Forest Health Monitoring Program
Monthly Update
September, 2020

WHAT'S NEW

Get to know FHM This month get to know the **aerial survey efforts** of FHM. Aerial detection surveys are used to collect data on insect, disease, and other visually conspicuous disturbances to forests. These data are available online and can be used to evaluate conditions at multiple spatial levels: local, State, and national. Aerial surveys are often a partnership between Federal and State personnel. The U.S. Forest Service's Forest Health Protection Program and the Aerial Survey Working Group, which was an outgrowth of FHM, have assembled national standards for data collection and reporting that allow the data collected across the country to be compatible for analysis. Participation in aerial surveys may take different forms from State to State, with State and Federal personnel sharing responsibility for locating and contracting for appropriate aircraft, making observations, ground checking, and editing and summarizing data. The Forest Health Assessment & Applied Sciences Team (FHAAST) has developed methods and tools for improving aerial survey data collection. Aerial survey data are available online.

Evaluation Monitoring (EM) Request for Proposals – The Forest Health Monitoring Program is requesting proposals for FY 2021 EM projects designed to determine the extent, severity, and causes of undesirable changes in forest health. Project proposals for new and continuing projects should be submitted by **October 16, 2020** to the following FHM Regional leaders: Stephen Burr for Northeast and North Central FHM Regions (Stephen.burr@usda.gov), Chris Asaro for Southern FHM Region (christopher.asaro@usda.gov), Ryan Hanavan for Interior West FHM Region (ryan.hanavan@usda.gov), or Karen Ripley for West Coast FHM Region (karen.ripley@usda.gov). The FHM Regional Managers will, in turn, forward their top selected proposals to the Washington Office by November 30, 2020. Detailed instructions and templates for EM project proposals and reporting are available on the Forest Health Protection (FHP) grants website. EM is the first selection listed under FHP grants.

UPCOMING EVENTS

(Items beginning with * indicate a new listing or new information)

***September 28-29, 2020.** Montana Aspen Workshop. Virtual and in-person. Sponsored by the Western Aspen Alliance, Bureau of Land Management, USD Forest Service, Montana DNRC, and Heart of the Rockies Initiative. Register for both events online before September 27, 2020.

- The Virtual Aspen Workshop will be held **September 28, 2020 at 9:00 a.m.-12:00 p.m.** MDT. There will be virtual presentations and

discussion about aspen ecology and functional types; monitoring goals, protocols, and treatments; and how different goals (e.g., wildlife use, grazing impact, post-fire effects, insects & disease presence/impacts) influence survey types. Final agendas and video conferencing links will be sent to registered participants as the date gets closer.

- In-person Field Day – will be held **September 29, 2020**. The field day will be based out of Dillon, MT. This day is optional and is subject to change based on COVID guidelines. Participation will be limited to a small group as this day will require car travel and face-to-face gathering. Field day content will be similar to our virtual discussion, with a focus on monitoring and hands-on learning. Plan on setting aside a full day for this event.

***October 6-7, 2020**. Virtual Meeting. Restoring the West Conference 2020. The conference this year will be a scaled-down version if the usual 2-day conference. The conference will be hosting two extended versions of the Learn-at-Lunch series on October 6-7 in a virtual format. Feature topics will include quaking aspen case studies and forest soils ecology. To learn more, visit the Restoring the West web site.

***October 13-16, 2020.** Virtual Meeting. The 47th Natural Areas Conference (NAC20), Sierra to Sagebrush: Integrating Management and Stewardship Across Landscapes. This meeting is focused on the unique ecological and management dynamics that distinguish the Nevada-California borderlands. Things are big here: big mountains, big lakes, big landscapes, big ranches, big growth, and big and complex issues. Like: how to balance one of the fastest growing metro areas in the U.S. with preservation of open habitat? How to support more people with less water, while preserving water quality? How to conserve rare or keystone species in the face of global change and rapid urban growth? How to reduce fire frequencies in sagebrush ecosystems but increase them (safely) in montane forests? Solving these issues will depend at least partly on land and resource managers, scientists, and policy makers coming together to share and discuss creative ideas that cross disciplines, ecosystems, and jurisdictional boundaries. NAC20 is an event designed to facilitate this crucial exchange. Learn more and register at the conference web site.

UPCOMING WEBINARS

(Items beginning with * indicate a new listing or new information)

***September 9, 2020 at 1:00 p.m. Eastern time. Air Potato and Brazilian Peppertree in the Southeast: Where do we Stand?** (Sponsored by Southern Regional Extension Forestry) Speaker: Dr. Carey Minteer (Assistant Professor, University of Florida) Brazilian peppertree (*Schinus terebinthifolius*) and Air potato (*Dioscorea bulbifera*) are two non-native species harming natural ecosystems in Florida and other regions in the southeastern United States. Dr. Minteer will provide a general overview of the introduction, range, impact and possible management strategies for these species. Pre-registration is not

required! CEU available: Certificate of participation. Plan to join the webinar 15 minutes early.

*September 10, 2020 at 1:00 p.m. Eastern time. Georgia Forestry BMPs – Part 1.** (Sponsored by Georgia SFI Implementation Committee, Georgia Forestry and Warnell School of Forestry and Natural Resources) Speakers: Scott Thackston (Water Quality Program Coordinator, Georgia Forestry Commission) and Dr. Jay Shelton (Associate Professor, UGA Warnell School of Forestry and Natural Resources) This is part 1 of a two part series presented by the Georgia SFI Implementation Committee and the Georgia Forestry Commission. In this two-part series, experts from the Warnell School of Forestry and Natural Resources at UGA and the Georgia Forestry Commission will share their insights on the science, guidance, and rules for Forestry BMPs (Best Management Practices) in Georgia. Pre-registration is not required! CEU applied for: Georgia Master Timber Harvester - Continuing Logger Ed. (GaMTH CLE) - 1 hour CLE - MTH Category B Credit. CEU available: Society of American Foresters - Certified Forester Education (SAF-CFE) - 2 hour Category 1 Credit; Certificate of participation. Plan to **join the webinar** 15 minutes early.

*September 15, 2020 at 2:00 p.m. Eastern time. An Overview of NAIP Derived Point Clouds for Forest Monitoring Webinar.** (Sponsored by Society of American Foresters, Inventory and Biometrics (A1) Working Group) Speakers: Jacob Strunk (Statistician, USDA Forest Service, Pacific Northwest Research Station) and James Westfall (Research Forester, USDA Forest Service, Northern Research Station). The learning objectives listed on the webinar website are to describe National Agriculture Imagery Program (NAIP) pushbroom DAP technology; explain how DAP contributes to forest inventory; and compare and relate the performances of DAP, lidar, and landsat for forest inventory. Visit the webinar **website** for more information. **Registration is required. Note the webinar is free for SAF members and $10 for nonmembers.** Register **online**. CEU available: Society of American Foresters - Certified Forester Education (SAF-CFE) – 1 CFE in Category 1.

*September 24, 2020 at 11:00 a.m. Eastern time. Techno-Economic and Lifestyle Assessments of Biochar Production from Forest Residues.** (Made possible through a partnership with the U.S. Biochar Initiative, the Southern Regional Extension Forestry, and USDA Forest Service Research and Development) Speaker: Kamalakanta Sahoo (USDA Forest Service) The presenter, Kamalakanta Sahoo is working as an Assistant Scientist at the Forest Product Laboratory (FPL). His research focused on bio-based product's system analysis including techno-economic analysis (TEA), lifecycle assessment (LCA), machine learning and big data, and design and simulation of sustainable bioenergy/bioproduct supply chain. Pre-registration is not required! CEU available: Certificate of participation. Plan to **join the webinar** 15 minutes early.

*September 29, 2020 at 1:00 p.m. Eastern time. Georgia Forestry BMPs – Part 2.** (Sponsored by Georgia SFI Implementation Committee, Georgia

Forestry and Warnell School of Forestry and Natural Resources) Speakers: Scott Thackston (Water Quality Program Coordinator, Georgia Forestry Commission) and Dr. Jay Shelton (Associate Professor, UGA Warnell School of Forestry and Natural Resources) This is part 2 of a two part series presented by the Georgia SFI Implementation Committee and the Georgia Forestry Commission. In this two-part series, experts from the Warnell School of Forestry and Natural Resources at UGA and the Georgia Forestry Commission will share their insights on the science, guidance, and rules for Forestry BMPs (Best Management Practices) in Georgia. Pre-registration is not required! CEU applied for: Georgia Master Timber Harvester - Continuing Logger Ed. (GaMTH CLE) - 1 hour CLE - MTH Category B Credit. CEU available: Society of American Foresters - Certified Forester Education (SAF-CFE) - 2 hour Category 1 Credit; Certificate of participation. Plan to **join the webinar** 15 minutes early

***October 12, 2020 at 1:00 p.m. Eastern time. Inclusivity in Cooperative Extension Programming, with an Emphasis on natural Resources and Climate Change.** (Presented by USDA Northeast Climate Hub) Speakers: Matthew L. Richardson (Assistant Director for Urban Agricultural Research, University of the District of Columbia) and Elgloria Harrison (Dean, School of Health Sciences, Human Services, and Nursing, Lehman College, NY) Through a case study from Washington, DC, participants will learn how to get feedback from historically underrepresented groups and tailor cooperative extension programs to people of different races, ages, and academic backgrounds. Some people, such as minorities and those from under-educated and lower income backgrounds, are typically excluded from conversations surrounding the degradation and improvement of ecosystem structure, function, and services. In an effort to provide an opportunity for under-served populations to be heard, inform content creation in academic courses and in cooperative extension programs, and create experiential learning opportunities for students at our land-grant university, we developed a survey instrument to gather public perceptions and knowledge on natural resources and climate change. This survey was administered in-person by undergraduate students at the University of the District of Columbia and online in Washington, DC. We will share the lessons we learned about effectively reaching people and how demographics of stakeholders need to be considered. Understanding what people know and perceive is key to designing effective educational programs, engaging in collective conversations, and building effective partnerships that find solutions for environmental problems that benefit the community. Pre-registration is not required! CEU available: Certificate of participation. Plan to **join the webinar** 15 minutes early.

***Webinars offered by the U.S Forest Service Geospatial Technology and Applications Center (GTAC)** include three varieties. The lightning talks (**Lightning Talk**) are very short presentations that will last approximately 15-30 minutes; they will focus on specific geoprocessing tasks and are designed to provide concise and useful information in a very efficient manner. The Awareness Sessions (**Awareness**) are designed to build your knowledge base on

the particular topic and enable you to further explore the technology with realistic expectations. The Technical Training Webcasts (**Technical**) are designed to provide you with the technical skills and tools to complete geospatial tasks. The courses are also divided into five categories. The categories are indicated after each web link in the list below as follows: **GIS-Desktop; GIS-Web; GIS-Mobile; Remote Sensing; and Data management**.

All class registrations can be accessed via the CATALOG WEBPAGE.

Note: If you don't have access to the Forest Service Intranet, the registration links will not work. Please email what class you want to take to (SM.FS.geotraining@usda.gov) and they will register you manually.

- **September 9, 2020 at 10:00am – 4:00pm (Mountain Time). Introduction to WebGIS Using ArcGIS Online** (**Technical - GIS-Web**) **Forest Service Only** This course covers the basics of using ArcGIS Online (AGOL). Students will learn how to make a map in AGOL, how to work in groups, what roles are, and then how to take a map offline to use in a mobile app like collector. Finally we will create a web app to view our completed map. The objectives of this course are to understand the role of ArcGIS Online as a component of the US Forest Service's implementation of web-based services; and to gain an understanding of the administration of ArcGIS Online, publishing of map services, and the process to create web maps and web applications that we can share with others.
- **September 10, 2020 at 10:00am – 4:00pm (Mountain Time). Collector for ArcGIS in the Forest Service** (**Technical - GIS-Mobile**) **Forest Service Only** This introductory webinar covers GPS data collection using the Collector app on a tablet or cell phone. The GIS data and online map setup for Collector are also introduced.
- **September 10, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap Editing** (**Technical - GIS-Desktop**) This class demonstrates editing environment in ArcMap. You will be exposed to the new editing environment. The course covers editing attribute data, performing spatial edits, and creating new data (digitizing). The hands-on exercises teach basic editing functionality.
- **September 15, 2020 at 10:00am – 12:30 pm (Mountain Time). Forest Service Geospatial Resources (Awareness – Data Management) Forest Service Only** This class is a broad overview of the GIS resources available in the Forest Service. It is not a class on how to use specific software.
- **September 15, 2020 at 10:00am – 4:00pm (Mountain Time). Survey123 Form Creation** (**Technical - GIS-Mobile**) **Forest Service Only** What is Survey123? Part of the ESRI Geospatial Cloud, Survey123 for ArcGIS is a complete, form-centric solution for creating, sharing, and analyzing surveys. Use it to create smart forms with skip logic, defaults, and support for multiple languages. Collect data via web or mobile devices, even when disconnected from the Internet. Analyze results quickly, and upload data

securely for further analysis. This webinar introduces the Survey123 App and the tools used to create forms. Come explore this data collection workflow and see if it is the right tool for your project. The objective of this course is to build and publish survey forms for use in the Survey123 field app. The Survey123 website and Survey 123 Connect for desktop will be used to create simple smart forms with drop down lists.

- **September 16, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Thematic Data 1: Development and Classification** (**Technical** - **GIS-Desktop**) Learn the fundamentals of raster data and imagery including data extraction and exploration techniques and how to perform image classification using the ArcGIS Spatial Analyst extension and the Image Classification toolbar. This is not an introductory course. While there is no knowledge requirement for raster and/or spatial analysis, participants should have a general working knowledge of ArcGIS or should take an introductory level GIS course beforehand (e.g., Quick Start).
- **September 17, 2020 at 10:00am – 4:00pm (Mountain Time). ArcGIS Pro for ArcMap Users** (**Technical** - **GIS-Desktop**) **Forest Service Only**. A general understanding of GIS and a working knowledge of ArcGIS Desktop is required. This course is designed as a crosswalk between using ArcMap to ArcGIS Pro. This course provides a hands-on introduction to participants of Pro's new user interface and project platform. Participants will walk through common workflows previously performed in ArcMap/Catalog such as navigation, editing, analysis, sharing, symbolizing, creating a layout, geoprocessing, querying and importing maps and data.
- **September 22, 2020 at 10:00am – 4:00pm (Mountain Time). Collector for ArcGIS in the Forest Service** (**Technical** - **GIS-Mobile**) **Forest Service Only** This introductory webinar covers GPS data collection using the Collector app on a tablet or cell phone. The GIS data and online map setup for Collector are also introduced.
- **September 22, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap - Geoprocessing** (**Technical** - **GIS-Desktop**) The Analysis toolbox contains a powerful set of tools that perform the most fundamental GIS operations. In this course you will perform overlays, create buffers, calculate statistics, perform proximity analysis, and much more.
- **September 23, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Using Citrix for GIS Projects** (**Technical** - **GIS-Desktop**) Participants will learn how to use GIS data to analyze a vegetation project proposal and prepare information for a NEPA analysis. Students will use the Forest Service Data Center and Citrix programs that allow for inter-discipline collaboration, and provides a central repository for all the project data. This course covers the process of finding, creating, managing, and analyzing GIS data to prepare outputs for NEPA specialist reports.
- **September 24, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Thematic Data 2: Analysis and Modeling.** (**Technical** - **GIS-Desktop**) This course provides an in depth look at the world of spatial modeling. You will gain insight on data preparation techniques to complete various spatial

modeling scenarios that will increase your understanding of ArcGIS ModelBuilder and various spatial modeling theories.

- **September 29, 2020 at 10:00am – 4:00pm (Mountain Time). Intermediate Web GIS Using ArcGIS Online** (**Technical - GIS-Web**) **Forest Service Only** A general understanding of ArcGIS Online and ArcMap is assumed for this course. This course will look at some of the more advanced options available in AGOL. A closer look at map and feature services will be explored. An examination and exploration of the Living Atlas will be conducted. Lastly, an overview of the analysis tools and geocoding will be covered.
- **September 30, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Cartographic Tools in ArcGIS.** (**Technical - GIS-Desktop**) Participants will learn how to work with various cartographic related properties in ArcGIS. The course covers how to set Layer and Data Frame properties, work with Layer files, assign classification symbology, work with labeling and annotation, and create a final map product.
- **October 1, 2020 at 10:00am – 4:00pm (Mountain Time). Collector for ArcGIS in the Forest Service** (**Technical - GIS-Mobile**) **Forest Service Only** This introductory webinar covers GPS data collection using the Collector app on a tablet or cell phone. The GIS data and online map setup for Collector are also introduced.
- **October 6-7, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – QuickStart (Technical - GIS-Desktop)** Participants will learn how to get started using ArcGIS Desktop's Primary applications, ArcMap and ArcCatalog. The course covers fundamental GIS concepts and basic functionality to view and manipulate display properties. The hands-on exercises teach basic viewing functionality and GIS data types and their properties.
- **October 8, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap Editing** (**Technical - GIS-Desktop**) This class demonstrates editing environment in ArcMap. You will be exposed to the new editing environment. The course covers editing attribute data, performing spatial edits, and creating new data (digitizing). The hands-on exercises teach basic editing functionality.
- **October 14, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Editing in SDE** (**Technical - GIS-Desktop**) **Forest Service Only**. In a multiuser editing environment, SDE is used to centrally store data and user edits without duplicating data. Versioning allows you to avoid the creation of redundant data while maintaining data snapshots and alternate views. In this webinar, you learn basic concepts and Forest Service workflows of versioning and techniques used to maintain database performance. This course will provide an overview of ArcGIS SDE and discuss different methods of editing in a multi-user / SDE environment
- **October 14, 2020 at 10:00am – 4:00pm (Mountain Time). Collector for ArcGIS in the Forest Service** (**Technical - GIS-Mobile**) **Forest Service Only** This introductory webinar covers GPS data collection using the Collector app on a tablet or cell phone. The GIS data and online map setup for Collector are also introduced.

- **October 15, 2020 at 10:00am – 4:00pm (Mountain Time). Introduction to WebGIS Using ArcGIS Online** (**Technical - GIS-Web**) **Forest Service Only** This course covers the basics of using ArcGIS Online (AGOL). Students will learn how to make a map in AGOL, how to work in groups, what roles are, and then how to take a map offline to use in a mobile app like collector. Finally we will create a web app to view our completed map. The objectives of this course are to understand the role of ArcGIS Online as a component of the US Forest Service's implementation of web-based services; and to gain an understanding of the administration of ArcGIS Online, publishing of map services, and the process to create web maps and web applications that we can share with others.
- **October 15, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Spatial Statistics** (**Technical - GIS-Desktop**) Participants will learn the basics of Spatial Statistics and ways in which you can explore spatial data using the Spatial Statistics toolset. This course covers measuring distribution and relationship of spatial features and any significant patterns that may exist. Participants will also learn how to analyze patterns in spatial data and identify locations of statistically significant spatial clusters and/or dispersion.
- **October 20, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Geoprocessing** (**Technical - GIS-Desktop**) The Analysis toolbox contains a powerful set of tools that perform the most fundamental GIS operations. In this course you will perform overlays, create buffers, calculate statistics, perform proximity analysis, and much more.
- **October 21-22, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Managing Forest Service SDE Geodatabases** (**Technical - GIS-Desktop**) **Forest Service Only**.
- **October 22, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Spatial Analyst** (**Technical - GIS-Desktop**) ArcGIS Spatial Analyst provides a broad range of powerful spatial modeling and analysis capabilities. You can create, query, map, and analyze cell-based raster data; perform integrated raster/vector analysis; derive new information from existing data; query information across multiple data layers; and fully integrate cell-based raster data with traditional vector data sources.
- **October 27, 2020 at 10:00am – 4:00pm (Mountain Time). Survey123 Form Creation** (**Technical - GIS-Mobile**) **Forest Service Only** What is Survey123? Part of the ESRI Geospatial Cloud, Survey123 for ArcGIS is a complete, form-centric solution for creating, sharing, and analyzing surveys. Use it to create smart forms with skip logic, defaults, and support for multiple languages. Collect data via web or mobile devices, even when disconnected from the Internet. Analyze results quickly, and upload data securely for further analysis. This webinar introduces the Survey123 App and the tools used to create forms. Come explore this data collection workflow and see if it is the right tool for your project. The objective of this course is to build and publish survey forms for use in the Survey123 field app. The Survey123 website and Survey 123 Connect for desktop will be used to create simple smart forms with drop down lists.

- **October 28, 2020 at 10:00am – 4:00pm (Mountain Time). ArcGIS Pro for ArcMap Users** (**Technical - GIS-Desktop**). **Forest Service Only** A general understanding of GIS and a working knowledge of ArcGIS Desktop is required. This course is designed as a crosswalk between using ArcMap to ArcGIS Pro. This course provides a hands-on introduction to participants of Pro's new user interface and project platform. Participants will walk through common workflows previously performed in ArcMap/Catalog such as navigation, editing, analysis, sharing, symbolizing, creating a layout, geoprocessing, querying and importing maps and data.
- **October 29, 2020 at 10:00am – 4:00pm (Mountain Time). ArcMap – Advanced Editing** (**Technical - GIS-Desktop**) Participants will learn how to work with the Advanced Editing Toolbar in ArcMap; practice using geodatabase topology to find and fix errors; and automate editing through a vertical integration tool that aligns Forest Service data with existing reference data.

*Webinars and other information from **The National Academies of Sciences, Engineering and Medicine study, *The Potential for Biotechnology to Address Forest Health***, are posted on the study web site. Visit the web site for more information.

*Webinars and other information about **Citizen Science and the U.S. Forest Service** are posted on the Citizen Science web site. Visit the web site for more information.

*Webinars and other information from **U.S. Forest Service, Southern Research Station, Science in Practice** are posted on the Science in Practice website. These 30-minute webinars focus on practical takeaways for land managers. Visit the web site for more information.

PUBLICATIONS OF INTEREST

1. **Reed, C.C.; Hood, S.M.** 2020. Few generalizable patterns of tree-level mortality during extreme drought and concurrent bark beetle outbreaks. Science of the Total Environment. DOI: https://doi.org/10.1016/j.scitotenv.2020.141306.

FOR MORE FHM INFORMATION

Visit the FHM homepage and Forest Health Assessment and Applied Sciences or access both via the **USDA Forest Service homepage**