THE AQUATIC NUISANCE SPECIES TASK FORCE and Invasive Aquatic Plants

Al Cofrancesco

June 2005

ANS Task Force History

- **Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990**
- **National Invasive Species Act of 1996**
  - Interagency Task Force
  - Ballast Water
  - Aquatic Nuisance Species Program
  - Regional Coordination/Panels
  - State ANS Management Plans
  - Emphasis on the Great Lakes/Broaden Focus

ANS Task Force Membership
Federal Members

- U.S. Fish and Wildlife Service (Co-chair)
- National Oceanic and Atmospheric Administration (Co-chair)
- U.S. Coast Guard
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture – Animal and Plant Health Inspection Service
- U.S. Environmental Protection Agency
- Department of State
- U.S. Geological Survey
- Smithsonian Environmental Research Center

ANS Task Force Membership
Ex-officio Members

- Great Lakes Commission
- American Water Works Association
- American Public Power Association
- Native American Fish and Wildlife Society
- International Assoc. of Fish and Game Agencies
- National Assoc. of State Aquaculture Coordinators
- Lake Champlain Basin Program
- Chesapeake Bay Program
- San Francisco Estuary Project
- Gulf States Marine Fisheries Commission
- Mississippi Interstate Cooperative Resources Assoc.

ANS Task Force Mission

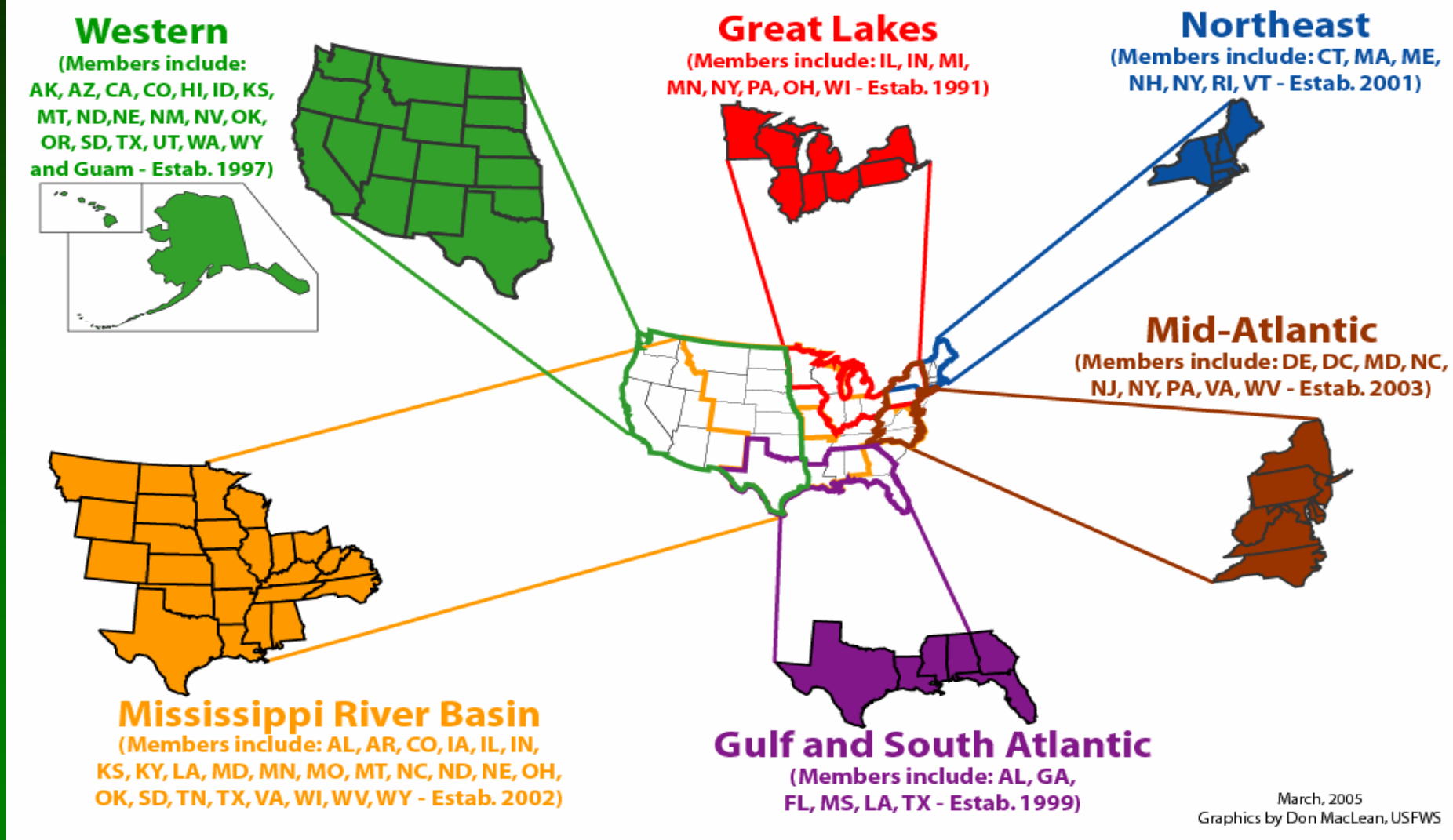
- To Develop and implement a program for waters of the United States to:
  - Prevent introduction and dispersal of aquatic nuisance species;
  - Monitor, control, and study such species; and
  - Educate and inform the general public and program stakeholders about prevention and control of these species

Taken From: ANSTF Strategic Plan

Regional Panels of the Task Force

- Identify and Establish Regional Priorities
- Make recommendations to the ANSTF
- Coordinate ANS activities in the Region
  - Federal agencies , States, Tribes, Interstate Organizations, Non-governmental entities
- Provide advice on controlling ANS
- Submit an annual report to the Task Force describing ANS activities

The Regional Panels of the Aquatic Nuisance Species Task Force

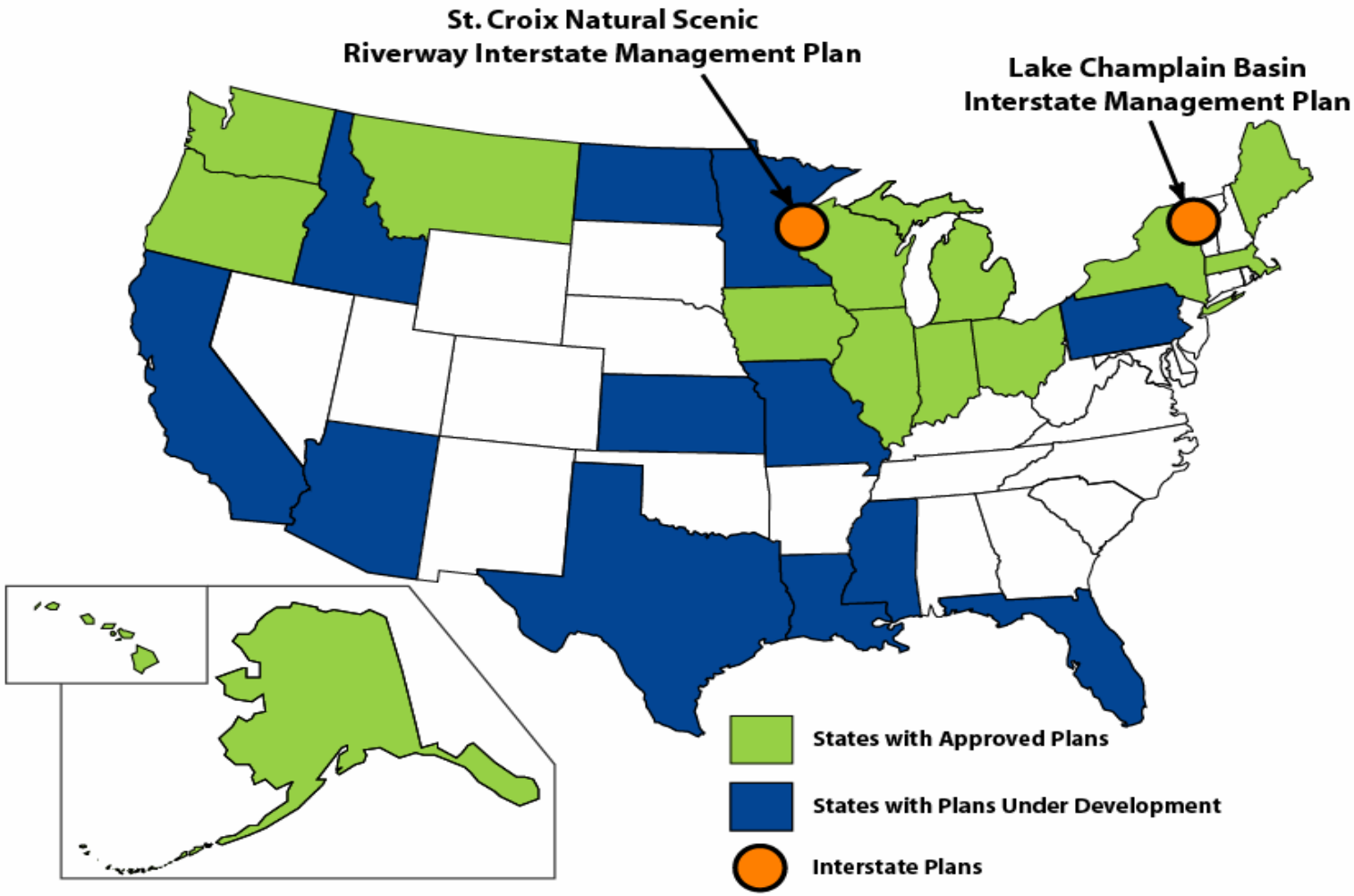


March, 2005
Graphics by Don MacLean, USFWS

ANS Program Focus Areas

- Prevention
- Detection and Monitoring
- Control
- Research
- Education
- Technical Assistance

Status of State ANS Management Plans



January, 2005
Graphics by Don MacLean, USFWS

History of Aquatic Nuisance Plants

- 1884 - waterhyacinth is believed to have been introduced into the U.S. at the Cotton Exposition in New Orleans, Louisiana
- 1890 - reported that waterhyacinth was first introduced in Florida in the St. Johns River above the city of Palatka
- 1894 - first notice that these beautiful flowering plants were a problem and creating obstructions to navigation
- 1896 - citizens of Florida and Louisiana petition Congress for assistance

River and Harbor Act of 1899

- Congress authorized funding for the Corps to remove waterhyacinths and other obstructions to navigation
- Authorized the construction and operation of vessels and log booms for the removal and containment of waterhyacinths in the waters of Florida and Louisiana
- Authorized the expenditure of $25,000 for the construction of 2 boats to control waterhycinths, $1,000 for log booms to use with the boats, and $10,000 for operating costs in Florida and Louisiana

Biological Control History for Aquatic Plants

- Began in 1959
  - USDA and U.S. Army Corps of Engineers
  - Over 40 years
  - USACE –Aquatic Plant Control Research Program

- Targeted Aquatic Plants
  - Alligatorweed - Waterhyacinth
  - Waterlettuce - Hydrilla
  - Eurasian Watermilfoil - Salvinia
  - Purple Loosestrife - Melaleuca
  - Arundo - Phragmites

Historical

- Aquatic Plants
  - Released 13 insect agents
  - Ten established
  - 77% establishment rate
- Wetland Plants
  - Six insect agents released
  - Six established
  - 100% establishment rate

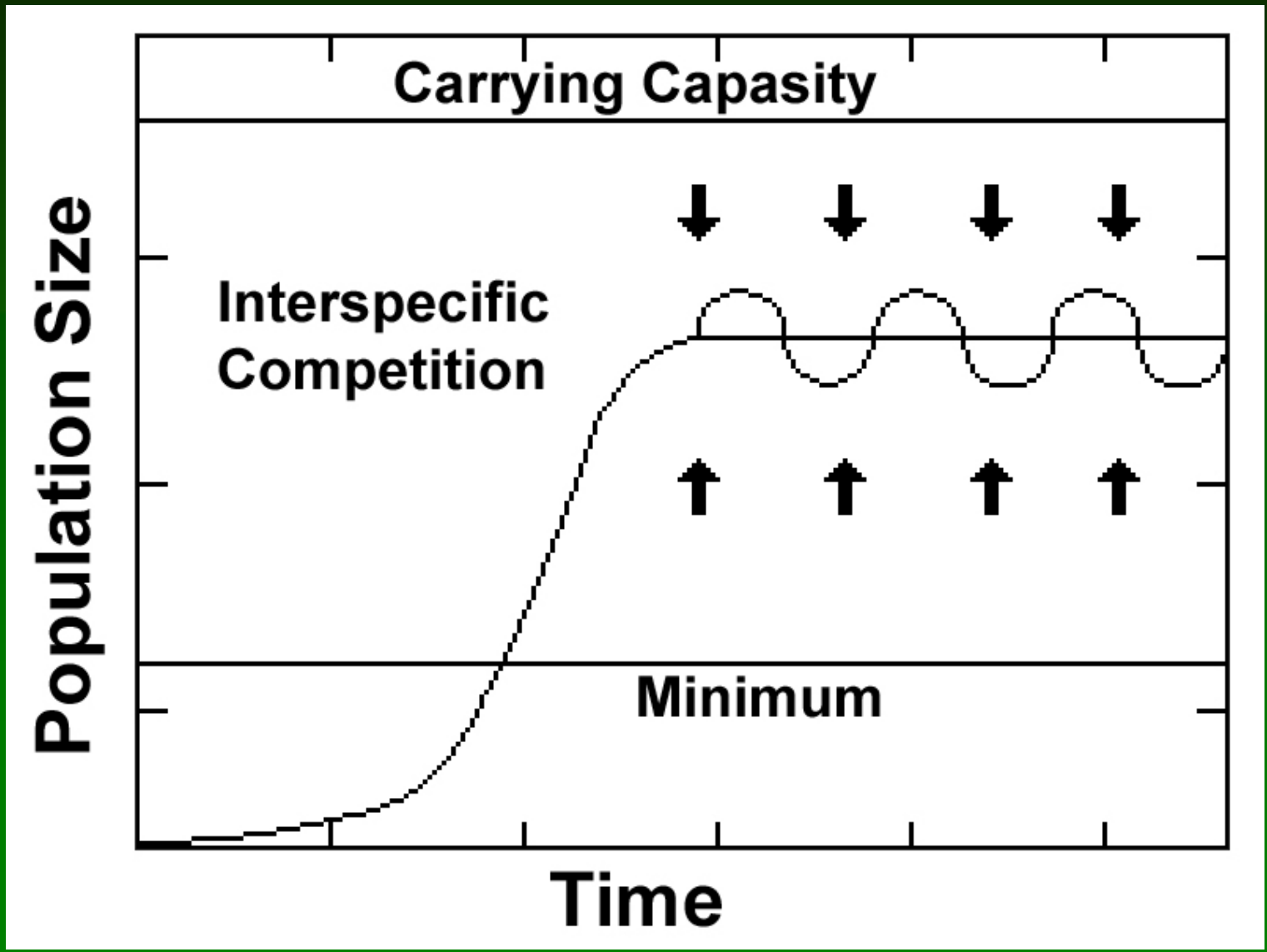
What is Biocontrol?

Introduction, by man, of parasitoids, predators, and/or pathogenic microorganisms to

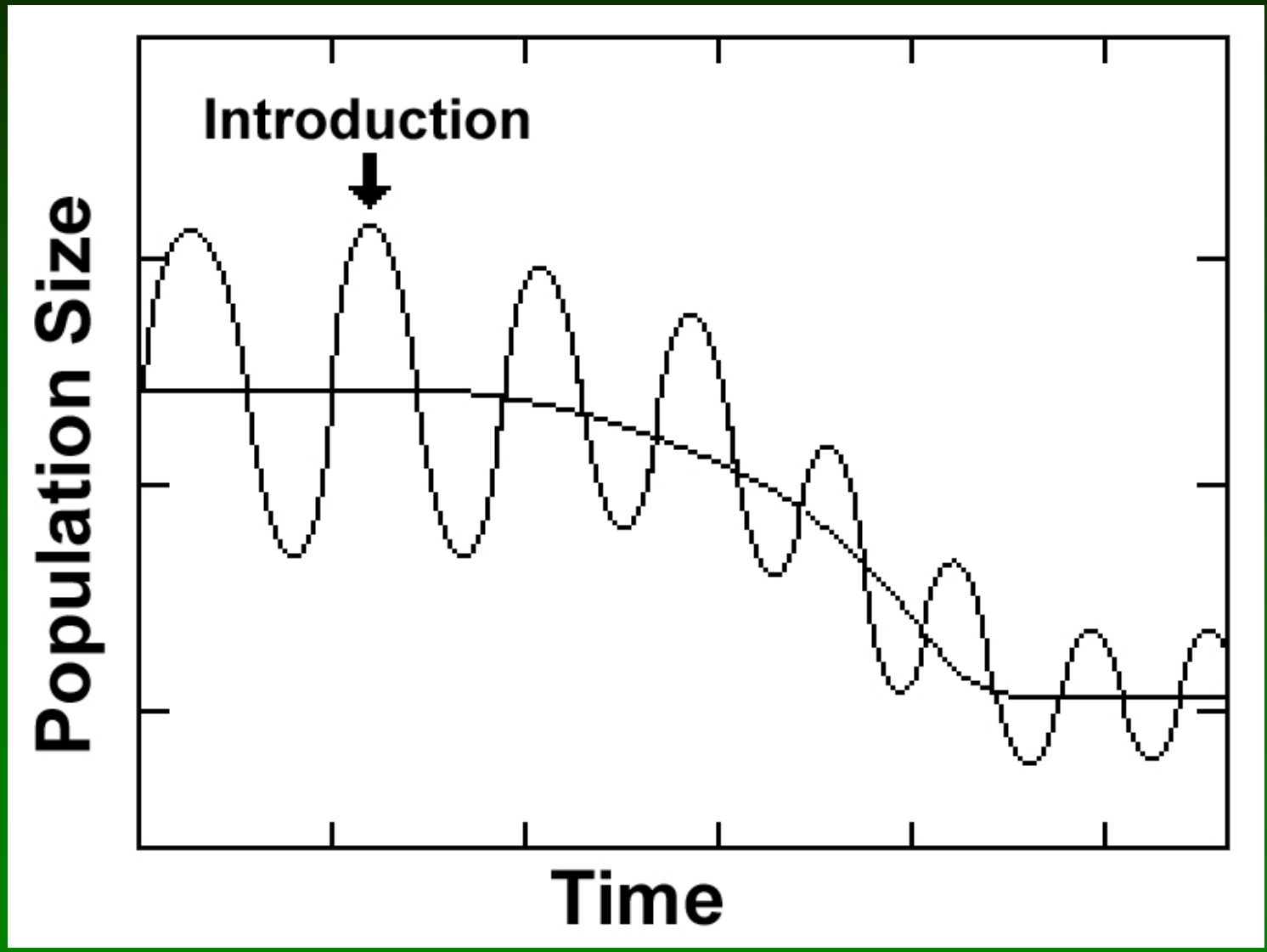
SUPPRESS

populations of plant or animal pests.

PLANT GROWTH

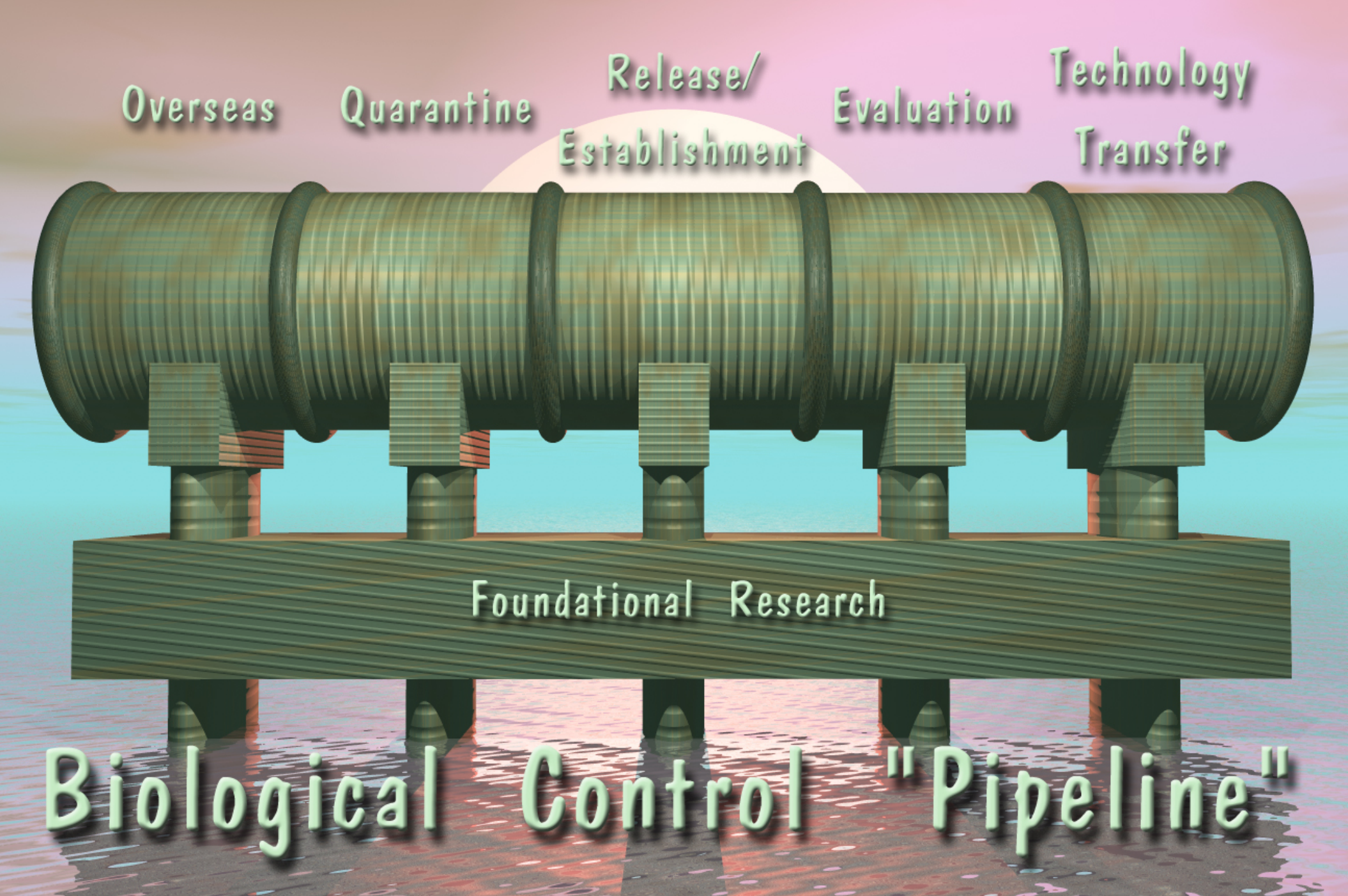


PLANT GROWTH



Important Aspects

- Host-Specific Agents
- Target Exotic Plants
- Release Small Numbers
  - Population increase
  - Expansion in distribution
- Suppression is Key
  - Long-term process
  - Stress the target
  - Bring into equilibrium


Overseas
Quarantine
Release/
Establishment
Evaluation
Technology
Transfer
Foundational Research
Biological Control "Pipeline"

Approval for Release

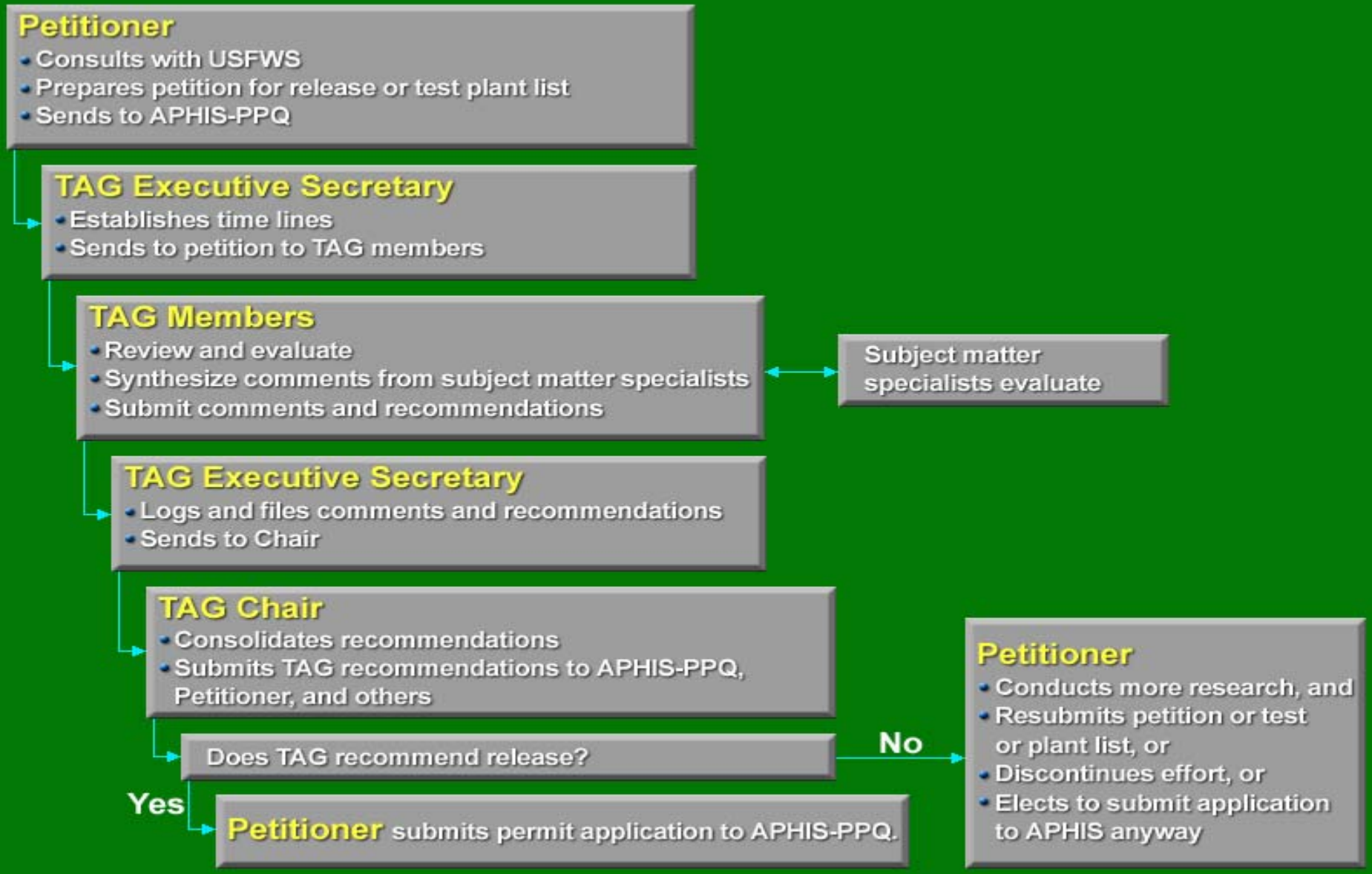
- Approval comes from APHIS, PPQ
  - Animal and Plant Health Inspection Service
  - Plant Protection and Quarantine
- APHIS, PPQ solicits recommendations from Technical Advisory Group (TAG)
- Major Areas of Concern
  - Taxonomy
  - Test Plant List
  - Host Range Tests
  - Impact to Non-Target Plants

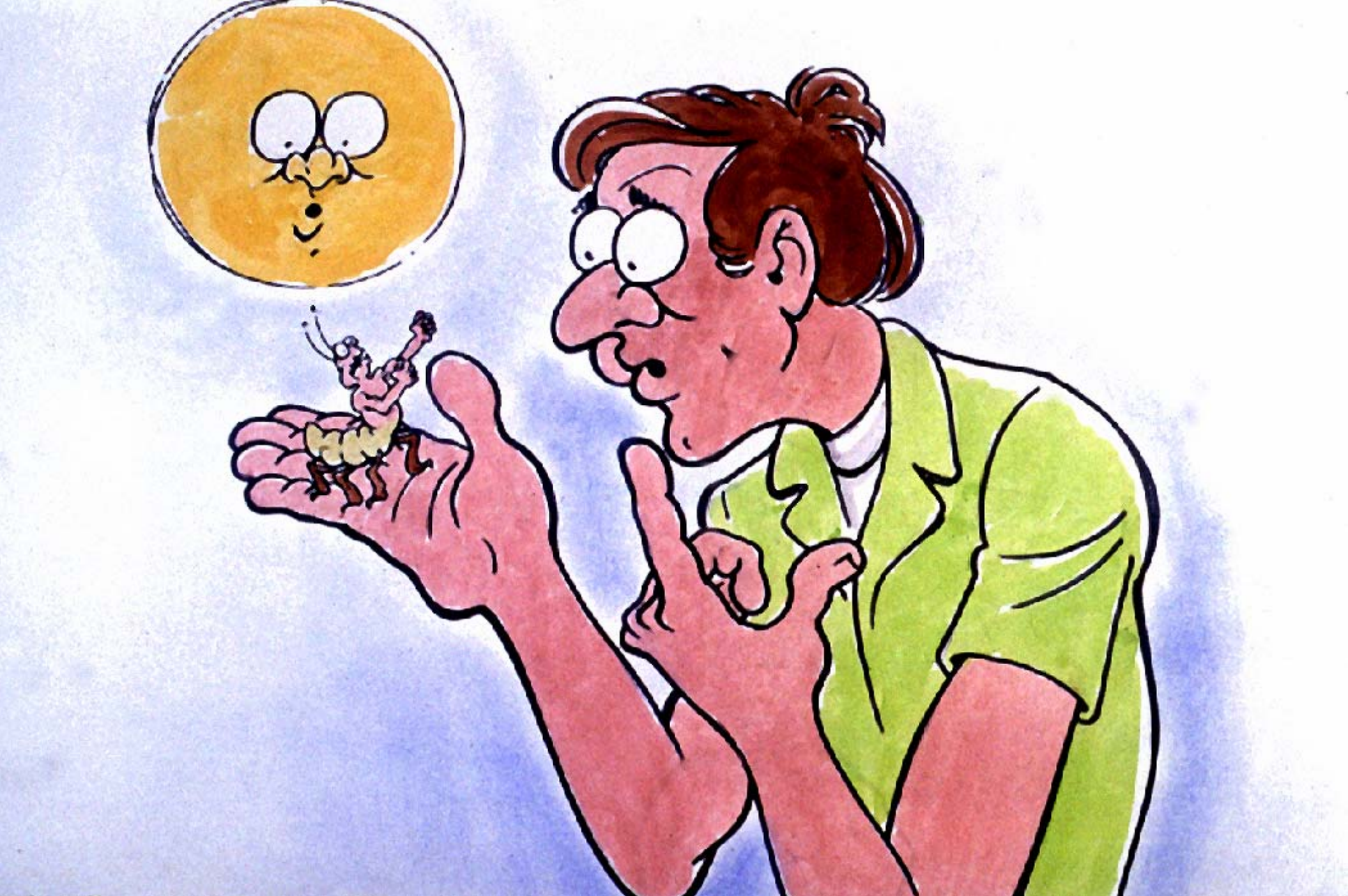
Technical Advisory Group - TAG

- Make Recommendations Only
- TAG Membership
  - Bureau of Land Management
  - Bureau of Reclamation
  - Bureau of Indian Affairs
  - Fish and Wildlife
  - National Park Service
  - National Biological Survey
  - Environmental Protection Agency

TAG Membership Continued

- USDA, ARS
- USDA, APHIS
- USDA, CSREES
- Forest Service
- Documentation Center
- Corps of Engineers
- Weed Science Society
- National Plant Board
- Representative for Canada
- Representative for Mexico


Petitioner
Consults with USFWS
Prepares petition for release or test plant list
Sends to APHIS-PPQ
TAG Executive Secretary
Establishes time lines
Sends to petition to TAG members
TAG Members
Review and evaluate
Synthesize comments from subject matter specialists
Submit comments and recommendations
Subject matter specialists evaluate
TAG Executive Secretary
Logs and files comments and recommendations
Sends to Chair
TAG Chair
Consolidates recommendations
Submits TAG recommendations to APHIS-PPQ, Petitioner, and others
Does TAG recommend release?
No
Petitioner
Conducts more research, and
Resubmits petition or test or plant list, or
Discontinues effort, or
Elects to submit application to APHIS anyway
Yes
Petitioner submits permit application to APHIS-PPQ.



Alternanthera philoxeroides (Mart.) Griseb. (Alligatorweed)

Agasicles hygrophila – "Alligatorweed Flea Beetle"

Arcola malloi - "Alligatorweed Stem Borer"

Formerly
Vogtia malloi

Amino

Amynothrips andersoni

"Alligatorweed Thrips"

Eichhornia crassipes (Mart.) Solms (Waterhyacinth)

Niphograpta albiguttalis
"Waterhyacinth Moth"

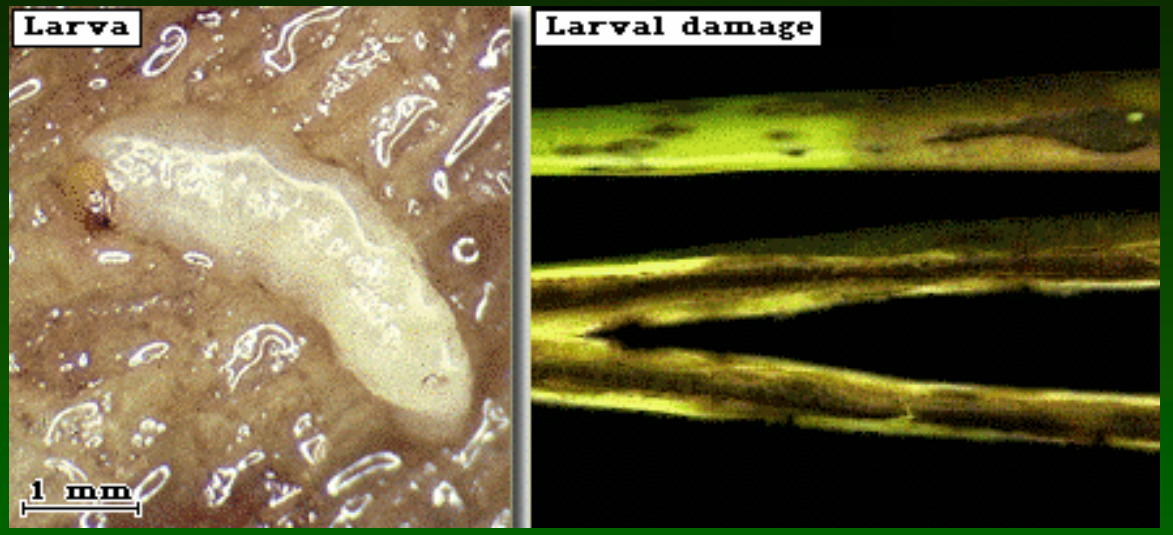
Formerly

Sameodes albiguttalis

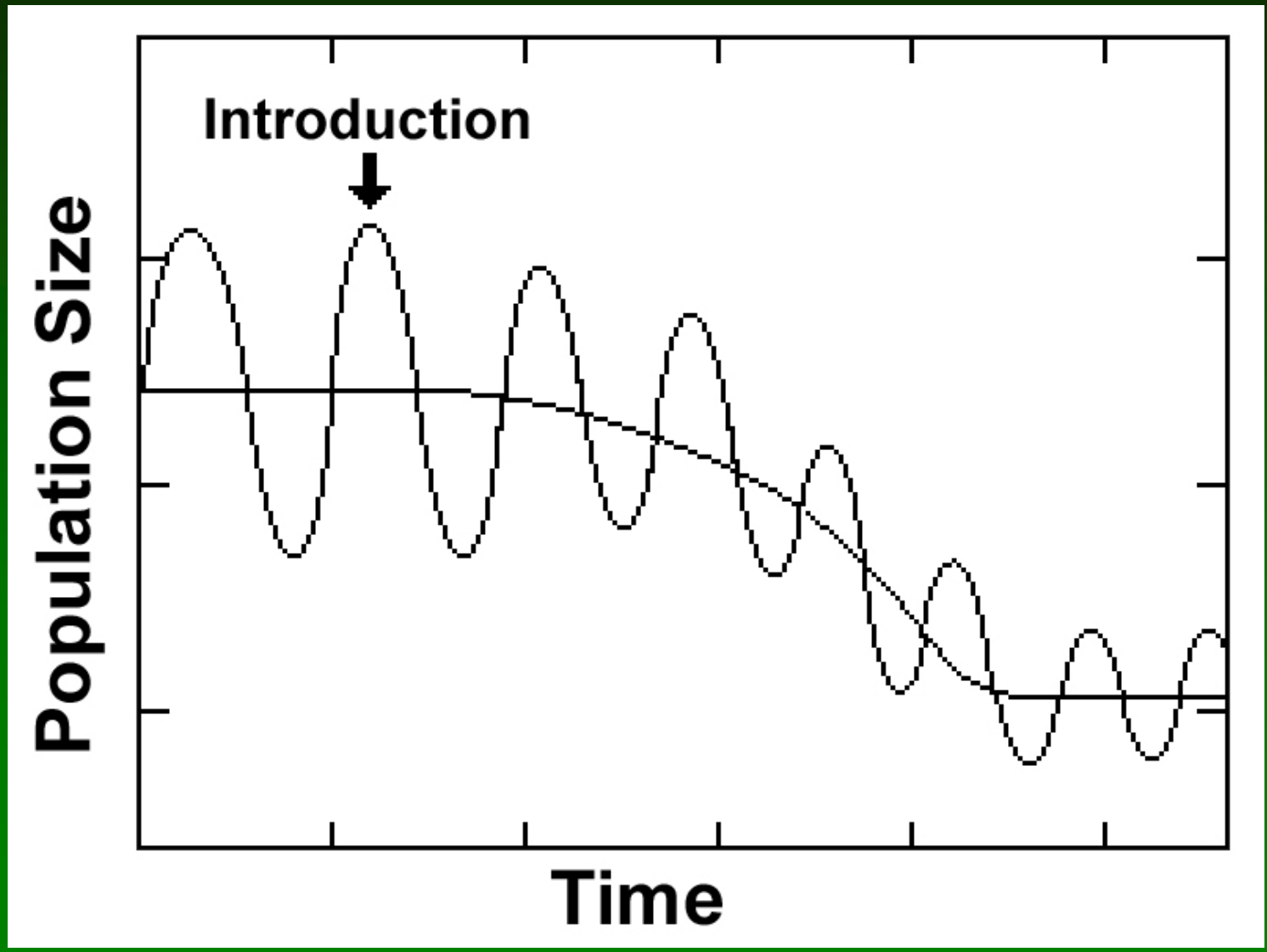
Neochetina eichhorniae
"Mottled Waterhyacinth Weevil"

Neochetina bruchi

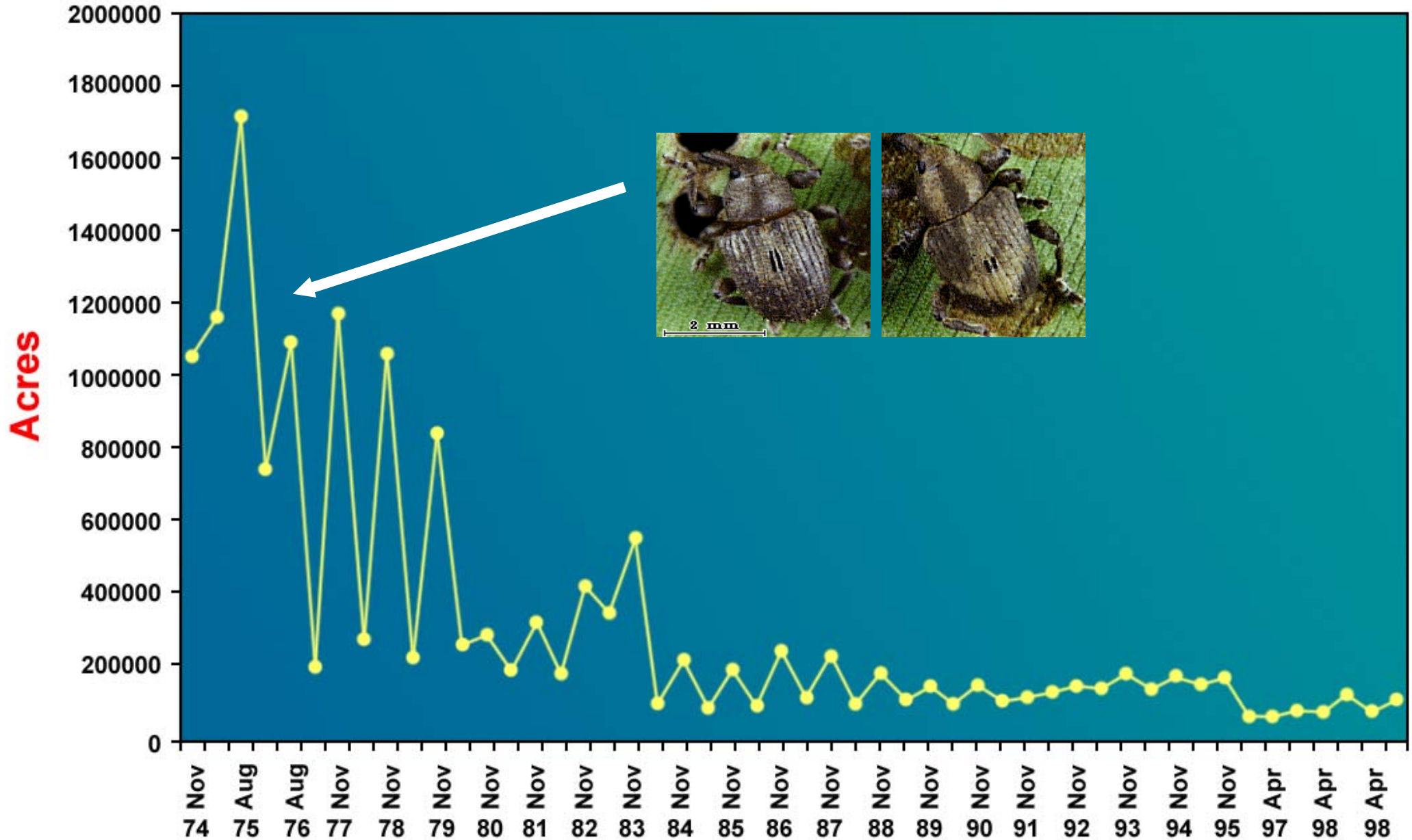
Chevroned Waterhyacinth Weevil



PLANT GROWTH



Louisiana Waterhyacinth Data



Myriophyllum spicatum L.
(Eurasian Watermilfoil)

Acentria ephemerella
(formmely) *A. nivea*

Adult

Larva

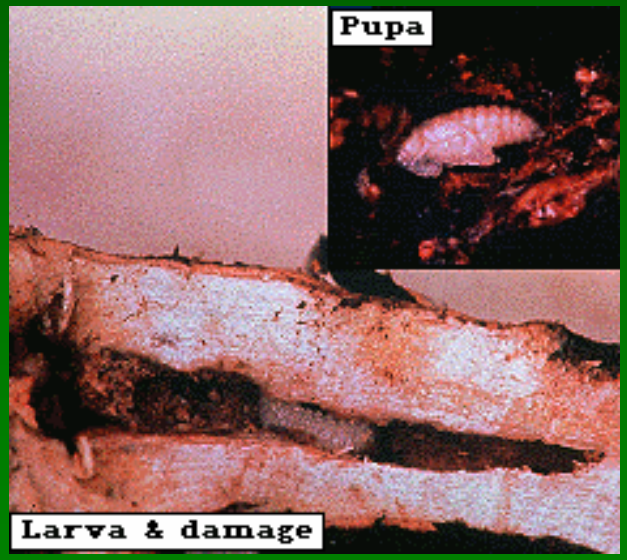
Euhrychiopsis lecontei (Dietz)

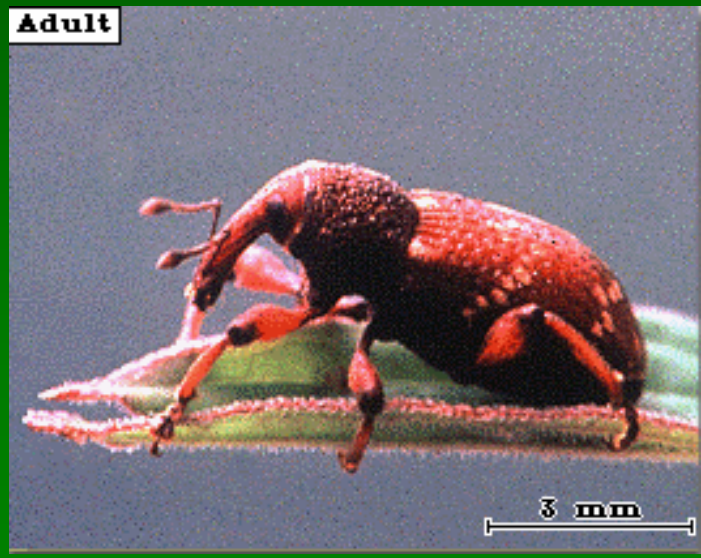
Lythrum salicaria L.
(Purple Loosestrife)

Galerucella spp.


Galerucella calmariensis
Feeding on Purple Loosestrife

Hylobius transversovittatus
"Loosestrife Root Weevil"





Hydrilla verticillata (L.f.) Royle (Hydrilla)

Hydrilla Agents
Leaf-Mining Flies

- *Hydrellia pakistanae*
- *Hydrellia balciunasi*
- Established
- Larva Damaging Stage
- Feeds on Internal Leaf Tissues
- Widespread U.S. Distribution


Hydrellia balciunasi
Feeding on Hydrilla

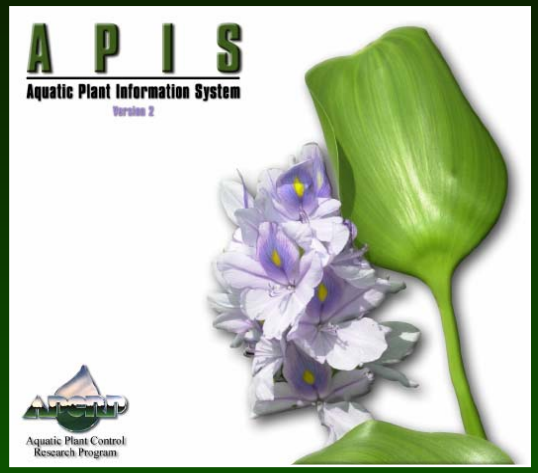
Salvinia molesta Mitchell (Giant Salvinia)

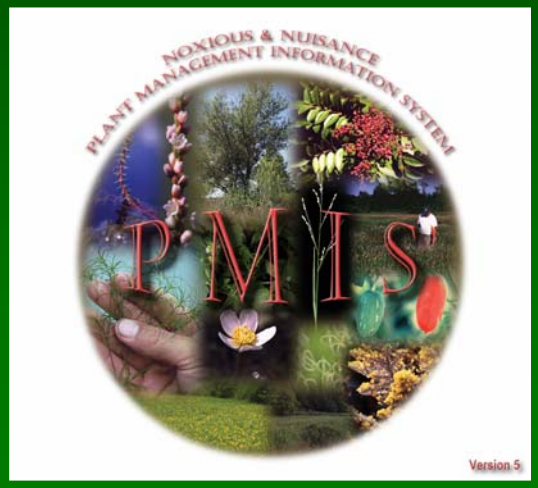
Cyrtobagous salviniae - Salvinia Weevil

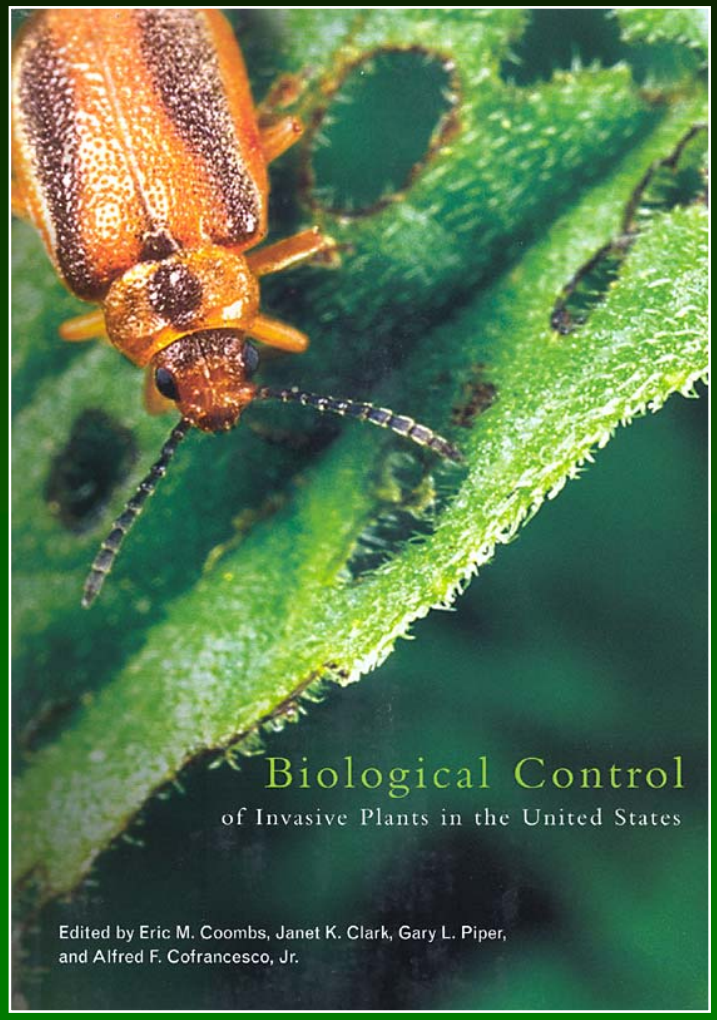
Melaleuca quinquenervia (Cav.) Blake (Melaleuca)

Oxyops vitiosa

Caulerpa sp. Management Plans







cofrana@wes.army.mil