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Raising public awareness of invasive forest pests with online ArcGIS dashboard

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Invasive pests have long been recognized for the various threats they pose to natural ecosystems and the major economic damages they cause. If invasive pests left unchecked, it can result in a reduction in natural biodiversity, harm to specific populations, and a loss of overall ecosystem function from local to regional scales. Public awareness is the key for the prevention, early detection, eradication, and/or mitigation of invasive pests. Here, we introduce Alien Forest Pest Explorer (AFPE), an interactive web-based ArcGIS dashboard to engage and educate the general public, as well as natural resource managers. AFPE provides detailed spatial data describing pest distributions and host inventory estimates for damaging, nonnative forest insects and pathogens currently established in the United States. To date, the AFPE database includes 74 species of forest insects and 15 species of forest pathogens. It provides (1) national distribution for each of the invasive pest and (2) their corresponding damage and invasion risks at any user-defined geospatial scales within the continental U.S. Our AFPE dashboard can also be embedded by any web-services hosted by private organizations and public agencies to facilitate the knowledge disseminations and raise the awareness of the most damaging pests to our forest ecosystems.

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