



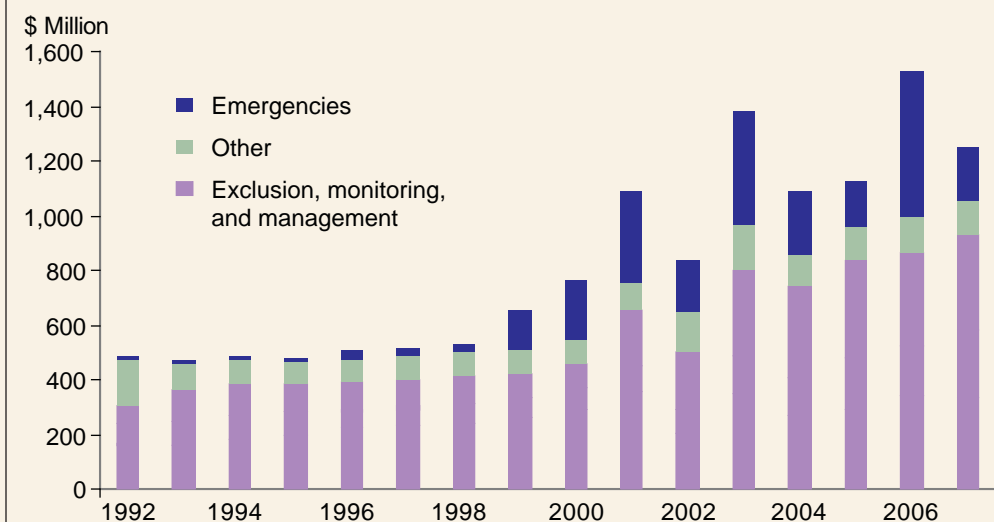
Economics of Invasive Species in Agriculture

Invasive species have been associated with billions of dollars in economic and environmental losses, including yield and quality losses for U.S. farmers and ranchers and lost export markets. Within USDA, the Animal and Plant Health Inspection Service (APHIS) has primary responsibility for handling invasive pests of significance to agriculture. The cost of efforts to prevent, monitor, and control pests (such as karnal bunt, citrus canker, and Mediterranean fruit flies) and animal diseases (such as bovine tuberculosis) have been increasing.

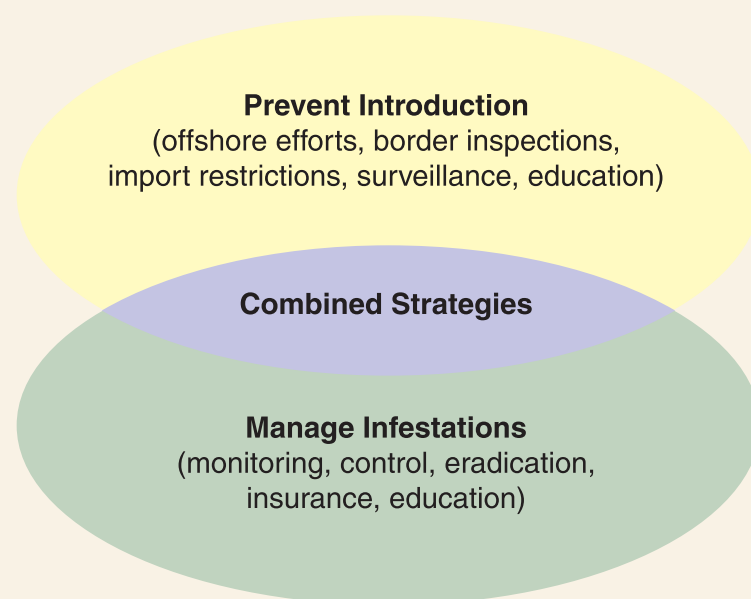
Policies or programs to minimize the threat of, or mitigate the damages from, invasive species may combine prevention, monitoring, eradication, control, or other strategies.

- The best approach depends on biological, ecological, and economic considerations.
- Economic analysis helps to assess tradeoffs and facilitates selection of the most efficient strategy.
- The tradeoffs depend on the vulnerability of agricultural and ecological systems to invasive species, the behavior of agricultural producers and other landowners when faced with the risk of economic loss, and the effectiveness and cost of prevention and management efforts.

APHIS expenditures by major category, 1992-2007



Approaches for dealing with the threat of invasive species

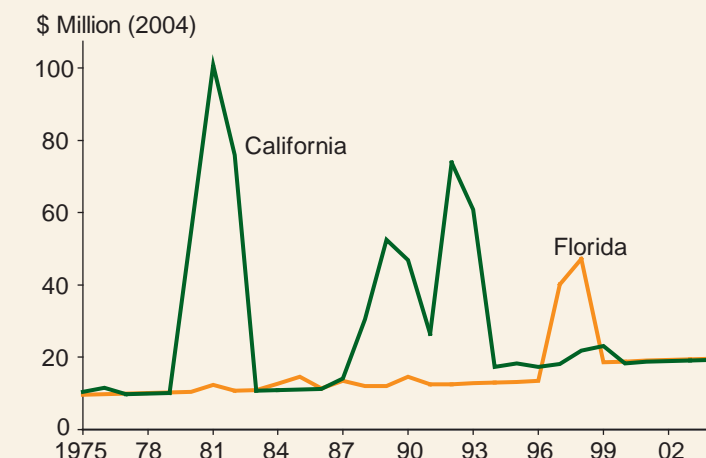


Economics of Preventing and Controlling Mediterranean Fruit Fly (Medfly) Infestations

The medfly is a significant pest of many important fruit and vegetable crops in California and Florida. They are difficult to detect in imports and after they are introduced into the United States. USDA therefore combines strategies to reduce the risk of new introductions with strategies that reduce the severity of new medfly infestations.

- To help prevent new infestations in the United States, USDA requires imports from countries where the medfly is known to exist to undergo preventive treatments, such as refrigeration, before arrival.
- Economic analysis shows that the optimal number of days to refrigerate imports increases with the severity of outbreaks abroad.
- To manage outbreaks that have occurred, millions of sterile medflies have been released weekly in California since 1994 and in Florida since 1999. This strategy reduced public eradication expenditures by over 96% in California during 1994-2004, and made additional eradication efforts in Florida unnecessary during 1999-2004.

Medfly detection and eradication expenditures, 1975-2004



Economics of Monitoring and Control Efforts To Manage Soybean Rust

By 2002, Asian soybean rust was established in all major soybean-producing areas of the world except for the United States. Because it spreads easily by wind, its entry onto U.S. shores was viewed as inevitable. USDA efforts, therefore, focus on helping soybean producers manage outbreaks, rather than preventing the introduction of the fungus or controlling its spread directly.

- Soybeans are grown over a wide area in the United States, and the incidence of rust outbreaks has varied considerably. For these reasons, substantial economic benefits can be derived by providing producers with timely information to facilitate soybean planting and disease management decisions.
- USDA has established a coordinated management framework to help soybean producers manage their exposure to soybean rust.
- U.S. soybean producers use this information to determine if and when fungicide applications might be necessary to minimize crop losses.

Location of U.S. soybeans (2005-07) and incidence of soybean rust (2006-08)

