**** 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 **[PDF]**
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**

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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 **[PDF]**
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