

The Hawai'i Climate Data Portal



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A Team Effort.....



Communication Specialist

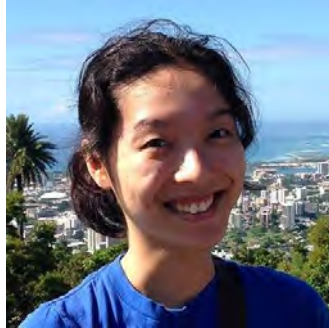
Climate Scientists



Tom Giambelluca



Matt Lucas



Keri Kodama



Ryan Longman



Abby Frazier



Amy Schriber

Data Scientists



Gwen Jacobs



Sean Cleveland



Jared Mclean



Michael Dodge

Social Scientists



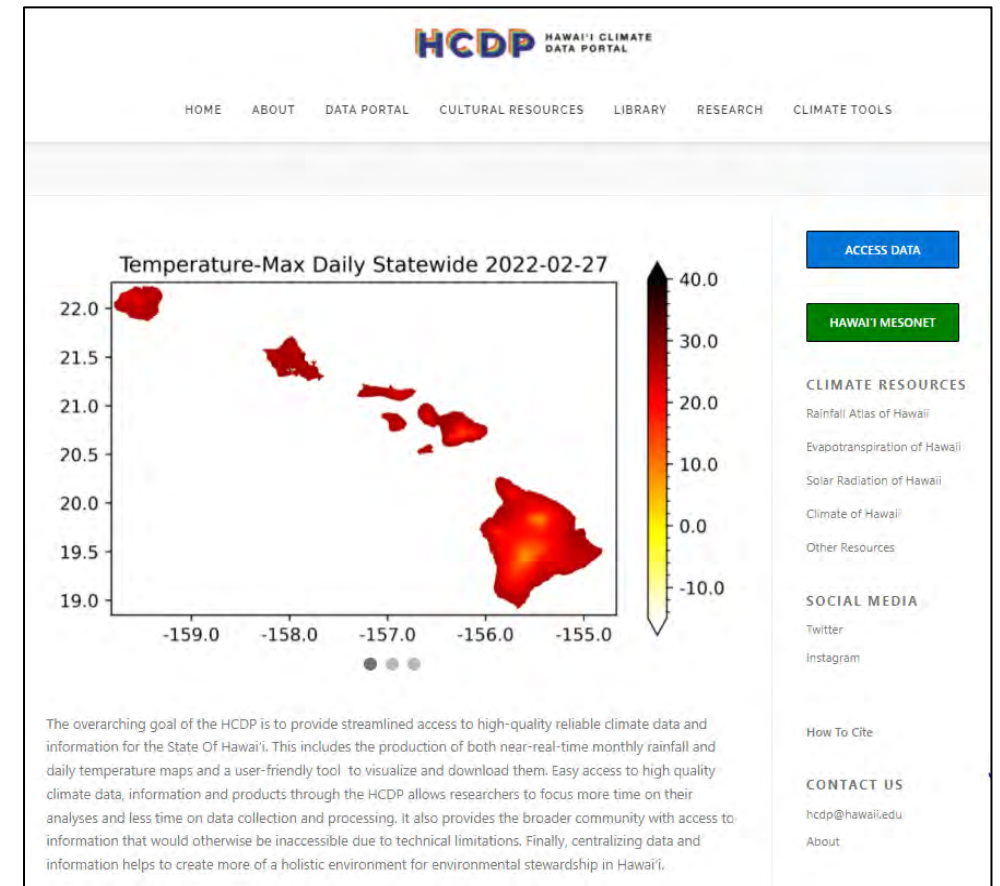
Katie Kamelamela

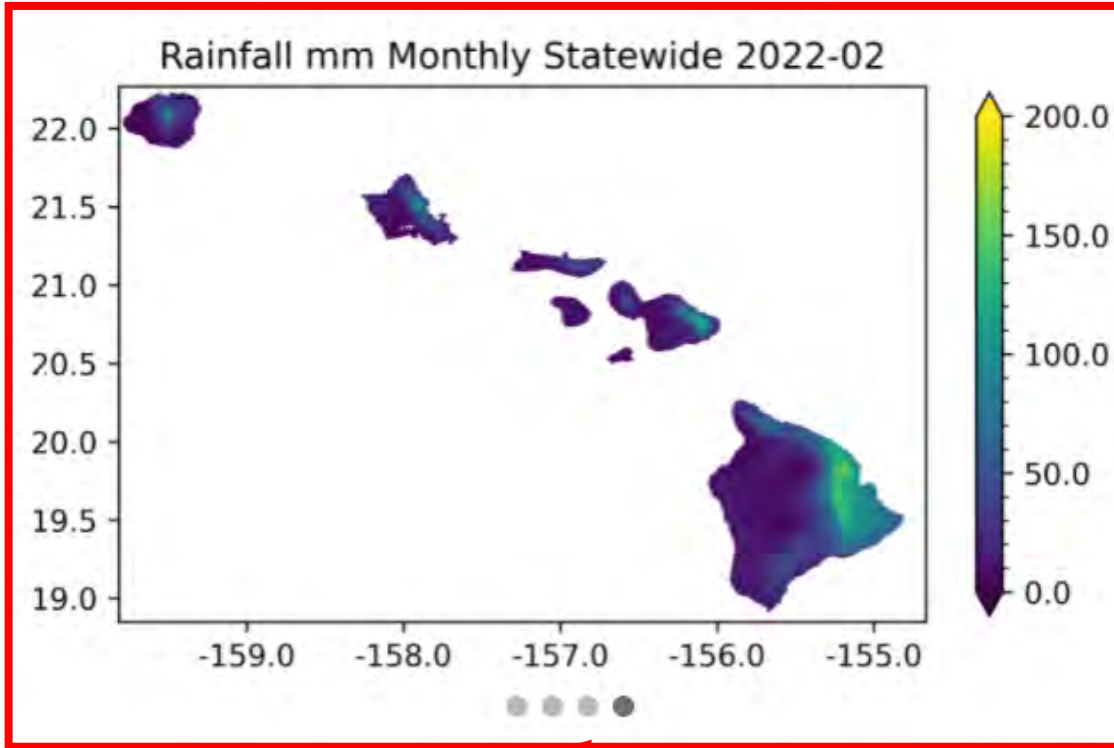


Noelani Punawai

What is the **HCDP** ?

- **A Place** to get climate data
- **A Tool** that allows us to explore the past, monitor the present, and project the future
- **A Portal** to other places and data sources
- **An Opportunity** to learn, to education, to network, and to share





The overarching goal of the HCDP is to provide streamlined access to high-quality reliable climate data and information for the State Of Hawai'i. This includes the production of both near-real-time monthly rainfall and daily temperature maps and a user-friendly tool to visualize and download them. Easy access to high quality climate data, information and products through the HCDP allows researchers to focus more time on their analyses and less time on data collection and processing. It also provides the broader community with access to information that would otherwise be inaccessible due to technical limitations. Finally, centralizing data and information helps to create more of a holistic environment for environmental stewardship in Hawai'i.

ACCESS DATA

HAWAII MESONET

CLIMATE RESOURCES

- Rainfall Atlas of Hawaii
- Evapotranspiration of Hawaii
- Solar Radiation of Hawaii
- Climate of Hawaii
- Other Resources

SOCIAL MEDIA

- Twitter
- Instagram

How To Cite

CONTACT US

hcdp@hawaii.edu

Download maps & data

Mesonet Site

Easy access to other climate resources

hiclimateportal

Latest Rainfall & Temperature maps



- *Meet the Team*
- *History about the HCDP*
- *History of Rainfall Mapping*
- *History of Climate Monitoring*
- *Acknowledgements: to a long list of people who have contributed to climate monitoring and data dissemination efforts in Hawai'i.*



PUBLICATIONS SEARCH

BROWSE PUBLICATIONS

Rainfall

SEARCH BY: ITEM TAG

Bai, X. (2017). *Hawaiian Winter Rainfall Variability During Central Pacific (CP) and Eastern Pacific (EP) El Niño Events* [MS Thesis]. University of Hawai'i at Mānoa. (CITE) (DOWNLOAD)

Barbosa, J. M., & Asner, G. P. (2017). Effects of long-term rainfall decline on the structure and functioning of Hawaiian forests. *Environmental Research Letters*, 12(9), 094002. <https://doi.org/10.1088/1748-9326/aa7ee4> (CITE) (DOWNLOAD)

Bassiouni, M., Vogel, R. M., & Archfield, S. A. (2016). Panel regressions to estimate low-flow response to rainfall variability in ungaged basins. *Water Resources Research*, 52(12), 9470–9494. <https://doi.org/10.1002/2016WR018718> (CITE) (DOWNLOAD)

Chu, P.-S. (1995). Hawaii Rainfall Anomalies and El Niño. *Journal of Climate*, 8(6), 1697–1703. [https://doi.org/10.1175/1520-0442\(1995\)008<1697:HRAAEN>2.0.CO;2](https://doi.org/10.1175/1520-0442(1995)008<1697:HRAAEN>2.0.CO;2) (CITE) (DOWNLOAD)

Chu, P.-S., & Chen, H. (2005). Interannual and Interdecadal Rainfall Variations in the Hawaiian Islands. *Journal of Climate*, 18(22), 4796–4813. <https://doi.org/10.1175/JCLI3578.1> (CITE) (DOWNLOAD)

Chu, P.-S., Zhao, X., Ruan, Y., & Grubbs, M. (2009). Extreme Rainfall Events in the Hawaiian Islands. *Journal of Applied Meteorology and Climatology*, 48(3), 502–516. <https://doi.org/10.1175/2008JAMC1829.1> (CITE) (DOWNLOAD)

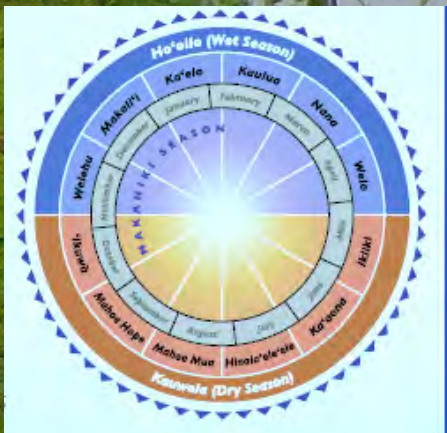
- *Over 400 peer-reviewed journal articles and technical reports (climate & ecology of Hawai'i)*
- *31-years of National Weather Service monthly rainfall summaries*
- *Searchable index, Author last name or key words.*
- *Open-source PDFs available for download.*
- *Our you can email us.*
 - HCDP@hawaii.edu



Nā Kaulana



- Indigenous Perspectives
- Contemporary Research
- Climate glossary
- Archival Newspaper
- Moon calendar
- Publications
- Education Resources




Nā Kaulana Mahina

- *Highlighting past and ongoing research projects*
- *Providing links to external resources*

RESEARCH HIGHLIGHTS


Search Search

Is your research missing? Email hcdp@hawaii.edu



Developing a real time tool to identify the likelihood of avian malaria insitu development to help the targeting of mosquito control efforts

Avian malaria poses the threat of extinction to multiple unique Hawaiian forest bird species. With mosquito vector control as one of the likely tools needed to prevent such extinctions, a ...



Understanding the environmental factors determining the spatial patterns of malaria prevalence in native forest birds across Hawaii

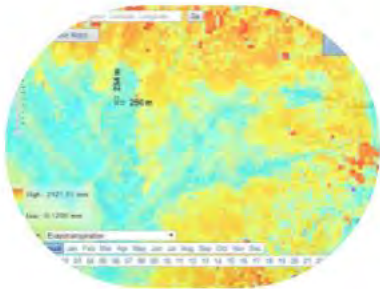
The clearly identified link between temperature and avian malaria across the landscape threatens several unique native Hawaiian birds with extinction as the climate warms. With the new climatic datasets provided ...





CLIMATE TOOLS

Climate of Hawaii



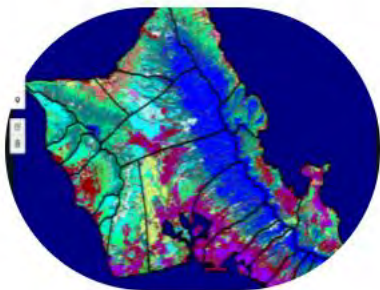
Rainfall Atlas of Hawaii



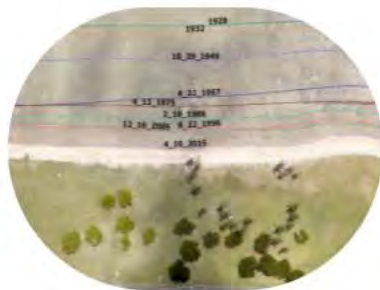
Sea Level Rise Viewer



Hawaii Groundwater Recharge Tool



Coastal Erosion



Avian Malaria-Risk & Warning
(Coming soon)

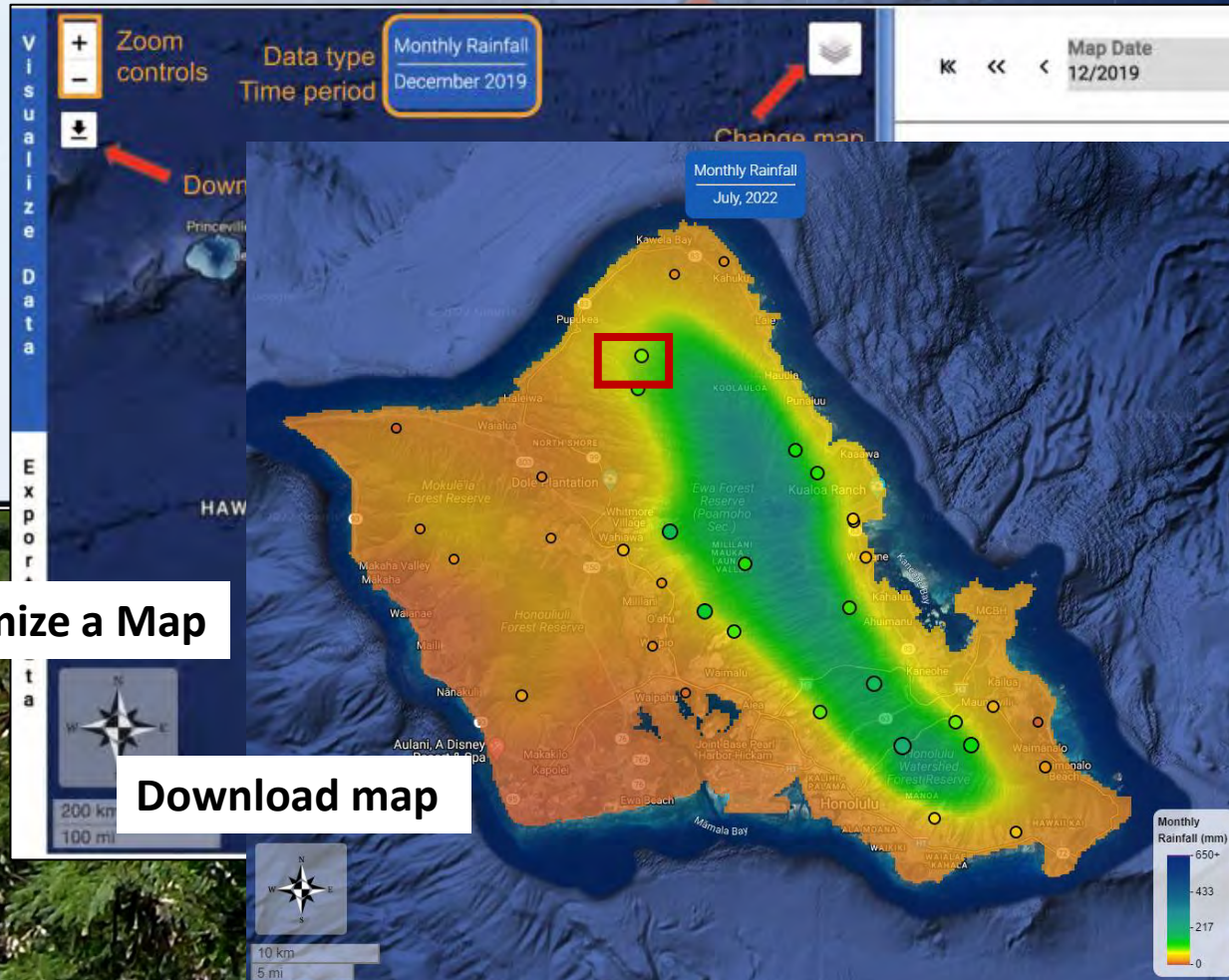


- *Rainfall Atlas of Hawai'i*
- *Climate of Hawai'i*
- *Sea-Level Rise Viewer*
- *Coastal Erosion*
- *USGS Groundwater Recharge Tool*
- *Fire Warning and Risk*
- *Flood Warning and Risk*
- *Drought Warning and Risk*
- *Avian Malaria Warning and Risk*



Visualize Data

Visualize available climate data in the portal.



Customize a Map

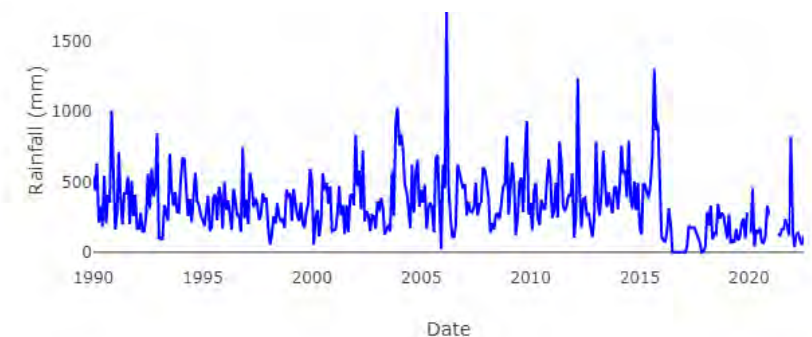
Download map

Name	Station ID	Island
PunaluuRainGageatlt	884.4	O'ahu
SCHOFIELD BARRACKS	858	O'ahu
Poamoho Exp Farm	855.3	O'ahu
DILLINGHAM	843.7	O'ahu
MakahaRainGage	842.1	O'ahu
Waihee Pump	839.8	O'ahu
WAIHAOLE STREAM NEAR KAHALUU 2N	837.12	O'ahu
Palisades	835.2	O'ahu
Waiawa CF	834.13	O'ahu
SCHOFIELD EAST	828	O'ahu
Waipio	824.2	O'ahu
Milliani	820.6	O'ahu
WHEELER ARMY AIR FIELD 810.1	810.1	O'ahu
WAIANA'E VALLEY	803.2	O'ahu
Waimanalo Nonokio	795.3	O'ahu
BELLOWS AFS AT WAIMANALO	793.2	O'ahu

Station Metadata	
SKN (Station ID)	884.4
Name	PunaluuRainGageatlt
Observer	USGS
Network	USGS
Island	O'ahu
Elevation (m)	73.15
Latitude	21.56
Longitude	-157.9
NWS ID	PNSH1
NESDIS ID	DD989652
Value	120.39

Get Station Meta Data

Adjustable time series plots Daily or monthly





Island	Elevation	Latitude	Longitude	4/1/2019	4/2/2019	4/3/2019	4/4/2019	4/5/2019	4/6/2019
HI	547.0	19.108	-155.789	2	0	0	0	0	0.5

Export Data

Generate customized packages of data to export from the portal.

Select the type of data you would like to export from the options below then click "Add Files"

Dataset: Rainfall **Select dataset**

Time Period: Monthly **Select time period**

Date Range: Start Date: 01/1990, End Date: 03/2022 **Select date range**

Files: Rainfall Map **Check boxes to select files** Filetype: tif
 Standard Error Map Filetype: tif
 Anomaly Map Filetype: tif

Add Files



Data are also Available through Near Real Time API Access

Gridded Products (250 m)

Available Now

- *102-Years of Monthly Rainfall Maps (1920 – NOW) – 1,226 maps*
- *32-Years of Monthly & Daily Temperature (Max, Mean, Min) Maps (1990 – NOW) – < 35,000 maps*
- *Future Climate Projections of Rainfall and Temperature (2-Methods)*

Coming Soon

- *Daily Rainfall maps*
- *Bi-Monthly NDVI (Vegetation) – maps*

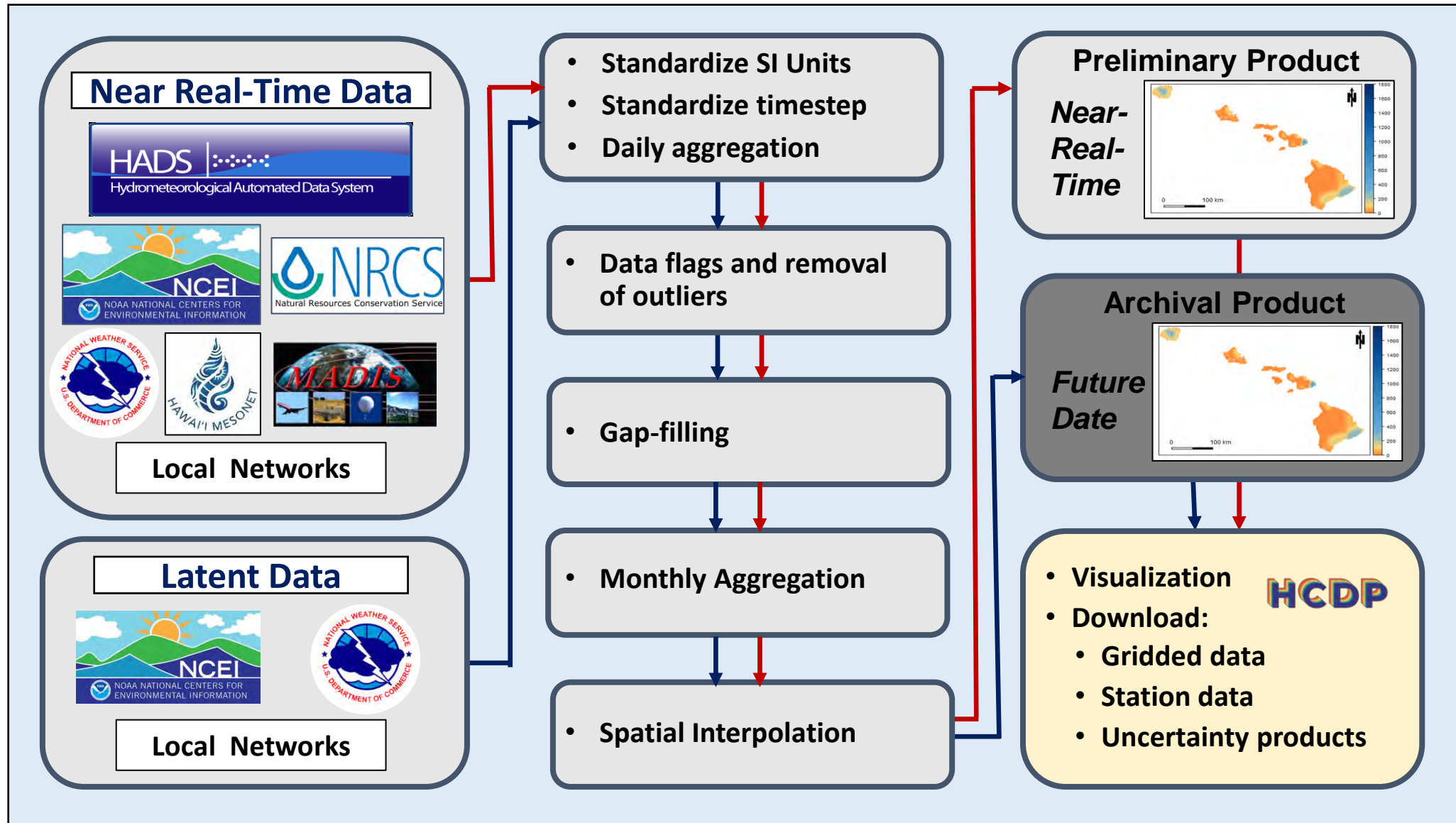
In the works

- *Relative humidity, winds speed, solar radiation maps*
- *Fractional land cover maps*

Derived Products

- Fire risk & Warning
- Fire forecasts
- Drought risk
- Flood risk
- Energy balance
- Water balance

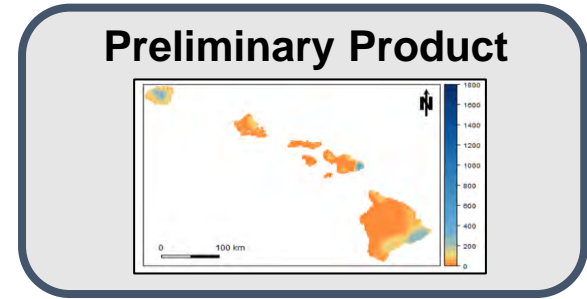
Monthly Rainfall Workflow



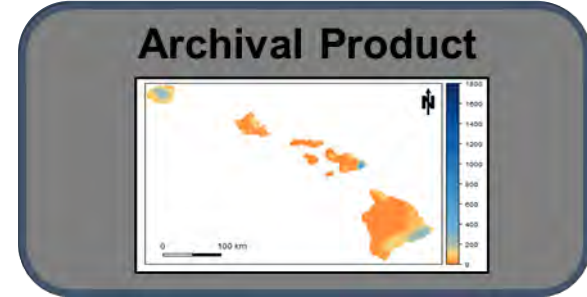
Data Versions

- Data availability is dynamic!
- Errors arise!
- Maps can always be better!
- You have to draw a line!

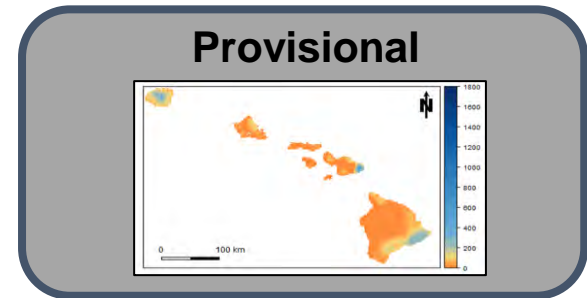
**Near-Real-Time
< 1 Day**



30-Days



180-Days



> 180- Days

July 2022 Rainfall Map

Produced on August 1st

What would this take.....

1. Need to get the data

- Only 2-people in the state who know what data sources are available.
- Only 1-person who knows how to access them all.

2. Process the data (QaQc)

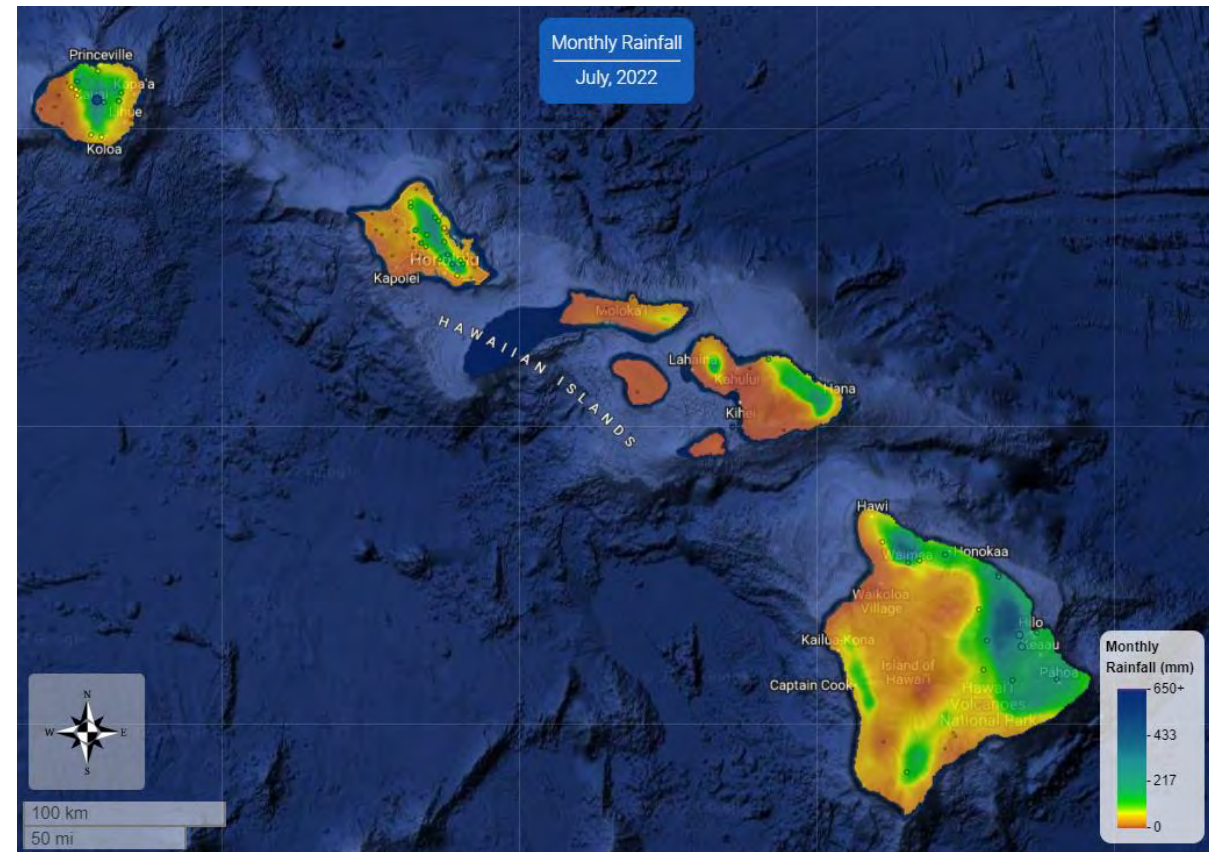
- Handful of people

3. Interpolate the data

- A handful of people could to do this

4. Make a map

- Need Skills (GIS or related)



Where are we headed With the HCDP?

1. This is the start.....

2. Near-real-time decision support

- Fire Risk and Warning
- Flood Risk and Warning
- Drought Risk and Warning
- Avian Malaria Risk and Warning

3. Continue to build the Portal

- Improve on the graphics and functionality.
- Section for Pacific data and information.

4. Develop Curriculum

- Range of opportunities

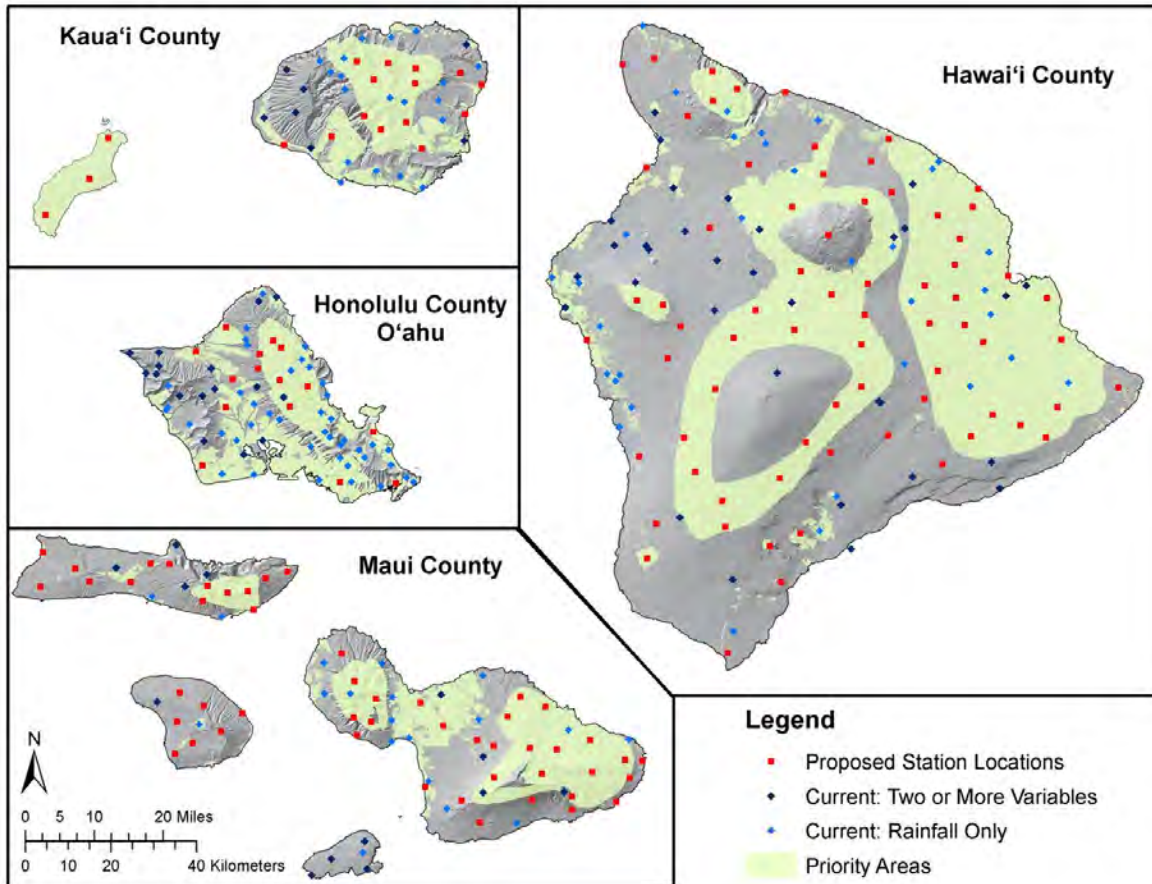


Pacific Islands Development Program

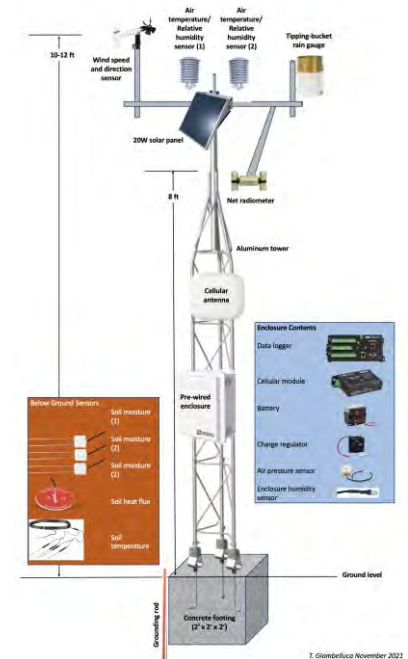




HAWAI'I MESONET



Coming Soon: 95 New Stations

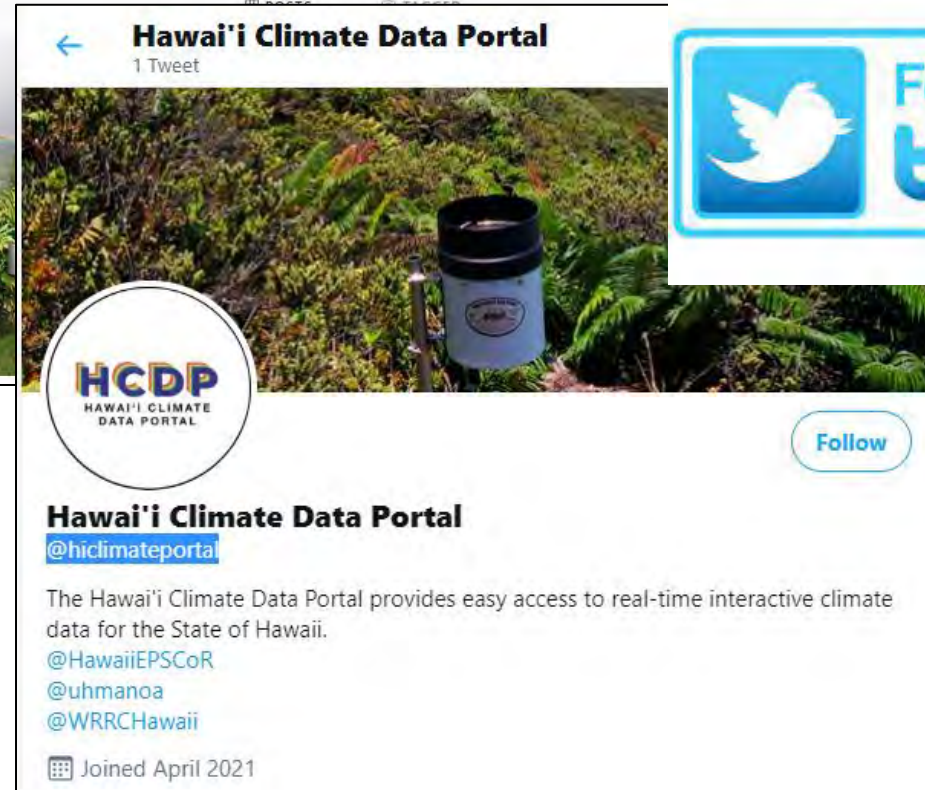
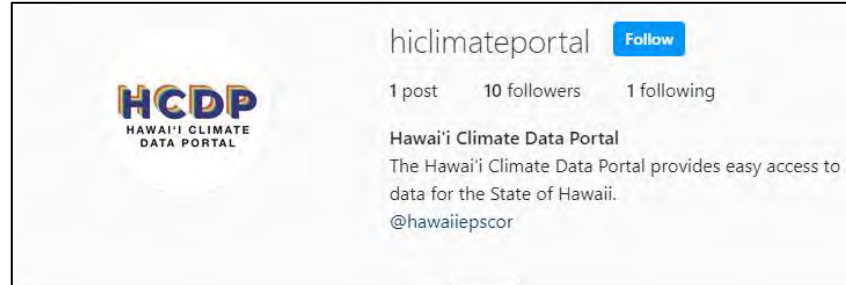


Social Media

hiclimateportal

Weekly Post (Thursday)

- New Products
- Current Weather
- Future Projections
- Historical trends
- New Research
- Cultural Knowledge
- Ongoing projects





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Mahalo!

