Forest Health Monitoring Program
Monthly Update
February 2021

WHAT'S NEW

Get to know FHM. This month, get to know the **Forest Health Monitoring (FHM) Program of the Forest Service, U.S. Department of Agriculture**. FHM is a Forest Service – State partnership that collects and analyzes information from many sources to assess status and trends of forest health indicators. FHM's three main objectives are (1) identify forest ecosystems where conditions might be deteriorating in subtle ways over large areas; (2) verify and define the extent of deterioration in forest ecosystems where potential problems are identified; and (3) understand the processes that cause forest health problems so strategies can be developed for problem mitigation and prevention (Bechtold and others 2012). Each month, watch for specific information about getting to know the FHM program components, partners and cooperators, forest health data and reporting, and analysis tools. In 2021, get to know FHM!

UPCOMING EVENTS

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

***February 23-24, 2021. Virtual Meeting. National Forest Health Monitoring (FHM) Program Workshop.** The 2021 Forest Health Monitoring Virtual Workshop will be held on two consecutive days during the last week of February. Sessions are scheduled for Tuesday, February 23 and Wednesday, February 24 from 1:30 to 4:30 EST each day (10:30 to 1:30 PST). Each 3-hour session will include Regional Roundups on forest health monitoring activities as well as a wide range of "lightning talks" that will be presented by State, Federal and academic forest health specialists. The Workshop will be presented in the Teams environment. For an invite and an agenda, contact your local Forest Health Monitoring Coordinator or send a request to Tom Eager (tom.eager@usda.gov). See you soon!

UPCOMING WEBINARS

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

***February 18, 2021 at 11:00 a.m. Eastern time. Forest Management for Increasing Carbon Sequestration with Biochar.** (Sponsored by USDA Forest Service) Speaker: Carlos Rodriguez Franco (Senior Forester, USDA Forest Service Research and Development). This is the first webinar in the Biochar series for 2021. This webinar will cover aspects related to forest management approaches that can help with negative emissions technologies to increase C

sequestration and retention in two ways: (1) apply silvicultural practices that change residual tree growing space by increasing the allocation of that space, water, and nutrients for increased growth and (2) use the current non-value removed biomass to create biochar. In addition, the presentation will cover how C sequestered during biochar application, in combination with sustainable biomass production, can be C negative and therefore used to actively remove CO_2 from the atmosphere with different applications. Pre-registration is not required! CEU available: Georgia Master Timber Harvester - Continuing Logger Ed. (GaMTH CLE) - 1 hour CLE - MTH Category B Credit; Certificate of participation. CEU applied for: New York Logger Training - Trained Logger Certification (NYLT-TLC) - .25 hour NYLT TLC Credit; Society of American Foresters - Certified Forester Education (SAF-CFE) - 1 hour Category 1 Credit. Plan to **join the webinar** 15 minutes early.

***February 22-26, 2021 at 3:30 p.m. Eastern time. SCIENCEx Webinars, SCIENCE x Invasive Species.** (Sponsored by USDA Forest Service Research & Development) Speakers: Multiple speakers. See the **full announcement** for more information. Topics include invasive tree pests and pathogens, invasive tree diseases, invasive aquatics, invasive animals & animal pathogens, and invasive plants. The Adobe Connect room is limited to 500 participants, so join early.

***March 5, 2021 at 2:00 p.m. Eastern time. Benefits and Costs of Natural Climate Solutions in Maine – Part 2: Forestry.** (Sponsored by USDA Northeast Climate Hub) Speakers: Dr. Adam Daigneault (Assistant Professor, University of Maine, Orono, ME) and Dr. Erin Simons-Legaard (Research Assistant Professor, University of Maine, Orono, ME). Natural climate solutions are defined as "conservation, restoration, or improved land management actions that increase carbon storage or avoid greenhouse gas emissions across forests, wetlands, grasslands, and agricultural lands." Natural solutions are typically found to be a cost-effective way to mitigate climate change while also providing other ecosystem services. Researchers from the University of Maine will explain how to quantify the benefits and costs of different natural climate solutions that can be applied to forestry in the northeast, the opportunities and barriers to implementation, and how forests could help achieve Maine's climate change mitigation goals. Pre-registration is not required! CEU available: Certificate of participation. Plan to **join the webinar** 15 minutes early.

***March 10, 2021 at 1:00 p.m. Eastern time. Invasive Grasses in the Southeastern United States.** (Sponsored by Southern Regional Extension Forestry) Speaker: Dr. Nancy Lowenstein (Alabama Extension Specialist, Auburn University). This webinar will discuss a variety of invasive grasses throughout the southeastern United States. Invasive grasses rapidly invade disturbed areas, including pastures, fallow fields, forests, and highway and powerline rights-of-way. Infestations can impact the diversity of native species, reduce wildlife habitat, and disrupt important ecosystem functions. Seeds are typically wind-dispersed, but the plant can spread vegetatively through rhizomes (roots); these rhizomes can be spread to new places on vehicles and equipment.

Seeds of many invasive grasses can remain viable in the soil for years. As such, control of invasive grasses is difficult, time-consuming, and expensive, involving a combination of mechanical and chemical treatments. Pre-registration is not required! CEU available: Certificate of participation. Plan to **join the webinar** 15 minutes early.

*M**arch 16-17, 2021 at 10:00 a.m. Eastern time. 21st Biennial Southern Silvicultural Research Conference.** (Sponsored by Mississippi State University Forestry) Speakers: Multiple speakers. The 21st Biennial Southern Silvicultural Research Conference (BSSRC) has gone virtual! **Register** for this exciting virtual workshop as instructed in the **full announcement**! This two day conference will be held March 16-17, 2021. Registration fee is $75.00 for professionals and $25.00 for Students. This conference includes 6 concurrent sessions, a poster session and continuing education credits! See the **full announcement** for more information. CEU available: Certificate of participation. CEU applied for: Georgia Master Timber Harvester - Continuing Logger Ed. (GaMTH CLE) - 1 hour CLE - MTH Category B Credit; New York Logger Training - Trained Logger Certification (NYLT-TLC) - .25 hour NYLT TLC Credit; and Society of American Foresters - Certified Forester Education (SAF-CFE) - 15 hour Category 1 Credit.

*Announcing a new **IUFRO webinar series** co-hosted by the working parties 7.03.05 (Ecology and Management of Bark and Woodboring Insects) and 7.03.16 (Behavioural and Chemical Ecology of Forest Insects) and will focus on the Behavioural and Chemical Ecology of Bark and Woodboring Insects. The format of the talks will include a short introductory talk by the webinar coordinator (5-10 min) followed by 2-3 short research talks (45-50 minutes total) and concluding with an open discussion period with the speakers (ca. 25 min) so that the total length of each webinar will be about 90 minutes. To track participation and protect against unwelcome visitors you are asked to **register** for the webinar series (you will receive a confirmation email after you register and then the week of each seminar an email with the zoom link for the webinar). If you registered for the last webinar series, please register again as the database has been reset. The webinars are co-hosted by the Forestry and Agricultural Biotechnology Institute, University of Pretoria, the Institute for Forest Entomology, Forest Pathology and Forest Protection, BOKU, the Universidad de la Republica, Uruguay, and the Canadian Forest Service. If you are unable to attend a webinar live but would like to view it, recordings of the webinars will be posted at a YouTube channel. The next two webinars are listed here:

- **February 18, 2021 - Finding a Point Source of Odor in a Turbulent World: Mechanisms and Constraints. Speaker:** Ring Carde, University of California-Riverside
- **March 4, 2021 - Climate Change Effects on Bark Beetle Range Expansion, Community Associates and Outbreak Dynamics. Speaker:** Barbara Bentz, USDA Forest Service, Rocky Mountain Research Station

***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.

- **February 17, 2021 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 geodatabases and discuss different methods of editing in a multi-user / SDE environment.
- **February 17, 2021 at 10:00am – 4:00pm (Mountain Time). Integrating Digital 3D Imagery into Your Geospatial Workflows** (**Technical** - **RS**).
- **February 18, 2021 at 10:00am – 4:00pm (Mountain Time). ArcGIS Pro for ArcMap Users** (**Technical** - **GIS-Desktop**) This course is designed as a bridge between using ArcMap and ArcCatalog to ArcGIS Pro. This course provides a hands-on introduction to participants of ArcGIS Pro's updated user interface and project platform. Participants will walk through common workflows previously performed in ArcMap and ArcCatalog such as navigation, editing, analysis, sharing, symbolizing, creating a layout, geoprocessing, querying and importing maps and data.
- **February 23, 2021 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.
- **February 24, 2021 at 10:00am – 12:00pm (Mountain Time). Google Earth Engine** (**Awareness** - **RS**).

- **February 24-25, 2021 at 10:00am – 4:00pm (Mountain Time). ArcMap – Managing Forest Service SDE Geodatabases** (**Technical - GIS-Desktop**) **Forest Service Only** This course is intended for unit GIS Coordinators or SDE Managers who are responsible for their ArcSDE Geodatabases. The class covers the skills needed to manage ESRI ArcSDE geodatabases in the Enterprise Data Center (VDC) and Natural Resource Management (NRM) environments. Management includes loading data, coordinating access to the data, assuring the database is maintained by analyzing, rebuilding indexes, and managing versions owned by other users. Users attending this class must have knowledge of ESRI geodatabases, familiarity with editing in a geodatabase and the responsibility for spatial data administration. If these are your job duties, this course is for you.
- **February 25, 2021 at 10:00am – 4:00pm (Mountain Time). Raster Function in ArcGIS Pro (Technical - RS).** The objectives are as follow: learn how to work with raster data in ArcGIS Pro; learn how to use raster functions and other raster processing tools in ArcGIS Pro; and learn how to conduct common raster workflows using raster functions and other tools in ArcGIS Pro.
- **February 25, 2021 at 10:00am – 4:00pm (Mountain Time). ArcGIS Collector and Field Maps – Field Data Collection** (**Technical - GIS-Mobile**) **Forest Service Only** This course shows how to set up a phone/tablet for use in the field using existing maps, how to use the app to collect data, and how to sync and then review the data in ArcGIS Online. The new Markup tool will be discussed. TPK basemap download and use will be shown.
- **March 2, 2021 at 10:00am – 11:00am (Mountain Time). Landsat Image Acquisition in Google Earth Engine** (**Lightning talk - RS**).
- **March 2-3, 2021 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.
- **March 3, 2021 at 2:00pm – 3:00pm (Mountain Time). ArcGIS Field Maps App – Demonstration of the New Tools** (**GIS-Web**).
- **March 4, 2021 at 8:00am – 10:00am (Mountain Time). Region 5 Story Map Webinar (GIS-Web**).
- **March 4, 2021 at 10:00am – 4:00pm (Mountain Time). Lidar Point Cloud Processing** (**Technical - RS**).
- **March 4, 2021 at 10:00am – 4:00pm (Mountain Time). ArcGIS Collector and Field Maps – Field Data Collection** (**Technical – GIS Mobile**) **Forest Service Only**.
- **March 9, 2021 at 10:00am – 12:00pm (Mountain Time). Raster Calculator Awareness (webinar)** (**Awareness - RS**).

- **March 9, 2021 at 10:00am – 4:00pm (Mountain Time). 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 in order to prepare outputs for NEPA specialist reports.
- **March 10, 2021 at 10:00am – 12:00pm (Mountain Time). MTBS Data Explorer** (**Awareness** - **RS**).
- **March 16, 2021 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.
- **March 17, 2021 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.
- **March 17, 2021 at 10:00am – 4:00pm (Mountain Time). Introduction to eCognition** (**Technical** - RS).
- **March 18, 2021 at 10:00am – 11:00am (Mountain Time). Image Analysis Window** (**Awareness** - RS).
- **March 23, 2021 at 10:00am – 4:00pm (Mountain Time). ArcMap – Working with Tables** (**Technical** - **GIS-Desktop**) Participants will learn how to work with tabular information in ArcGIS. The course covers how to use different commands and functions within tables, query attribute data, and join and relate tables. Suggested background: The prerequisites for this class are the Quick Start course or basic GIS skills (Participants must be open projects, load data, understand Data Frame and layer properties, and be able to manage GIS data in ArcCatalog).
- **March 24, 2021 at 10:00am – 4:00pm (Mountain Time). Introduction to Web GIS using ArcGIS Online** (**Technical** – **Web GIS**) **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 the mobile app ArcGIS Collector. Finally, we will create a web app to view our completed web map.
- **March 24, 2021 at 10:00am – 4:00pm (Mountain Time). Introduction to Structure from Motion** (**Technical** - RS).
- **March 25, 2021 at 10:00am – 4:00pm (Mountain Time). ArcGIS Collector and Field Maps – Field Data Collection** (**Technical** - **GIS-Mobile**) **Forest Service Only** This course shows how to set up a phone/tablet for use in the field using existing maps, how to use the app to

collect data, and how to sync and then review the data in ArcGIS Online. The new Markup tool will be discussed. TPK basemap download and use will be shown.

- **March 25, 2021 at 10:00am – 4:00pm (Mountain Time). Advanced eCognition** (**Technical** - RS).
- **March 30, 2021 at 10:00am – 4:00pm (Mountain Time). Forest Service Geospatial Resources** (**Technical** – **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.
- **March 31, 2021 at 10:00am – 4:00pm (Mountain Time). TEUI Geospatial Toolkit** (**Technical** – **Data Management**). **Forest Service Only.**
- **March 31, 2021 at 1:00pm – 2:00pm (Mountain Time). ArcGIS Online Dashboard App Awareness Talk** (**Awareness** – **Web GIS**). This talk will introduce you to what a dashboard is and how to design and create one. We will look at dashboard examples and demonstrate how to create and use a dashboard.

*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 (https://www.srs.fs.usda.gov/webinars/science-in-practice/) website. These 30-minute webinars focus on practical takeaways for land managers. Visit the web site for more information. The web address can be copied into your browser.

PUBLICATIONS OF INTEREST

1. **Nelson, C.D.; Koch, J.L.; Sniezko, R.A., eds.** 2020. Proceedings of the sixth international workshop on the genetics of host-parasite interactions in forestry - tree resistance to insects and diseases: putting promise into practice. General Technical Report SRS-252. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 170 p. https://www.srs.fs.usda.gov/pubs/61836 (put in browser)

2. **Poland, T. M.; Patel-Weynand, T.; Finch, D.M.; Ford Miniat, C.; Hayes, D.C.; Lopez, V.M.** 2021. Invasive species in forests and rangelands of the United States: a comprehensive science synthesis for the United States forest sector. Heidelberg, Germany: Springer International Publishing. 455 p.

3. **Rogers, P. G.** 2021. Pando to Pangea. Earth Island Journal.

4. **State of Arizona Forest Health Program.** 2020. Arizona forest health conditions 2020. Phoenix, AZ: Forest Health Program of the Arizona Department of Forestry and Fire Management. 12 p.

FOR MORE FHM INFORMATION

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