

FORESTRY-RELATED PATHWAYS FOR THE MOVEMENT OF EXOTIC PLANT PESTS INTO AND WITHIN THE GREATER CARIBBEAN REGION

Leslie Newton¹, Heike Meissner¹, and Andrea Lemay¹

¹USDA APHIS PPQ CPHST, Plant Epidemiology and Risk Analysis Laboratory, Raleigh, NC 27606-5202

ABSTRACT

Forests of the Greater Caribbean Region (GCR) are important ecologically and economically. These unique ecosystems are under increasing pressure from exotic pests, which may cause extensive environmental damage and cost billions of dollars in control programs, lost production, and forest restoration. Forests may serve as both the source of exotic species when wood or non-wood forest products are exported, and as the area at risk from the introduction of pests. Our objectives were to outline important forestry-related pathways of pest movement and to offer suggestions for improved safeguarding. We reviewed scientific literature, interception data, international forestry sites, and other sources of information to determine potential pathways. Forestry-related pathways include raw wood products (logs, chips, railway ties, firewood), non-wood forest products, and trees for planting. Pests may infest these commodities prior to harvest or transport, or may attach themselves as hitchhikers at any time during the extraction, transport, or trading process.

Countries within the GCR import and export thousands of metric tons of raw wood products each year. Forest pests associated with raw wood products include bark and ambrosia beetles (Coleoptera: Curculionidae: Scolytinae), wood boring beetles (Buprestidae), longhorned beetles (Cerambycidae), and horntail

wasps (Hymenoptera: Siricidae), and pathogenic fungi. Minimally processed wood items, such as wooden handicrafts, musical instruments, tools, and toys may harbor pests. Non-wood forest products include food products, medicinals, bark for dyes and tannins, rattan, palms, and bamboo. We identified more than 300 species of forest pests with limited or no distribution in the GCR that are known to move on raw wood or NWFPs. While this review is not exhaustive, it demonstrates the variety of pests that move on raw wood and NWFP pathways.

Numerous exotic trees have become invasive throughout the GCR. Introduced for plantations or agroforestry, these species are chosen for traits such as rapid growth, high fecundity, and the ability to fix nitrogen – the same characteristics that may enhance their invasive potential. These species can form dense thickets or monocultures, replace native vegetation, disrupt activities of native fauna, and lower the water table. Some invade undisturbed forests, changing species composition and decreasing biodiversity.

The work presented here was carried out in the framework of the CISWG Caribbean Pathway Analysis. The full report is available at: <http://caribbean-doc.ncsu.edu/index.htm>.