

*** AGENDA ***

**NASA Biodiversity and Ecological Conservation Team Meeting
May 8-9, 2023**

Location: The Hotel, University of Maryland

Monday, May 8

8:30AM Coffee/Tea

9:00AM **Welcome and Introduction** [\[PDF\]](#)
Code of Conduct Review
Woody Turner/NASA Headquarters

9:15AM **Project Talks** – 5 minute lightning talks + 2 min transition

Transcriptomics From Space: Linking Remote Sensing to Tree Gene Expression in a Diverse Set of Species Through the Growing Season and in Response to Water Deficit [\[PDF\]](#)
Nathan Swenson/Notre Dame University

Ecological forecasting tools for movement-track management at the Yukon-to-Yellowstone migration corridor [\[PDF\]](#)
Gil Bohrer/Ohio State University

From pixels to penguins: analyzing long-term Adélie colony dynamics using Landsat imagery [\[PDF\]](#)
Carole Hall/Stonybrook University

Advancing tools to support and test an integrated biodiversity monitoring system for Colombia's Protected Areas [\[PDF\]](#)
Victor Gutierrez-Velez/Temple University

Integrating remote sensing and ecological forecasting into decision support for beaver rewilding [\[PDF\]](#)
Nick Kolarik/Boise State University

Near-Real-time Forecasting and Change Detection for a Fire-Prone Shrubland Ecosystem [\[PDF\]](#)
Adam Wilson/State University of New York, Buffalo

Multiple spatial scales, long-term trends, and synchrony of the dynamic habitat indices and bird populations [\[PDF\]](#)
Volker Radeloff/University of Wisconsin, Madison

Predicting the Long-Distance Dispersal of Ichthyoplankton in the Intra-Americas Sea: A Data-Assimilative Decision Support Tool for Effective Living Marine Resource Management [\[PDF\]](#)
Taylor Shropshire/Fathom Science LLC

10:15AM **Break (30 min)**

10:45AM **Project Talks** – 5 minute lightning talks + 2 min. transition

Prediction of Individual Coral Organismal Growth, Recruitment, And Mortality (PICOGRAM)

[\[PDF\]](#)

Ana Tarano/University of Miami

BioCube: Integrating remote sensing and in-situ dimensions of biodiversity to understand plant and animal community composition and dynamics at large scales [\[PDF\]](#)

Ryan Pavlick/NASA Jet Propulsion Laboratory

Enhancing biodiversity conservation and ecosystem resilience in dry forest ecosystems [\[PDF\]](#)

Marcus Peery/University of Wisconsin, Madison

Multi-sensor biodiversity framework developed from bioacoustic and space-based sensor platforms [\[PDF\]](#)

Bryan Pijanowski/Purdue University

Natural Resource Management with New Protected Area Connectivity Tools [\[PDF\]](#)

Patrick Jantz/Northern Arizona University

Understanding the global 3D signature of tree biodiversity [\[PDF\]](#)

Atticus Stovall/University of Maryland, College Park

Understanding seed dispersers movements and their consequences across rainforest gradients of structural and phenological diversity [\[PDF\]](#)

Antonio Ferraz/University of California, Los Angeles and JPL

Archipelago-wide rewilding of Galapagos giant tortoises [\[PDF\]](#)

James Gibbs/State University of New York, Syracuse

11:45AM **Lunch (1h 45m)**

1:30PM **Project talks** - 5 minute lightning talks + 2 min. transition

Earth Observations for Climate-Ready Aquaculture Management and Siting to Improve Food Security and Ocean Health in Palau, a Small Island Developing State [\[PDF\]](#)

Robert Jones/The Nature Conservancy

Full annual cycle conservation of migratory birds in the Western Hemisphere [\[PDF\]](#)

Jill Deppe/National Audubon Society

Scaling forest diversity across space and time in a non-equilibrial world [\[PDF\]](#)

Sydne Record/University of Maine

Biodiversity, connectivity, and ecological forecasting: applying NASA earth observation data to conservation management in the Greater Kruger National Park region, South Africa [\[PDF\]](#)
Jody Vogeler/Colorado State University

Adding space-based vegetation structure measurements to a global ecosystem model to simulate tropical forest animal communities and their role in ecosystem function [\[PDF\]](#)
Christopher Doughty/Northern Arizona University

Projecting the Spread of Aquatic Invasive Species Using Remote Sensing, Genetics, and Climate Modeling [\[PDF\]](#)
Gordon Luikart/University of Montana, Missoula

Mapping changes in forest diversity and disease in North American temperate forests [\[PDF\]](#)
J. Antonio Guzmán Q./University of Minnesota

Act Green: A near-real time integrated mapping and reporting system for re-wilding efforts: applying, extending and enhancing an application for tigers (*Panthera tigris*) to lions (*Panthera leo*), jaguars (*Panthera onca*), and American bison (*Bison bison*) [\[PDF\]](#)
Haqiq Rahmani/Wildlife Conservation Society

Functional ecology in the SBG era: An assessment of the state of plant trait retrieval from imaging spectroscopy [\[PDF\]](#)
Alexey Shiklomanov/NASA Goddard Space Flight Center

2:30PM **Project Talks** - 5 minute lightning talks + 2 min. transition

Aeroecology, an emerging ecological frontier for addressing modern conservation challenges [\[PDF\]](#)
Kyle Horton/Colorado State University

Multiscale Investigation of Microbial Biodiversity in Trans-Atlantic Dust Plumes [\[PDF\]](#)
Hosein Foroutan/Virginia Polytechnic Institute and State University

Louisiana Deltaic Estuaries MBON: Sea Level Rise Sentinels [\[PDF\]](#)
*Frank Mueller-Karger/University of South Florida on behalf of
 Cassandra Glaspie/Louisiana State University*

The Southeast US Marine Biodiversity Observation Network (MBON): Toward Operational Marine Life Data for Conservation and Sustainability [\[PDF\]](#)
Frank Mueller-Karger/University of South Florida

Assessing spatial biodiversity dynamics in kelp forest ecosystems using spaceborne remote sensing [\[PDF\]](#)
Tom Bell/ University of California, Santa Barbara

Hot spots in the ice: importance of polynyas for marine ecosystems [\[PDF\]](#)

Alice DuVivier/UCAR

Identifying coral refugia from observationally weighted climate model ensembles [\[PDF\]](#)

Peter Kalmus/NASA JPL

The University of Connecticut Ecological Modeling Institute Biodiversity Exposure Forecasts (BEFore): Anticipating Ecological Vulnerability to Global Change

Cory Merow/University of Connecticut

3:30PM **Break (30m)**

4:00PM **Tribal engagement panel** [\[PDF\]](#)

Moderated discussion around the following topics: relevant activities or initiatives at NASA; best practices for engagement and co-production; open science/data sovereignty

James Rattling Leaf/Wolakota Lab, LLC

Sativa Cruz/NASA Indigenous Peoples Initiative

Steve Crawford/ NASA Open Source Science Initiative

Rebecca Hill/ US Forest Service Tribal Relations

5:00PM **Adjourn**

*** AGENDA ***

**NASA Biodiversity and Ecological Conservation Team Meeting
May 8-9, 2023**

Location: The Hotel, University of Maryland

Tuesday May 9

8:30AM Coffee/Tea

9:00AM **Project Talks: BioSCape (5 min + 1 for transition)**

Project overview [\[PDF\]](#)
Adam Wilson/University at Buffalo

Intrinsic dimensionality and data fusion to monitor Cape biodiversity [\[PDF\]](#)
Phil Townsend/University of Wisconsin, Madison on behalf of Jet Propulsion Laboratory/Kerry Cawse-Nicholson

BIOSCape - Mapping of phytoplankton functional types from space in support of coastal resource management and decision support activities [\[PDF\]](#)
Joaquim Goes /Columbia University on behalf of Jinghui Wu/Columbia University

BioSoundSCape: Connecting acoustics and remote sensing to study habitat-animal diversity across environmental gradients [\[PDF\]](#)
Matthew Clark/Sonoma State University

RadSCape: radiative transfer simulation and validation of the dynamic structural and spectral properties of the vegetation of the Cape [\[PDF\]](#)
Jan van Aardt, presented by Adam Wilson/University at Buffalo

CapeTraits: Patterns of functional trait variation and diversity across the Greater Cape Floristic Region and comparison with other Mediterranean ecosystems [\[PDF\]](#)
Phil Townsend/University of Wisconsin, Madison

BioREaCH: Biodiversity-Remote sensing for Estuarine and Coastal Habitat research [\[PDF\]](#)
Anthony Campbell/NASA Goddard Space Flight Center

Integrating remote sensing and biodiversity observations to map and monitor plant taxonomic, phylogenetic, and functional beta-diversity in the Greater Cape Floristic Region [\[PDF\]](#)
Matthew Fitzpatrick/University of Maryland, Cambridge

TraitsCape: Understanding the role of microrefugia in buffering fynbos from global change
Cory Merow/University of Connecticut, Storrs

Impacts of invasive alien species on biodiversity and ecosystem functioning [\[PDF\]](#)
Ben Poulter/NASA Goddard Space Flight Center

Plant community assembly and trait evolution in the South African Greater Cape Floristic Region [\[PDF\]](#)
Jeannine Cavendar-Bares/University of Minnesota

Cyanobacteria and Surface aquatic vegetation of the Cape freshwater systems (CyanoSCape): A Hyperspectral Data Campaign and Analysis [\[PDF\]](#)
Jeremy Kravitz/NASA Ames Research Center

10:30AM **Break (30 min)**

11:00AM **FINESST speed talks (30 min)**
Jenna Keany/Northern Arizona University [\[PDF\]](#)
Fernando Romero-Galvan/Cornell University [\[PDF\]](#)
Natalie Queally/University of Wisconsin, Madison [\[PDF\]](#)
Andrew Jablonski/University of Virginia [\[PDF\]](#)
Natalia Rogova/University of Wisconsin [\[PDF\]](#)
Jenny Linscott/University of South Carolina [\[PDF\]](#)
Yilun Zhao/University of Illinois, Urbana-Champaign [\[PDF\]](#)
Diego Ellis Soto/Yale University [\[PDF\]](#)
Ben Tonelli/University of California, Los Angeles [\[PDF\]](#)

11:30PM **Lunch - Mentor Lunch / Early Career Lunch (1.5 hrs)**

1:00 PM **Project Talks (5 min + 2 for transition)**

Soilborne plant pathogen dispersal and assessment: Building a remote sensing-based global surveillance system for plant disease [\[PDF\]](#)
Kaitlin Gold/Cornell University

Leveraging multiscale airborne and spaceborne imaging spectroscopy to monitor grassland plant diversity under different management practices [\[PDF\]](#)
Hamed Ghlozideh/Oklahoma State University

Ocean color remote sensing of zooplankton: detecting swarms of *Calanus* in the western North Atlantic [\[PDF\]](#)
Catherine Mitchell/Bigelow Laboratory for Ocean Sciences

Modeling Endangered Species' Forest Habitats, And Updating Forest Land Use Plans in Argentina In Support of the UN Sustainable Development Goals [\[PDF\]](#)
Volker Radeloff/University of Wisconsin, Madison

The power of GEDI: Investigate the efficacy of spaceborne Lidar to model biodiversity and characterize habitat heterogeneity at the continental and global scales [\[PDF\]](#)
Qiongyu Huang/Smithsonian Institution

MarineVERSE - The Marine Biodiversity and Scaling Project [\[PDF\]](#)
Sam Purkis/University of Miami

1:50PM **Research Results Portal** [\[PDF\]](#)
Megan McGroddy/NASA Goddard Space Flight Center

2:00 PM **New Missions** (10 mins + 4 mins Q&A)

EMIT (Earth Surface Mineral Dust Source InvesTigation) [\[PDF\]](#)
Dana Chadwick/NASA Jet Propulsion Laboratory

NISAR (NASA-ISRO Synthetic Aperture Radar) [\[PDF\]](#)
Kyle McDonald/NASA Jet Propulsion Laboratory & City Univ. of NY

PACE (Plankton, Aerosol, Cloud, ocean Ecosystem) [\[PDF\]](#)
Antonio Mannino/NASA Goddard Space Flight Center

GLIMR (Geosynchronous Littoral Imaging and Monitoring Radiometer) [\[PDF\]](#)
Antonio Mannino/NASA Goddard Space Flight Center

SBG (Surface Biology and Geology) [\[PDF\]](#)
Ryan Pavlick/NASA Jet Propulsion Laboratory

Landsat Next [\[PDF\]](#)
Chris Neigh/NASA Goddard Space Flight Center

3:15PM **Break** (30 min)

3:45PM **Communications** [\[PDF\]](#)
 Hands-on activity
*Aries Keck, NASA Goddard Space Flight Center and Marissa Kunerth, Intellibridge
 NASA Applied Sciences Program Communications Teams*

4:45PM **Closing Remarks** [\[PDF\]](#)
Keith Gaddis/NASA Headquarters

5:15PM Adjourn