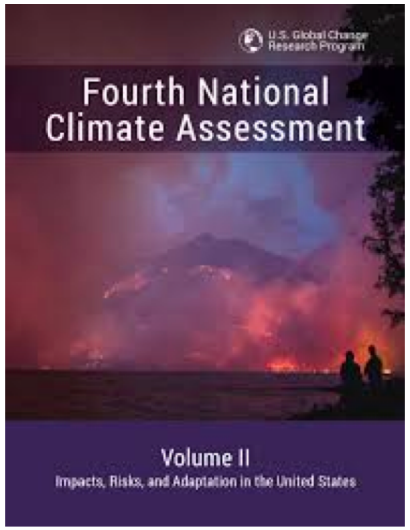
Information Quality



Challenges



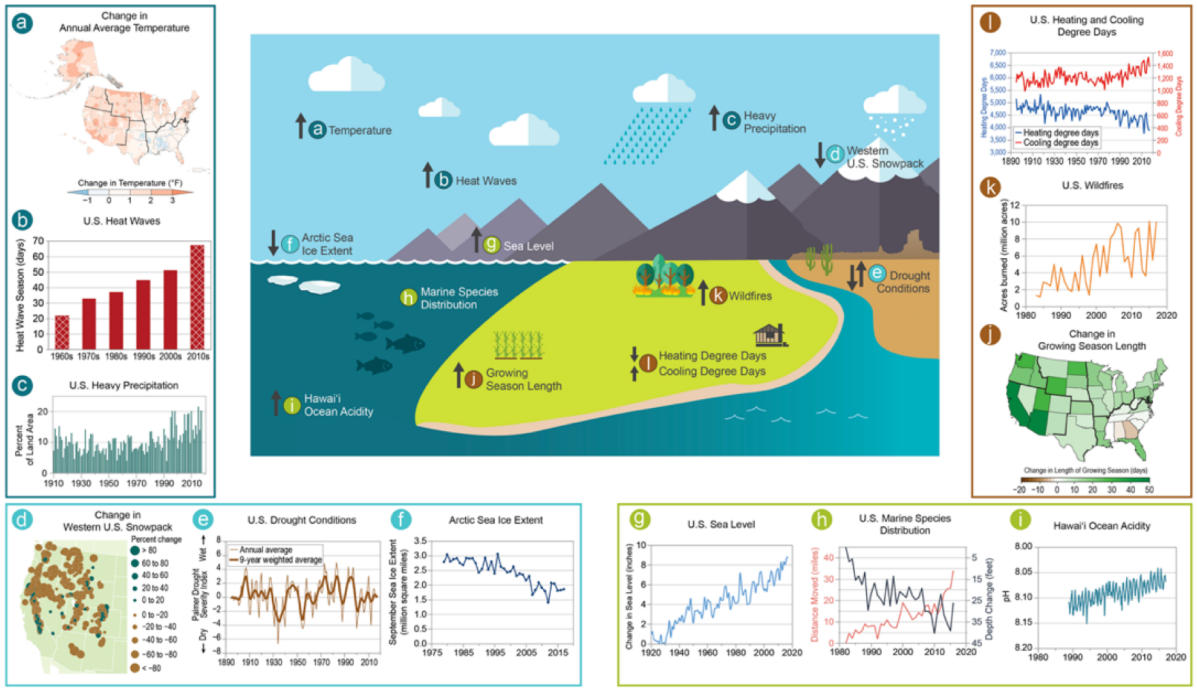




- 1970 pages
- 975 figure panels
  - 152 datasets
  - Sources
  - Methods
  - Tools
- 350+ authors
  - 15 federal departments
  - 5 national laboratories
  - 20 research institutions and non-profits
  - 3 government contract companies
  - 28 local (city, state, and tribal) government organizations
  - 65 universities

**Note that several non-federal organizations were not U.S. institutions*

Challenges



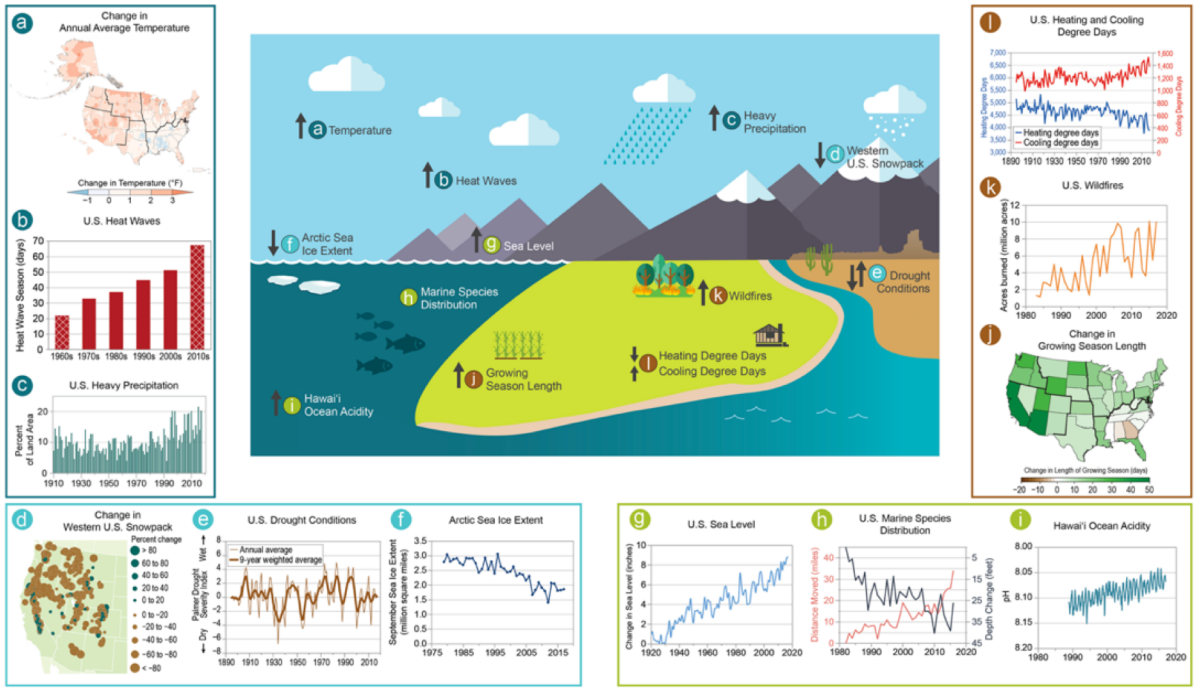
Documentation Standard:

- Transparency
- Accessibility
- Reproducibility

13 figure panels:

- Source(s)
- Copyright
- Dataset(s)
- Analysis Methods
- Visualization Methods
- Software
- Hardware
- File(s)

Challenges



Documentation Standard:

- ✅ Transparency
- ✅ Accessibility
- ✅ Reproducibility
- ☑ Licensing
- ☑ Software Code

13 figure panels:

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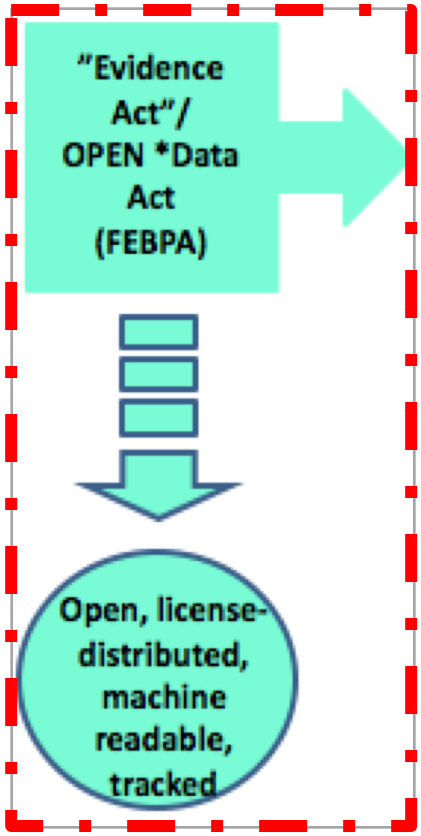
NCA Tools and Practices



Federal Government/ Open Domain Data & Software

- ✓ Document source metadata using current tools and processes
- ✓ Identify associated licenses as defined by agency/organization

Non-Federal Government/ Closed Domain Data &/or Software

- ✓ Document source metadata using current tools and processes
- ✓ Work with a team from NOAA General Counsel to determine Intellectual Property and Copyright Ownership/Permission

NCA Tools and Practices

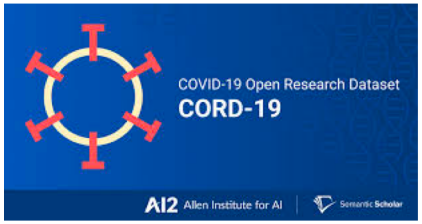
- All tied to the *Federal Data Strategy:*
  - Designed to help all agencies leverage *data as a strategic asset*
  - Guides the Federal Government in practicing ethical governance, conscious design, and learning culture
- NOAA's Data Strategy is to promote a culture that values *data as an asset* by "sharing data as openly and as widely as possible to promote utilization of NOAA data"

NCA Tools and Practices

- Data as an asset extends beyond the Federal Government
- Scientific research and academic publishing have been heavily influenced by the shift to increasingly internet-centric (i.e., digital)
- We no longer have to physically travel to the library to access research

NCA Tools and Practices

- System has not historically incentivized open practices[1]
  - 2009: ~4,800 open access journals
  - 2019: 12,500 open access journals
  - Incentives #1 and #2: Access and competitive edge
- *Transparency, openness, and reproducibility are readily recognized as vital features of science*
- OSTP: Changes needed to better share COVID data[2]
  - COVID-19 Open Research Dataset (CORD-10)
  - 2,200 Papers submitted in a single week



1 Björk, Bo-Christer (2011). "A Study of Innovative Features in Scholarly Open Access Journals". *Journal of Medical Internet Research*. **13** (4): e115. doi:10.2196/jmir.1802. PMC 3278101. PMID 22173122.
2Rockwell, M., 2020: OSTP: Changes needed to better share COVID data. FCW. The Business Federal Technology, 8 July 2020, [https://fcw.com/articles/2020/07/08/rockwell-ostp-covid-data-sharing.aspx]

NCA Tools and Practices

Source: Medium.com, Navy Design

"You can have data without information, but you cannot have information without data." – *Daniel Keys Moran*

Summary

- The NCA is mandated to ensure its data assets are transparent, accessible, reproducible, and open
- Historically, the NCA has maintained the latest opinion that data are a strategic asset
- Thorough and complete documentation will continue to be the NCA standard
- Regardless of motivation, quality information is rooted in the concepts of innovation and collaboration

Thank You

United States
Global Change
Research Program