

NASA's DEVELOP Program



EARTH SCIENCE
APPLIED SCIENCES



NASA Earth Science

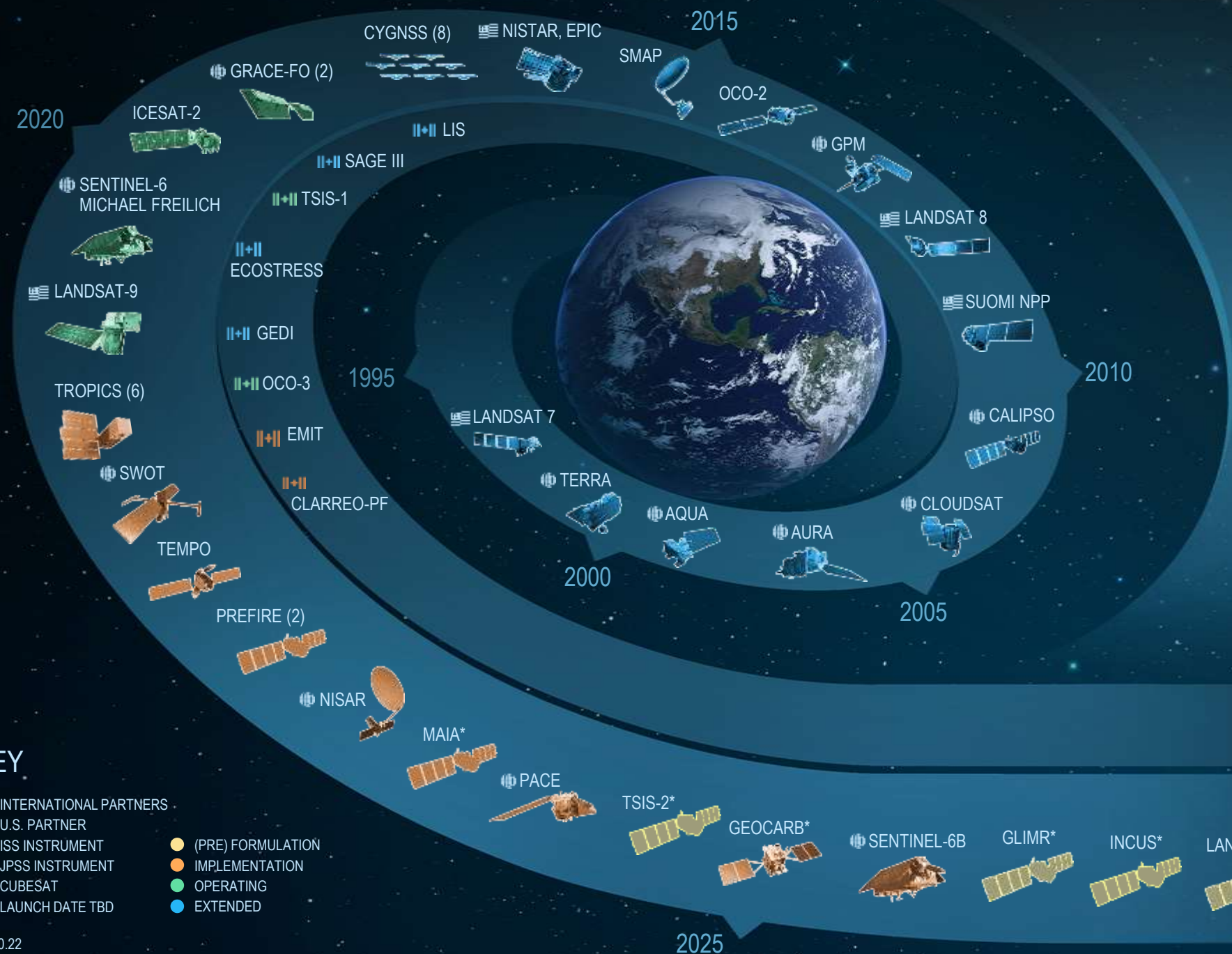
Advancing understanding of the Earth and developing technologies to improve the quality of life on our home planet.

Earth is a complex, dynamic system we do not yet fully understand. The purpose of NASA's Earth science program is to develop a scientific understanding of Earth's system and its response to natural and human-induced changes, and to improve prediction of climate, weather, and natural hazards.





EARTH FLEET



INVEST/CUBESATS

- CSIM-FD 2023
- HARP 2022
- CIRIS 2023
- CTIM* 2022
- HYTI* 2022
- SNOOPI* 2022
- NACHOS* 2022
- NACHOS2* 2022

JPSS INSTRUMENTS

- OMPS-LIMB 2022
- LIBERA 2027

ISS INSTRUMENTS

MISSIONS

KEY

- INTERNATIONAL PARTNERS
- U.S. PARTNER
- ISS INSTRUMENT
- JPSS INSTRUMENT
- CUBESAT
- LAUNCH DATE TBD
- (PRE) FORMULATION
- IMPLEMENTATION
- OPERATING
- EXTENDED



NASA Applied Sciences



Discovering Innovative & Practical Applications of NASA Earth Science

- ▶ **Partner** with public and private organizations
- ▶ **Discover** innovative NASA Earth science applications
- ▶ **Support** environmental decision-making activities
- ▶ **Demonstrate** practical benefits of NASA Earth science
- ▶ **Help** improve the quality of life and strengthen the economy

Thematic Application Areas

Agriculture	Disasters	Ecological Forecasting	Water Resources	Health & Air Quality
Urban Development	Energy	Transportation & Infrastructure	Wildfires	Climate

New in 2022

Capacity Building





What is DEVELOP?



Measurements & Predictions



Communities

DEVELOP addresses environmental and public policy issues through interdisciplinary feasibility projects that apply the lens of NASA Earth observations to community concerns around the globe.

DEVELOP bridges the gap between NASA Earth Science and society, building capacity in both its participants and end-user organizations to better prepare them to handle the environmental challenges that face society.

*DEVELOP is a dual-capacity building program:
Partners & Participants*

Who Participates in DEVELOP?

Participants



Recent Graduates



Military Personnel



Students



Transitioning Professionals



Advisors



NASA Scientists



University Professors



Partner Organizations



Decision Makers



State & Local Govt.



Federal Agencies



NGOs (non-profit and for-profit)



International organizations

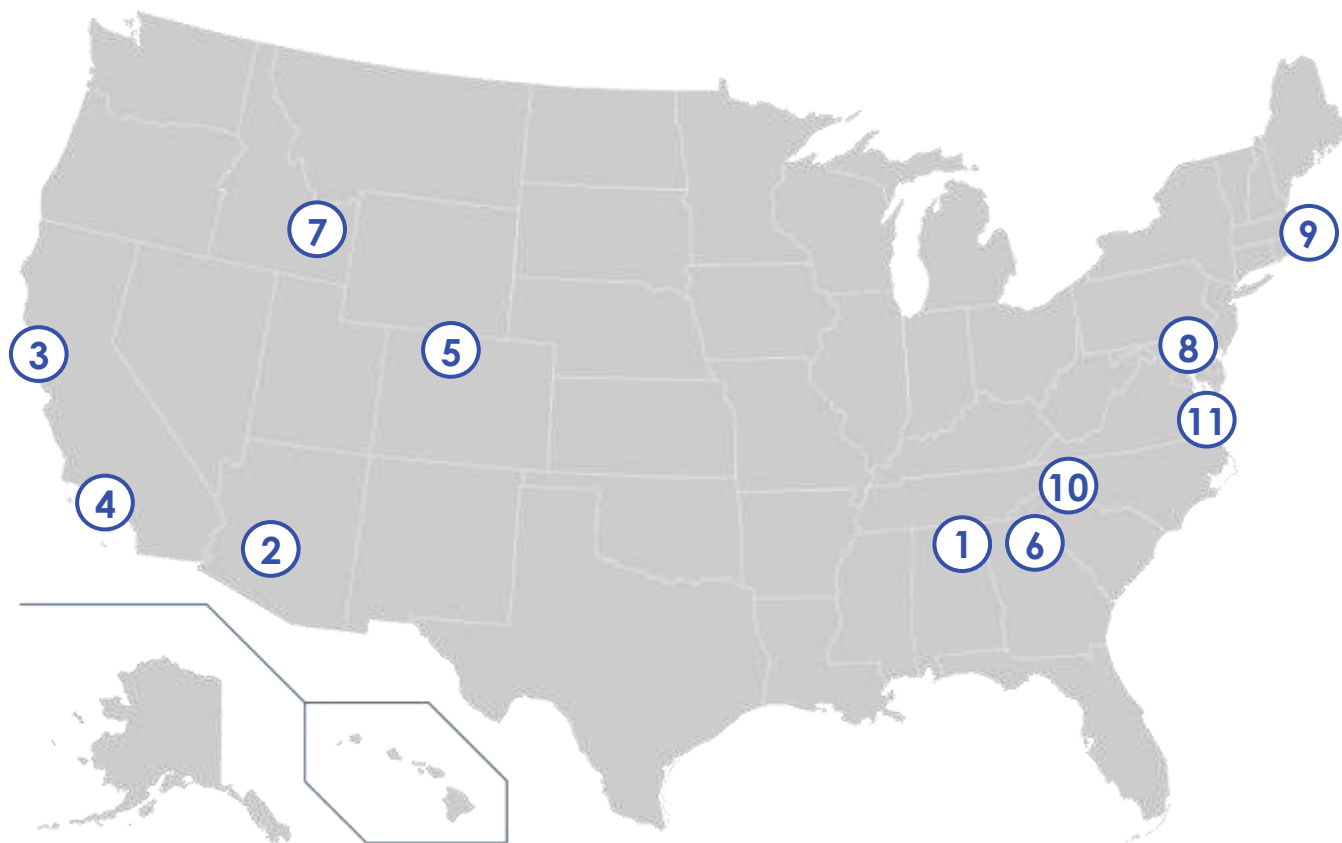


Where is DEVELOP?

Locations

- ① Alabama – Marshall (Huntsville, AL)
- ② Arizona – Tempe (Tempe, AZ)
- ③ California – Ames (Moffett Field, CA)
- ④ California – JPL (Pasadena, CA)
- ⑤ Colorado – Fort Collins (Fort Collins, CO)
- ⑥ Georgia – Athens (Athens, GA)
- ⑦ Idaho – Pocatello (Pocatello, ID)
- ⑧ Maryland – Goddard (Greenbelt, MD)
- ⑨ Massachusetts – Boston (Boston, MA)
- ⑩ North Carolina – NCEI (Asheville, NC)
- ⑪ Virginia – Langley (Hampton, VA)

The DEVELOP summer 2022 term will offer both in-person and virtual opportunities. Please pay attention to the type of opportunity in the parentheses after the location on the application.



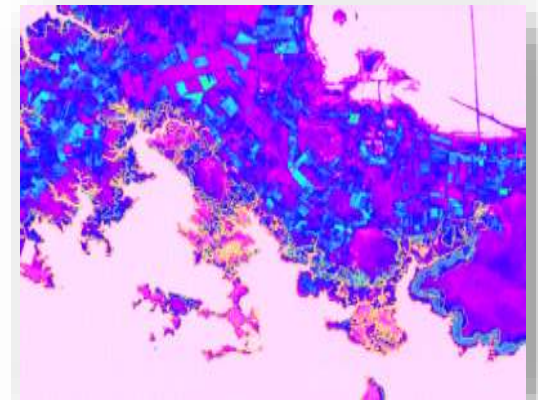
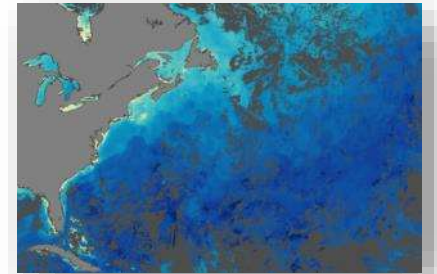


DEVELOP Project Characteristics



55-65 projects take place each year – at their core they share these characteristics:

- ▶ Highlight the applications and capabilities of **NASA Earth observations**
- ▶ Address **community concerns** relating to decision-making for real-world environmental issues
- ▶ Partner with organizations who can benefit from using NASA Earth observations to **enhance decision-making** by providing decision support tools
- ▶ Align with at least one of the NASA Applied Sciences Program's thematic **Application Areas**
- ▶ Research is conducted by **interdisciplinary teams** under the scientific guidance of DEVELOP Science Advisors and Mentors from NASA and partner organizations
- ▶ Create a comprehensive set of **deliverables**



DEVELOP

2022 SPRING PORTFOLIO

ENGAGEMENT:

88



PARTICIPANTS

43



PARTNER ORGS

22



PROJECTS

TERM I: 19

TERM II: 3

TERM III: 0

IMPACT:

24

U.S. STATES

1

U.S. TERRITORY

6

COUNTRIES




DISASTERS 

WILDFIRES 

AGRICULTURE 

ENERGY 

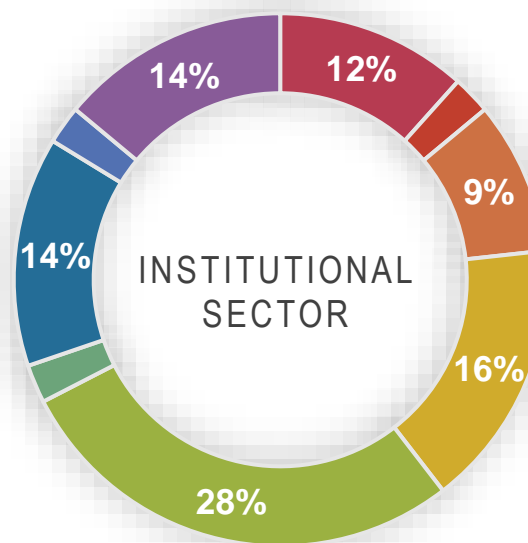
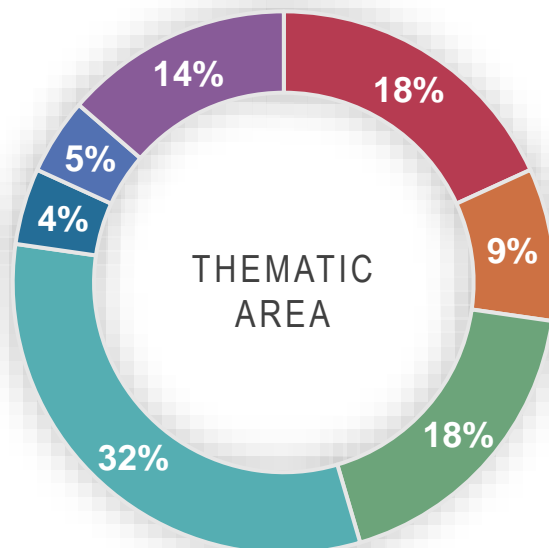
ECOLOGICAL FORECASTING 

WATER RESOURCES 

URBAN DEVELOPMENT 

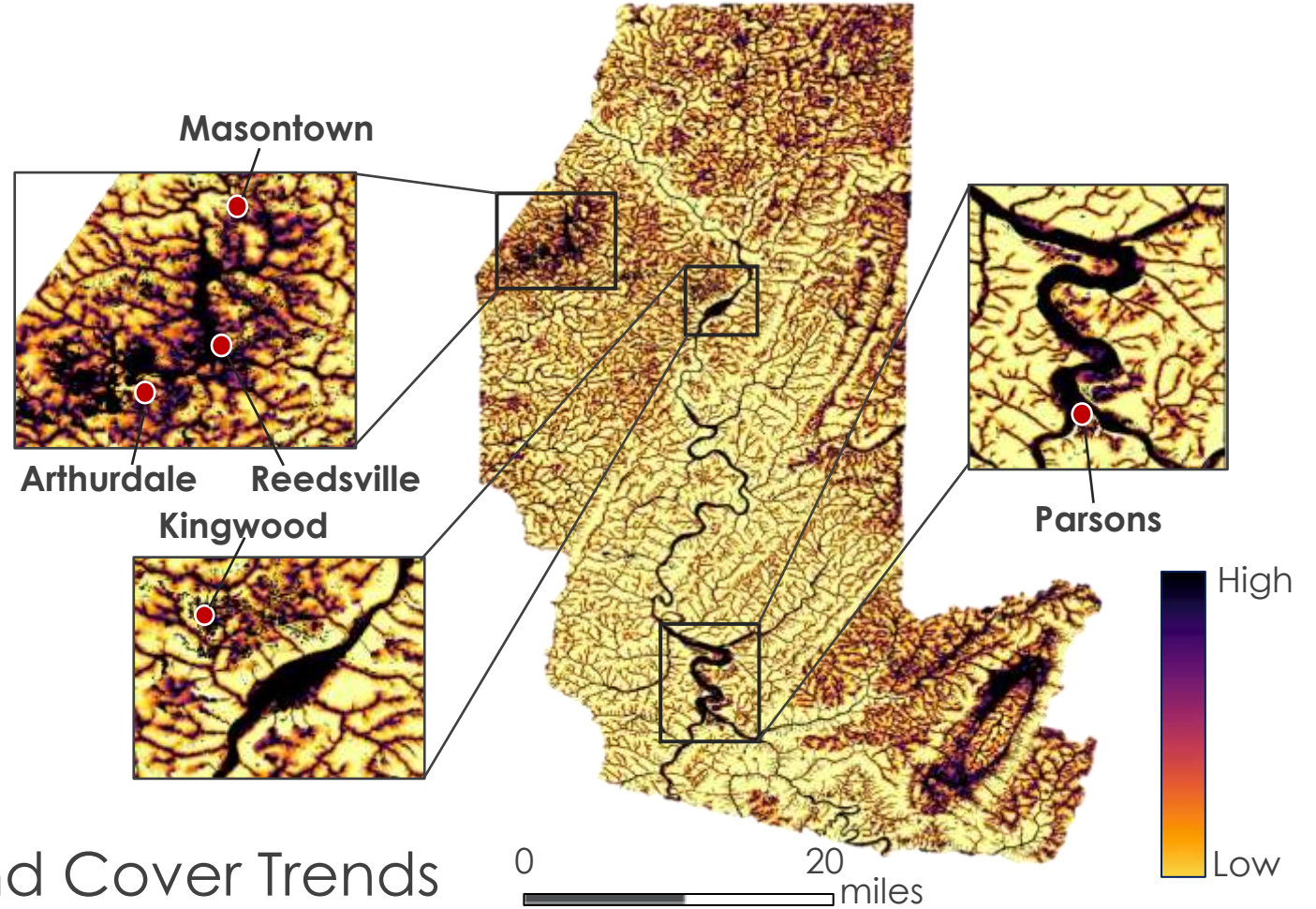
CLIMATE 

HEALTH & AIR QUALITY 



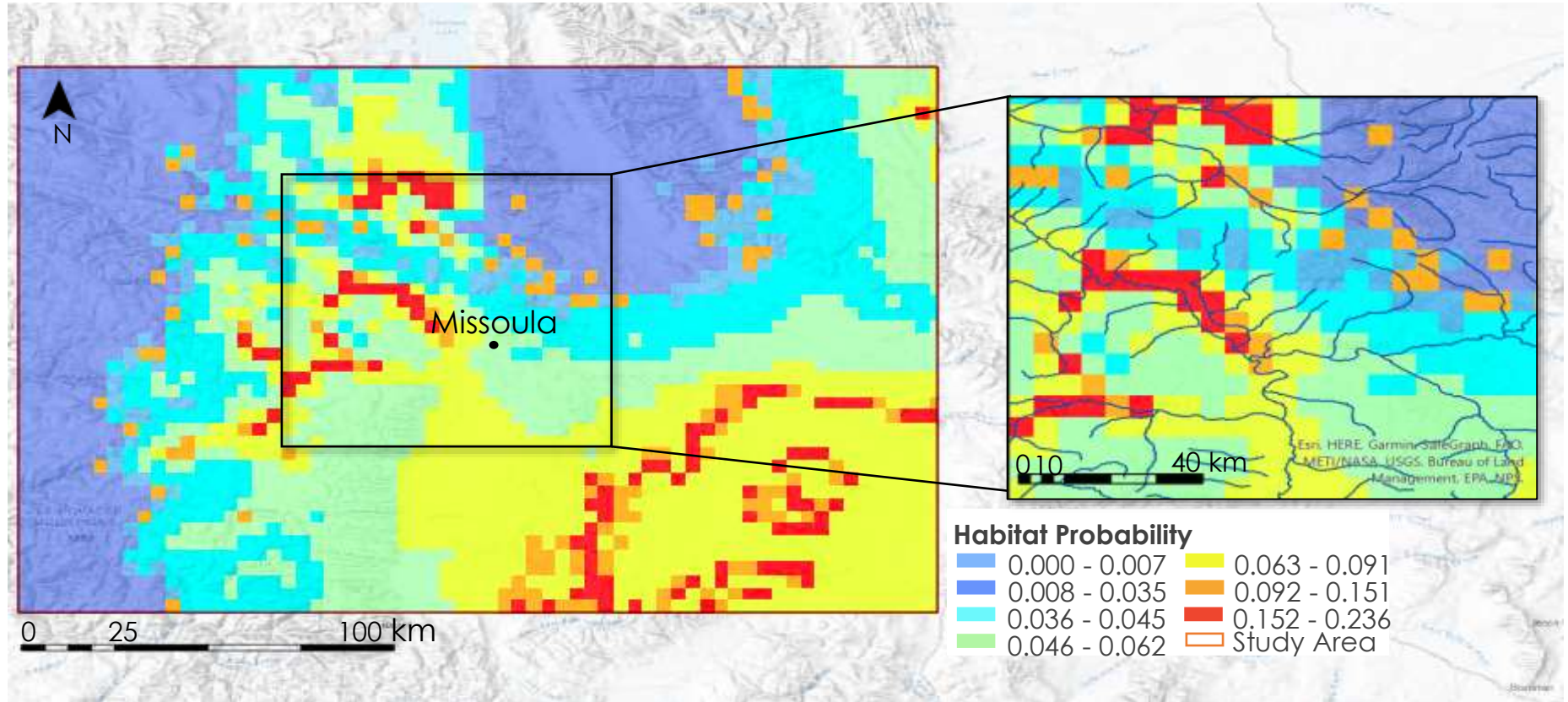
-  ACADEMIC
-  CONSORTIUM
-  LOCAL GOVERNMENT
-  STATE GOVERNMENT
-  FEDERAL GOVERNMENT
-  INTERGOVERNMENTAL
-  FOR-PROFIT
-  NON-PROFIT
-  NGO
-  INTERNATIONAL

DEVELOP Project Highlight: Cheat Water Resources



Assessing Climatology and Land Cover Trends
and Evaluating Flood Risk of the Cheat River

DEVELOP Project Highlight: Western Montana Ecological Forecasting



Modeling Habitat Suitability of Mustelid Species to Guide Detection Dog Surveys for Contaminants Monitoring, via Collected Scats, in River Systems of Western Montana



Participant Eligibility



- Age 18+ with a minimum 3.0 GPA
- Current students, recent graduates, early career professionals, transitioning career professionals, US Military service members & veterans
- Interdisciplinary backgrounds (majority from STEM fields), no experience is required but a strong interest in GIS, remote sensing, and science is important
- US Citizens & Foreign Nationals*

** US citizenship is required to apply to DEVELOP locations at NASA Centers. Foreign nationals must be currently enrolled or recently graduated from an accredited U.S. school. Acceptances are conditional upon proof of a visa or approved CPT/OPT that will allow them to legally work within the U.S.*

Three 10-week terms per year
Spring, Summer, and Fall
Participants must reapply each term



What Makes a Successful DEVELOPEr?

CORE VALUES

COLLABORATION



SERVICE



PASSION



DISCOVERY



DEVELOPErs are passionate about the environment and serving society!



Benefits of DEVELOP

- ▶ **Scientific & Technical Skills**
 - ▶ Experience using NASA Earth observations
 - ▶ GIS & remote sensing
 - ▶ Project execution
 - ▶ Science communication
- ▶ **Personal Development**
 - ▶ Presentation & communication skills
 - ▶ Personality typing & working with diverse groups
 - ▶ Confidence
 - ▶ Interpersonal communication
- ▶ **Professional Development & Networking**
 - ▶ Management & leadership
 - ▶ NASA scientists and managers
 - ▶ Partner organizations
 - ▶ Peers – teams, node, & national





Participant Opportunities

Common Majors

- Geography
- Environmental Science
- Computer Science
- Remote Sensing
- GIS
- Biology
- Engineering
- Chemistry
- Meteorology
- Physics
- Accounting
- Economics
- Mathematics
- Public Policy
- Communications

Note: open to all majors!

Common Software and Programming Languages

- ESRI ArcGIS
- ERDAS IMAGINE
- ENVI/ IDL
- Python
- MATLAB
- R
- Microsoft Office Suite
- Google Earth Engine

Note: no previous experience with these programs is required, but an eagerness and ability to learn quickly is a necessity.

Pay level is determined by **applicant classification**, **education level** and **working location**.



Participant Opportunities

Both In-Person & Virtual Opportunities offer...

- Conduct a 10-week feasibility study w/guidance of DEVELOP Advisors
- Learn to apply Earth observation and geospatial data
- Close daily collaboration with team members
- Engagement with a decision-making partner organization
- Creation of a set of deliverables that communicate the project's methods and results
- Professional development opportunities & building of “soft” skills

Additional In-Person Opportunities...

- In-person tours, field trips, and meetings
- Access to a variety of onsite resources
- Enhanced team building and networking opportunities

Additional Virtual Opportunities...

- Ability to participate when you are not geographically near a DEVELOP location
- Increased flexibility in the virtual environment (ex. no commute)

Review the Apply page and the Summer Project List to identify which projects are available in-person and which are virtual



Summer Projects List

AL – Marshall: Coastal Alabama **Water Resources** (IP)
AZ – Tempe: Albuquerque **Urban Development** (IP)
AZ – Tempe: Hawai'i Island **Climate** (V)
CA – Ames: Florida **Water Resources** (IP)
CA – Ames: New York **Ecological Forecasting** (V)
CA – JPL: Lower Illinois River Valley **Ecological Forecasting** (IP)
CA – JPL: Gulf of Mexico **Health & Air Quality II** (V)
CO – Fort Collins: Black Hills **Wildfires** (IP)
CO – Fort Collins: Yampa **Water Resources** (IP)
CO – Fort Collins: Puget Sound **Water Resources** (V)
GA – Athens: Haiti **Agriculture II** (IP)
GA – Athens: Yellowstone **Ecological Forecasting** (IP)
ID – Pocatello: Idaho **Wildfires** (IP)
ID – Pocatello: Grand Valley **Ecological Forecasting II** (V)

MA – Boston: Great Slave Lake **Water Resources** (IP)
MA – Boston: Kansas City **Urban Development** (V)
MD – Goddard: Chesapeake Bay **Agriculture** (IP)
MD – Goddard: Maine **Ecological Forecasting III** (V)
NC – NCEI: Midwest **Water Resources II** (IP)
NC – NCEI: Mato Grosso **Agriculture** (V)
VA – Langley: Delaware Basin **Ecological Forecasting** (IP)
VA – Langley: Chile **Wildfires** (V)
EJ – Environmental Justice: Wichita **Climate** (V)
EJ – Environmental Justice: Milwaukee **Urban Development** (V)
PL – Pop-up Location at UVA: Chile **Agriculture** (IP)
PL – Pop-up Location at UVA: Chesapeake Bay **Water Resources** (IP)
BT – Bhutan Special Project: Bhutan **Agriculture II** (TBD)

See the Apply page and the Summer Project List for full project titles

Note:
V: Virtual
IP: In Person



Interested in Applying?

Spring 2023 Application: August 29th, 2022 – October 7th, 2022

Term Dates: January 23rd, 2023 – March 31st, 2023

Summer 2023 Application: January 2023 – February 2023

Term Dates: early June 2023 – early August 2023



Find DEVELOP on Social Media!



DEVELOP National Program:

Features projects, node highlights & accomplishments, VPS announcements

www.facebook.com/developnationalprogram



NASA DEVELOP National Program:

Project and promotional videos

www.youtube.com/user/NASADEVELOP



Articles & Important Events: Tweet

@NASA_DEVELOP or

#NASADEVELOP

http://twitter.com/#!/nasa_develop

Thank You!

National Aeronautics and
Space Administration



Visit the DEVELOP website: <https://develop.larc.nasa.gov>

-OR-

Email us at: NASA-DL-DEVELOP@MAIL.NASA.GOV



Frequently Asked Questions

“How much will I be paid?”

- DEVELOP participants are paid on an hourly basis. Rates are based on your current level of education, applicant classification, and locality. If you'd like to know your specific rate, please email us at NASA-DL-DEVELOP@mail.nasa.gov.

“How much would I work per week?”

- DEVELOP participants are expected to commit 20-29 hours per week throughout the term.

“Will the Summer 2022 term be virtual?”

- The Summer term will offer both in-person and virtual opportunities. Make sure to pay attention to the type of opportunity you select on the application!

“Are laptops or software provided?”

- While computers are not provided to participants, each participant is equipped with access to a virtual machine that has all necessary software for participants to conduct their projects.

“Can I participate during the school year while I am taking classes?”

- Yes! Many DEVELOP participants are current students and work the required number of hours around their class schedule during normal business hours (8am – 5pm).

“How strict is the GPA requirement?”

- Participants must have a 3.0 GPA (on a 4.0 scale) to apply. This GPA can be the cumulative and/or most recent semester.

“Who should I ask for Letters of Recommendation?”

- New participant applicants will need to list two recommenders, preferably one from an academic source and one from a professional source. Two academic recommendations are acceptable if necessary.

“How are teams structured?”

- Teams typically range in size from three to six participants, working under the guidance of a NASA DEVELOP Fellow and science advisors.