

pests the IPPC Guidelines were developed to control have been intercepted at U.S. ports for many years, and pose significant risks to U.S. resources. Recent interceptions of pests at ports of entry show a steady increase in serious pests associated with SWPM from everywhere except China, whose SWPM must already be treated due to past pest interceptions. If left unchecked, pests imported with SWPM have the potential to cause significant economic damage to the agricultural and forest resources of the United States. The damage they cause could be similar in magnitude to the recent introduction of the Asian long-horned beetle (ALB) *Anaplophora glabripennis* (Coleoptera: Cerambycidae). Our regulations have already been changed to prevent further introductions of ALB from China, but adopting the IPPC guidelines could prevent the introduction of ALB or similar wood borers from other parts of the world, as well as prevent the introduction of other types of pests such as woodwasps and bark beetles. Imposing the IPPC guidelines' treatment and other requirements to prevent these introductions would yield net benefits. The benefits (avoided losses) that can be gained by preventing introduction of these pest types are discussed below. The actual magnitude of the benefits cannot be definitively ascertained, but they are likely to be much larger than the associated costs.

As an indicator of the damage ALB or similar wood borers could cause if introduced again in the future, consider the costs of the ALB introduction from China. The ALB, first discovered in New York City in 1996 and in Chicago, Illinois in 1998, was most likely introduced on wood packing material from China. The present value of urban trees at risk in the two affected cities is estimated at \$59 million over some 50 years. About \$6 million of urban trees have been destroyed due to pest infestation and eradication efforts since the introduction of ALB. So far, APHIS and State and local governments have spent over \$59 million in eradicating the pest in the two localities. If only New York City and Chicago were considered, it would appear that the current eradication program has yielded a net loss of about \$6 million (spending \$59 million in control activities to save \$53 million in resources). However, the eradication and quarantine activities are also the reason the pest has been confined to the two cities where it was initially detected. The potential damages from ALB spread to other areas can be gleaned from the Nowak *et al.*

study that estimated losses to seven other cities. The present value of damage to urban trees in Baltimore City alone, not allowing for intervention, was estimated to be \$399 million. Additionally, without governmental intervention, forest resources would also be at risk.

Wood borers such as ALB could cause the most damage of all types of pests associated with SWPM, but we have also projected that other types of pests could cause substantial damage. These include the Sirex woodwasp (Family: Siricidae) and the Eurasian spruce bark beetle (Family: Scolytidae). Projections of physical damages that can be caused by these types of pests range up to \$48—\$607 million and \$208 million, respectively. Perhaps the greatest devastation posed by these pests that cannot be fully captured monetarily is their potential to cause irreversible loss to native tree species and consequential alterations to the environment and ecosystem.

The recent introduction of the emerald ash borer (EAB), *Agrilus planipennis* (Coleoptera: Buprestidae) a pest of ash trees, in Michigan and parts of Canada in June 2002 is a reminder of this threat. It is not known how the pest arrived in North America but, as with other exotic beetles, infested SWPM from Asia is suspected. The pest may have arrived some five years ago, before the interim rule on China was implemented. Ironically, many of the large ash trees favored by the pest were originally planted to replace elm trees killed by Dutch elm disease caused by yet another exotic pathogen. A preliminary assessment of the potential impact of the EAB on urban and timberland ash trees in the six quarantined counties in Michigan comes to about \$11 billion in replacement costs alone. The nursery stock industry in the affected counties reported a loss in sales so far of \$2 million. These estimates serve to highlight the potential magnitude of damage that could be caused by one outbreak alone of a pest on the targeted list.

The adoption of the IPPC treatment standards for all importing countries would address pest threats posed not only by Cerambycidae, which was the primary target of the China rule, but nine other pest families as well. Approximately 95 percent of pests intercepted by APHIS inspectors in shipments worldwide are pests on the IPPC target pest list.

The treatment requirements proposed in this rule are not expected to completely eliminate all pest interceptions related to SWPM. As

evident from data reported between 2000 and 2001, two years following the implementation of the China rule, 7 percent of pest interceptions was still associated with China imports. To the extent that pest interceptions would be reduced, the risk of an outbreak would also be lower than in the absence of the rule. However, because pests continue to be intercepted albeit at a lower rate, benefits need to be correspondingly adjusted to reflect the risk.

In discussing the costs that might result from adopting this proposed rule, it is essential to recognize that to some degree these costs will accrue when other countries adopt the IPPC Guidelines, whether or not the United States also adopts them. As other countries impose IPPC treatment requirements on imports containing SWPM the global SWPM market will be greatly affected, likely causing a broader impact on the domestic wood packaging industry than the provisions of this proposed rule.

The impact of this rule would fall largely on foreign manufacturers of pallets. The increased treatment cost may add to the cost of packaging and transporting of goods which, in turn, would affect importers of commodities transported on pallets and final consumers of those goods are potentially impacted by this rule. The required treatments would add to the cost of packaging and transport of goods. Due to the very large number of pallets that are used to assist imported cargo, the overall cost may be substantial. The extent of the impact on U.S. consumers would depend on the ability of importers to pass on the additional costs to respective buyers. It is expected that most of the cost of treating pallets will be borne by foreign pallet manufacturers. Furthermore, given the small value of pallets as compared to the value of trade, increases in pallet prices are not expected to have a measurable effect on domestic consumers or on trade.

We also expect this proposed rule to affect U.S. purchasers of imported pallets, crates and boxes. Between 1999 and 2001, an average of 38 million pallets was imported into the United States, over 80 percent of which came from Canada. Imported SWPM was valued at \$150 million during this time period. At approximately \$3.95 per piece, imported pallets are less expensive than domestic pallets where the average price ranges between \$8 and \$12 per pallet. Canadian pallets are primarily used by industries close to the U.S. and Canadian border. The wood pallet market is highly competitive and the demand for imported pallets can be