Forest Health Monitoring Program
Monthly Update
April 2019

WHAT'S NEW

Get to know FHM. This month get to know **the Forest Health Monitoring (FHM) Program Management Team.** The core Management Team consists of the National Program Manager, located in Washington D.C., the five Regional Program Managers (one for each FHM region), State representatives, (one from each FHM region), a representative from the Southern Research Station's Forest Health Monitoring Research Unit, the National Program Leader of the Forest Service's Forest Inventory and Analysis (FIA) Program, and the Director of the Forest Service's Forest Health Assessment & Applied Sciences Team (FHAAST). You can contact any of these members for more information about the FHM activities happening in your area or anywhere in the United States and related Pacific Islands.

Position	Name and Title	Affiliation	Email Address
National Lead	**Tom Eager** National Program Manager Forest Health Monitoring (FHM)	US Forest Service, Forest Health Protection, Washington Office	tom.eager@usda.gov
Regional Lead	**Chris Asaro** South Regional Program Manager	US Forest Service, Forest Health Protection, Region 8	christopher.asaro@usda.gov
Regional Lead	**Harris, Jeri Lyn** Interior West Regional Program Manager	US Forest Service, Forest Health Protection, Region 2	jeri.harris@usda.gov
Regional Lead	**Vacant** Northcentral Region Program Manager	US Forest Service, Forest Health Protection, Northcentral Region	Contact Jim Steinman jim.steinman@usda.gov
Regional Lead	**Karen Ripley** West Coast Regional Program Manager	US Forest Service, Forest Health Protection, Region 6	karen.ripley@usda.gov
Regional Lead	**Steinman, Jim** Northeast Regional Program Manager	Forest Health Protection, Northeast Area	jim.steinman@usda.gov
State Representative	**Halman, Joshua** Northeast MegaRegion	Vermont Department of Forest, Parks and Recreation	Joshua.Halman@vermont.gov
State Representative	**Amy Gannon** Interior MegaRegion	Montana Department of Natural Resources and Conservation	agannon@mt.gov

State Representative	**Marshall, Phillip** Northcentral MegaRegion	Indiana Division of Forestry	pmarshall@dnr.in.gov
State Representative	**Smith, Tom** West Coast MegaRegion	California Department of Forestry	tom.smith@fire.ca.gov
State Representative	**Barton, Chandler** South MegaRegion	Arkansas Forestry Commission	chandler.barton@agriculture.arkansas.gov
Other Forest Service Representative	**Koch, Frank** Research Ecologist, Forest Health Monitoring Research Unit	Southern Research Station	frank.h.koch@usda.gov
Other Forest Service Representative	**Reams, Greg** National Program Manager, Forest Inventory and Analysis (FIA)	Research and Development, Washington Office	greg.reams@usda.gov
Other Forest Service Representative	**Sapio, Frank** Assistant Director Forest Health Protection (FHP), Director, Forest Health Assessment & Applied Sciences Team (FHAAST)	Forest Health Assessment & Applied Sciences Team Fort Collins	frank.sapio@usda.gov

NEWS ABOUT FHM PARTNERS

The USDA Forest Service Geospatial Technology and Applications Center (GTAC) announces their recently released new GTAC web site. This site can be used to learn more about GTAC; find geospatial data, maps, and other products; register for remote sensing, GIS, and mobile GIS training; connect with GTAC programs to explore how GTAC can assist your business area; and eventually link to other geospatial resources throughout the agency.

UPCOMING EVENTS

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

October 30-November 3, 2019. Louisville, Kentucky. The 2019 Society of American Foresters National Convention. The call for presentations is now available. The deadline for presentation and proposals for professional development seminars and workshops was March 31. The deadline for science flashes and posters is **August 31.** For complete information about the convention as it becomes available, visit the **convention web site**.

***November 19-21, 2019.** Knoxville, Tennessee. 2019 Forest Inventory and Analysis Science Meeting: Celebrating Progress, Possibilities, and Partnerships. The USDA Forest Service, Forest Inventory and Analysis (FIA) Program is pleased to announce the 2019 FIA Science Meeting, hosted by the U.S. Forest Service Southern Research Station and the National Council for Air and Stream Improvement, Inc. (NCASI). The theme of the 14th biennial Science is *Celebrating Progress, Possibilities, and Partnerships*, emphasizing innovation in maximizing use of the FIA "annual" sample design and data; development of delivery tools to meet client needs; integration of more powerful and efficient monitoring technologies and statistical techniques into established analyses; and implementation of FIA's expansion into areas such as enhanced timber product monitoring, improved carbon/biomass estimates, enhanced ownership study, land cover/use research, urban inventory, monitoring of Interior AK, and small area estimation. The Symposium brings together international forest scientists, managers, and stakeholders with regional, national, and international inventory and monitoring missions. The first call for organized sessions, presentations, and demonstrations (digital engagement including applications, tools, databases, websites, storymaps, digital poster) is available. The deadline for **oral presentation abstracts is June 28, 2019** and for **digital engagement abstracts is August 30, 2019**. Abstract must be submitted **online**. Note that submitted abstracts will be distributed digitally at the meeting. Meeting presenters are encouraged to more fully document their contributions by submitting an extended abstract for inclusion in a General Technical Report to be published shortly after the conclusion of the meeting. Extended abstract submission details will be provided to all authors and made available on the meeting website. For more information, contact the meeting organizers at fis_science@fs.fed.us or visit the **symposium web site**.

SAVE THE DATE! February 25-27, 2020. Raleigh, North Carolina. **The National Forest Health Monitoring (FHM) Workshop.** To be held at the Nature Research Center at the North Carolina Museum of Natural Sciences in downtown Raleigh, NC. This will be a working meeting that will draw State and Federal cooperators together to discuss forest health issues and make recommendations about the future direction of the FHM Program. Please save the date now; the agenda, and lodging and travel materials will be available as soon as possible. For further information, please contact FHM National Program Manager, Tom Eager at teager@fs.fed.us or 202-572-0387. Watch future *Monthly Updates* for updated information.

UPCOMING WEBINARS

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

***April 24, 2019 at 1:00 p.m. Eastern time. Invasive Bamboo Management in the Southeastern U.S.** (Sponsored by Southern Regional Extension Forestry)

Speaker: Dr. Deah Lieurance (Assistant Extension Scientist, University of Florida). Bamboo is a large perennial grass that has been used as an ornamental plant in the United States for many years. Most imported bamboos that are fast growing, highly invasive, and difficult to contain. This is because the root structures of most invasive varieties are made up of large networks of underground rhizomes that must be targeted to kill the plant. This webinar will cover the biology, identification and management of several common invasive bamboo species in the southeastern U.S. No pre-registration is required! 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. CEU available: Certificate of Participation. To access this free webinar, visit the **webinar information site** for more details. Plan to join the webinar 15 minutes early.

*__May 14, 2019 at 12:00 p.m. Mountain Daylight time. Native Mycorrhizal Fungi and Whitebark Pine Restoration.__ (Sponsored by Utah State University Forestry Extension and Montana State University Extension, Integrated Pest Management) Speaker: Dr. Cathy Cripps (Professor & Mycologist, Montana State University). Whitebark pine (*Pinus albicaulis*) is an iconic, five-needle, high-elevation pine whose existence is threatened by an exotic rust, mountain pine beetles, fire suppression, and climate change. Its distribution is limited to western North America and populations have declined 90% in recent decades. Whitebark pine is shade intolerant and depends on wildfire to reset the "successional clock". Regeneration occurs mainly through germination of un-retrieved seeds planted by Clark's nutcrackers on burns following wildfires, however natural regeneration does not always follow wildfires or prescribed burning. Thousands of nursery seedlings are being planted across the landscape to compensate for losses, however survival rates are often low. This webinar will examine the potential use of native ectomycorrhizal fungi to improve seedling survival by describing the methods and results of greenhouse and field studies from Montana. CEU available the day of the webinar: To register for this free webinar symposium, visit the **webinar registration site.** Plan to join the webinar 15 minutes early.

*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 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. **GIS** listed after presentation type indicates GIS training. **RS** listed after the presentation type indicates remote sensing training. **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 (geotrainingadmin@fs.fed.us) and they will register you manually.**

- **April 11, 2019 at 10:00 am – 4:00 pm (Mountain Time) Introduction to ArcGIS Online (Technical - GIS) Forest Service Only** This course covers how the Forest Service administers ArcGIS Online using roles and privileges, and how we leverage Forest Service data in this WebGIS platform. Participants will learn how to use AGOL to create simple web maps, create and manage groups, create a Story Map Journal web app, and learn how to work with ArcGIS Collector. Included in the course is an optional lesson on further exploring Story Maps by creating a Tour App. **Note: This is not an introductory course for ArcGIS Desktop. If you are interested in an introductory training in ArcGIS, please see our ArcGIS 10.3 Quick Start course.
- **April 12, 2019 at 10:00 am – 4:00 pm (Mountain Time) Collector for ArcGIS in the Forest Service (Technical - GIS) Forest Service Only** This introductory webinar covers GPS data collection using the Collector app on a tablet or smart phone. The GIS data and map setup is also discussed. You will need a smart phone or tablet, an internet connection for setting up the device, and a Forest Service ArcGIS Online account.
- **April 16, 2019 at 10:00 am – 4:00 pm (Mountain Time) ArcGIS 10.5 - Spatial Analyst (Technical - GIS)** 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.
- **April 16, 2019 at 10:00 am – 4:00 pm (Mountain Time) ArcGIS 10.5 - Spatial Statistics (Technical - GIS)** 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 the distribution and relationship of spatial features and any significant patterns that may exists. Participants will also learn how to analyze patterns in spatial data and identify locations of statistically significant spatial clusters and/or dispersion.

- **April 16, 2019 at 10:00 am – 4:00 pm (Mountain Time)** **Introduction to FUSION** (**Technical - RS**) This technical webinar provides an introduction to FUSION, a freely available lidar viewing and analysis software suite developed and maintained by the USFS Pacific Northwest Research Station. FUSION offers a diverse range of tools for extracting critical information from lidar point clouds (e.g., canopy height and canopy cover) that participants can apply to their own resource areas. Participants will be introduced to both the graphical user interface used to visualize and analyze the point cloud, as well as the command line interface used to execute the numerous powerful tools available in FUSION. A series of step-by-step exercises instruct users how to download FUSION, navigate through some basic functions, and how to extract canopy metrics from the point cloud.
- **April 18, 2019 at 10:00 am – 12:00 pm (Mountain Time)** **Forest Service Geospatial Resources** (**Awareness - GIS**) **Forest Service Only** This course is for people who are new to the Forest Service or new to GIS and need to learn about the geospatial data, protocols, and platforms available in the Forest Service. PLEASE NOTE: This course will not teach you how to use specific GIS software. If you are new to GIS, we recommend you take the GSTC ArcGIS 10.3 Quick Start class, or the Introduction to ArcGIS Online course.
- **April 23, 2019 at 10:00 am – 4:00 pm (Mountain Time)** **Survey 123 Form Creation** (**Technical - GIS**) **Forest Service Only** Create survey forms for the Survey123 app using the Survey123 web application and Survey123 Connect. Create simple smart forms with relevant questions and drop down lists. Customize the look of your form. Analyze resulting survey data and create AGOL map. A Forest Service ArcGIS (AGOL) account and Survey123 Connect software are required for this course. Audience: Forest Service employees ready to move their paper and electronic forms into Survey123.
- **April 23, 2019 at 10:00 am – 4:00 pm (Mountain Time)** **ArcGIS 10.5 - Editing** (**Technical - GIS**) This class demonstrates editing environment in ArcGIS Desktop 10.5. 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.
- **April 24, 2019 at 10:00 am – 4:00 pm (Mountain Time)** **Using the Terrestrial Ecological Unit Inventory (TEUI) Toolkit** (**Technical - RS**) The TEUI Toolkit is a national application based on the Forest Service's Terrestrial Ecological Unit Inventory Technical Guide. However, the Toolkit can be used for any polygon and raster based mapping efforts. Its benefits are to help users utilize geospatial data, visualize landscapes, characterize environmental conditions, assess product quality through validation, and do so in a consistent and repeatable manner. In this class, students will learn to install the TEUI Toolkit ArcGIS Add-In, manage

their data, run statistics, visualize the data with graphs and charts, design a sampling scheme, produce a connotative legend, and more.

- **April 24-25, 2019 at 10:00 am – 4:00 pm (Mountain Time) ArcGIS 10.5 - Managing SDE Geodatabases (Technical - GIS) 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 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.
- **April 25, 2019 at 10:00 am – 11:30 pm (Mountain Time) Using the Raster Calculator in ArcMap (Awareness - RS)** ArcMap's raster calculator is a powerful tool that utilizes map algebra to perform basic to complex operations on images. This awareness webinar will provide instructions on how to navigate the raster calculator interface and describe the different functions available through this tool. Examples on how to do mathematical transformations, pixel type conversions, and habitat suitability will be used to demonstrate the usefulness of the raster calculator.
- **April 30, 2019 at 10:00 am – 4:00 pm (Mountain Time) ArcGIS Pro for ArcMap Users (Technical - GIS) Forest Service Only** **USFS organizational account for AGOL and ArcGIS Pro required, see other info for more details** This course is designed as a crosswalk between using ArcGIS Desktop and ArcGIS Pro. This course provides a hands on introduction to participants of Pro's new user interface and project management. Participants will walk through common workflows previously performed in ArcMap/Catalog such as navigation, editing, analysis, sharing, symbolizing, creating a layout, geoprocessing, importing maps and data, and querying. ArcGIS Pro is a projects based application. A project contains maps, layouts, layers, tables, tasks, tools, and connections to servers, databases, folders, and styles. Projects can also incorporate content from your organization's Portal or ArcGIS Online accounts.

GTAC annual post-fire mapping webinars - The USDA Forest Service Geospatial Technology and Applications Center (GTAC) conducts post-fire mapping and assessment activities in three distinct but related programs: Burned Area Emergency Response (BAER) Imagery Support, Rapid Assessment of Vegetation Condition after Wildfire (RAVG), and Monitoring Trends in Burn Severity (MTBS). Each of these mapping programs will host a half-day webinar designed to provide participants a greater understanding of the program, including the fire mapping and assessment protocols it employs, the data products it delivers, and ways to access and work with those data. Each training

will include an instructor-led GIS demonstration providing examples of how to analyze the data, integrate it with local GIS layers for further analysis, and edit the data, if needed. Participants will be provided sample data and step-by-step instructions to complete the GIS exercise on their own or to follow along during the demonstration. Follow the course links below for additional information and registration. Please register by the close of business the day before the webinar to allow the instructors time to provide course materials and connection information. **If you have questions or enrollment issues, please contact the individual course instructor.**

- **April 17, 2019 at 10:00 am – 1:00 pm (Mountain Time) Understanding and Using RAVG Data** (Course instructor: Craig Baker, craig.baker@usda.gov) This webinar will describe the post-fire vegetation condition assessment tool that is applied across the Forest Service, as well as customizations to address local needs. It is intended for (but not limited to) those who are involved in vegetation analysis, planning or response following large fires on NFS lands (e.g., reforestation, salvage or habitat-related activities).
- **April 24, 2019 at 10:00 am – 1:00 pm (Mountain Time) Using the BARC for BAER Support (**Course instructor: Justin Epting, justin.epting@usda.gov) This webinar will describe how Burned Area Reflectance Classification (BARC) maps are created and how they can be modified by BAER team GIS Specialists. If you anticipate working on a BAER team this season, or would like to know more about GTAC's support for BAER teams, please join us in this webinar.
- **May 1, 2019 at 10:00 am – 1:00 pm (Mountain Time) Understanding and Using MTBS Data (**Course instructor: Michael (Seth) Bogle, michael.bogle@usda.gov) This webinar provides an awareness overview of the MTBS mapping program, the mapping methods it employs, how to search for and download fire data from the MTBS website, and potential applications of the MTBS dataset on your local landscape.

Job Opportunities

The State of Washington, Department of Natural Resources invites applications for the position of Planning, Science & Monitoring Assistant Division Manager. This is a full-time, permanent Washington Management Service (WMS) position located in Olympia, WA. It will require approximately 2-8 days away from the duty station per month that includes overnight travel for meetings, conferences and other events throughout Washington State, as well as some regional and national events. This position supports DNR's and the Forest Health Division's mission by recommending and implementing policies and procedures directed at ensuring cost-efficient and effective forest health science, monitoring, technical assistance, and planning practices, and efficient grant

management and compliance procedures. This position is responsible for the overall management of the following statewide programs: forest health monitoring, including the aerial insect and disease survey, forest entomology, forest pathology, forest health technical assistance, 20-Year Forest Health Strategic Plan, Forest Action Plan, forest health assessment and planning, and forest health partnerships. This position provides strategic leadership to ensure programs are safely and effectively planned and implemented in alignment with agency policies and priorities and in coordination with Federal, State, tribal, and local agencies and governments and private stakeholders. This position is responsible to work closely with staff, other DNR Divisions, DNR leadership and numerous stakeholders, other State and Federal agencies, tribes and private forest landowners on forest health planning, assessment and monitoring efforts across the State. This position supervises and mentors staff to help set work priorities, ensure staff have adequate resources to perform their job and ensure forest health performance measures and deliverables are met. **The opening date for this position is 03/27/19 and the closing date is 04/14/19 11:59 P.M**. To be considered you must apply **online (www.careers.wa.gov).** Click on "Look for Jobs" and enter the position title (Planning, Science & Monitoring Assistant Division Manager) in the search box for complete information about the position including the application process. *Washington State Department of Natural Resources is an Equal Opportunity Employer and prohibits discrimination and harassment of any kind. We are committed to providing equal employment opportunities in a fair and impartial manner for all persons without regard to age, sex, marital status, sexual orientation, gender identity, race, creed, color, national origin, religion, pregnancy/parental status, genetic information, military status, political affiliation, criminal history or the presence of any sensory, mental or physical disability or the use of a trained service animal by a person with a disability. Persons with a disability who need assistance during the screening process or those needing this announcement in an alternative format may contact DNR Recruiting staff (360) 902-1350 or (360) 902-1128. DNR may be contacted using the Washington State Telecommunications Relay Service (TRS) by dialing 711.*

PUBLICATIONS OF INTEREST

1. **Guo, G.; Fei, S.; Potter, K.M.; Liebhold, A.M.; Wen, J.** 2019. Tree diversity regulates forest pest invasion. Proceedings of the National Academy of Sciences. Available online (https://doi.org/10.1073/pnas.1821039116).

2. **Potter, K.M.; Escanferla, M.E.; Jetton, R.M.; Man, G.** 2019. Insect and disease threats to United States tree species and geographic patterns of their potential impacts. Forests. 10(4). Available online (https://doi.org/10.3390/f10040304).

FOR MORE FHM INFORMATION

Visit the FHM homepage and the Forest Health Portal
or access both via the **USDA Forest Service homepage**