Final Days of Battle of New Orleans: Communication Issues

Battle of New Orleans

Nonnative Species: Importation and Trade Risk Assessment, Risk Management, Risk Communication Needs

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Presentation Overview

- Background and scope of the issue
- Statement of the Issue
- National Management Plan
- Risk Assessment
  - FWS Approaches
  - Climate Change
- Risk Management Needs
  - Regulatory
  - Non-regulatory
- Risk Communication
- Vector Management Needs

Scope of Problem

- No. of nonnative species in U.S. (Pimentel 2004)
  - 50,000
- No. of species considered invasive in U.S (Corn et al. 1999)
  - 4,300
- Estimates of no. of species imported into U.S. annually
  - Up to 30,000?

Workload:
Fish and Wildlife Service Inspections at Ports of Entry

- No. of wildlife inspectors
  - 139
- Inspection stations
  - 30
- Total Ports of Entry
  - 400
- Declared shipments of wildlife and wildlife products
  - 180,000 annually

Background

- The US legally imported more than 1 billion live animals during 2005-2008
- We don’t know how many animal species are being imported into the US
- Freshwater ornamental fish - ≥ 4,000 species traded in world

Issue:
How to Better Protect U.S. Biosecurity, without unnecessarily regulating importation and trade of nonnative species?

Definitions

- Risk Analysis:
  - Risk Assessment + Risk Management + Risk Communication
- Risk Assessment:
  - Risk characterization
- Risk Management:
  - …weighing [and implementing] policy alternatives
- Risk Communication
  - Communicating risk assessment results, and risk management actions

National Invasive Species Management Plan

- 1999 Executive Order required development of National Invasive Species Management Plan

National Invasive Species Management Plan

- “Prevention is the first-line of defense.”

- “The Strategic Goal for Prevention calls for preventing the introduction and establishment of invasive species to reduce their impact on the environment, the economy and health of the United States.”

National Invasive Species Management Plan

- “Objective:
  - Prevent establishment of intentionally introduced invasive species
    - Develop fair and practical screening processes that evaluate different types of species moving intentionally in trade
    - Encourage agencies to modify and incorporate the processes into their own regulatory and non-regulatory programs”

National Invasive Species Management Plan

- “Implementation Task :
  - Develop screening processes to evaluate invasiveness of terrestrial and aquatic nonnative wildlife (e.g., fish, mollusks, crustaceans, mammals, birds, reptiles and amphibians) moving in trade
    - Performance Element:
      - Develop a draft screening process”

National Invasive Species Management Plan

- Task
  - "Improve domestic and international risk analysis processes. Include new risk methodologies and scientific advances in understanding invasive species. Expand its scope to include terrestrial and aquatic organisms
  - Performance:
    - Revise 1996 ANSTF risk analysis process; submit draft for review in 24 months, and finalize in 36 months"

National Invasive Species Management Plan

- "Implementation Task
  - Develop a process to identify high-priority invasive plants, animals, and plant or animal pathogens for agencies' actions
    - Performance Element: Prioritization process will be developed and distributed widely via the internet… and for … agency use"

National Invasive Species Management Plan

- "Implementation Task:
  - Support efforts by non-federal stakeholders to develop/enhance codes of conduct and Best Management Practices (BMPs)
    - Performance Element:
      - Encourage non-federal stakeholders to publish codes of conduct and BMPs on the Web."

U.S. Lacey Act

- The Lacey Act was enacted in 1900
  - Authorizes the Secretary of the Interior to regulate the importation and interstate transport of species, including offspring and eggs, determined to be injurious wild mammals, wild birds, fishes, mollusks, crustaceans, amphibians, reptiles

Lacey Act

- Injurious wildlife listing does not prohibit intrastate transport or possession of that species within a State, where those activities are not prohibited by the State.

History of FWS Risk Assessments and Rulemaking

- Average of 4 years for entire process/species
- Average of about 2 years for risk assessment/species

FWS Approach: Rapid Risk Assessment (Screening Process)

- Detailed (6 page) SOP used to conduct the screening
- Information/data/outputs/synthesis packaged in standardized format
- QA/QC
  - Includes supervisory and other internal peer review

Screening Report Template

- Native Range, and Status in the United States
- Biology and Ecology
- Impacts of Introductions
- Global Distribution
- Climate Matching with US
- Risk Assessment
  - Summary of Risk to the US
- High Risk Species:
  - Projections of establishment and impacts in US
    - Within habitats, and for ecosystem components,
- References

Great Lakes Restoration Initiative

- I have received funding for conducting rapid screening to support regulatory and non-regulatory decision making
  - Last two years 1400 species screened in DRAFT form
    - Screening reports are being posted online
      - FWS website
      - Comments on reports enabled

FWS Screening Results:
3 Species

Summary of Ecological Risk Screening Report: Stone Moroko

Stone Moroko

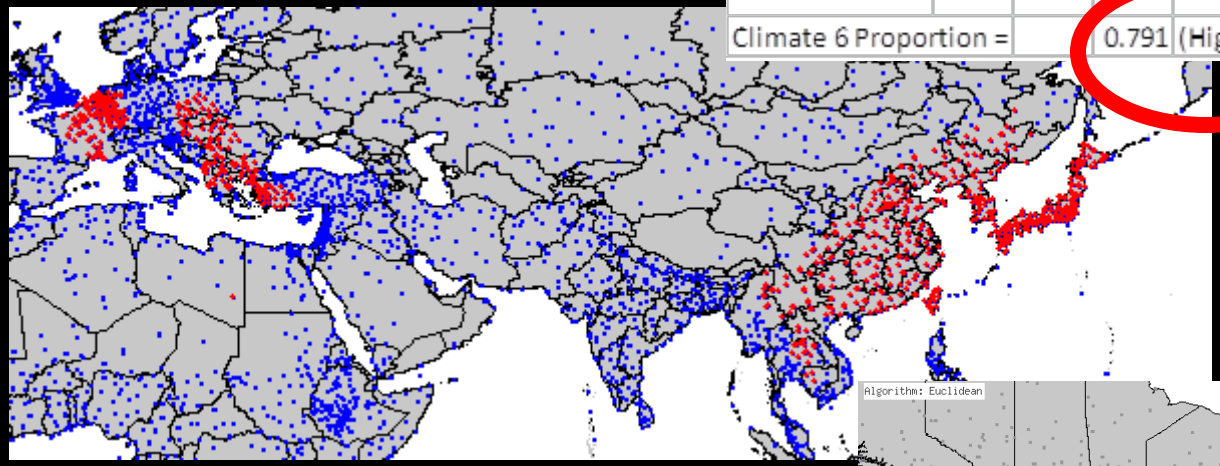
- History of Invasiveness
  - Coarsest screen:
    - Presently, Europe's most invasive fish

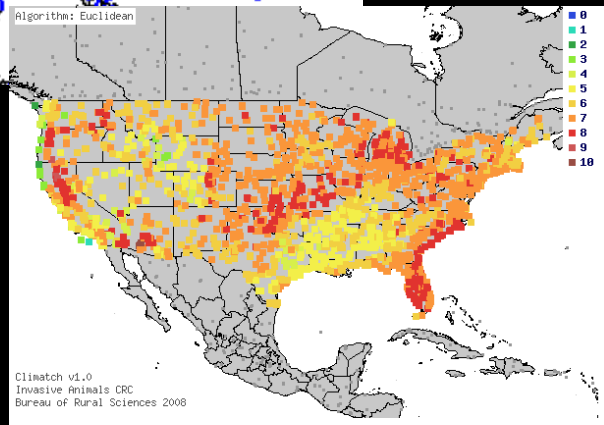
Stone Moroko: Selection from Screening Report

- Impact outcomes
  - Altered trophic level
  - Changed gene pool/ selective loss of genotypes [of species impacted by *P. parva*]
  - Damaged ecosystem services
  - Ecosystem change/ habitat alteration
  - Negatively impacts aquaculture/fisheries
  - Negatively impacts cultural/traditional practices
  - Reduced [ecosystem] amenity values
  - Reduced native biodiversity
  - Threat to/ loss of endangered species
  - Threat to/ loss of native species…

Stone Moroko: Climate Matching

CLIMATCH Score	0	1	2	3	4	5	6	7	8	9	10
Count	5	5	8	24	94	305	510	868	279	5	3
Climate 6 Proportion =			0.791	(High)							





Stone Moroko

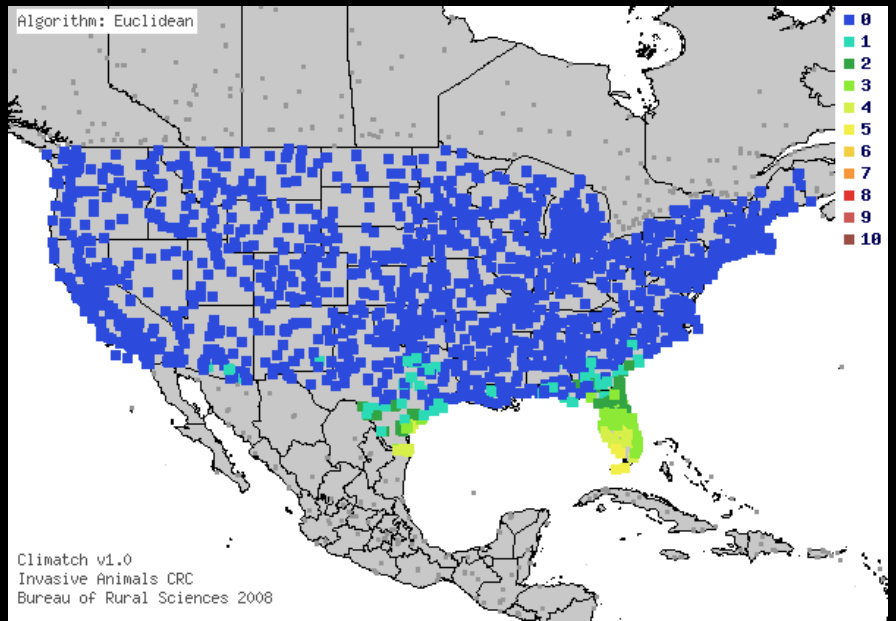
- Risk Assessment Elements
  - History of Invasiveness: High
  - Climate Match: High
  - Overall Risk Assessment Category: High
    - Certainty of Assessment: High

Low Risk Species

Betta (*Betta splendens*)

Risk Assessment

- History of Invasiveness: Low
  - No impacts documented.
- Climate Match: Low (0.00 - Lowest possible)
- Overall Risk Assessment Category: Low
  - Certainty of Assessment: High



What to do?
Species Assessed as Uncertain Risk
Based on Screening

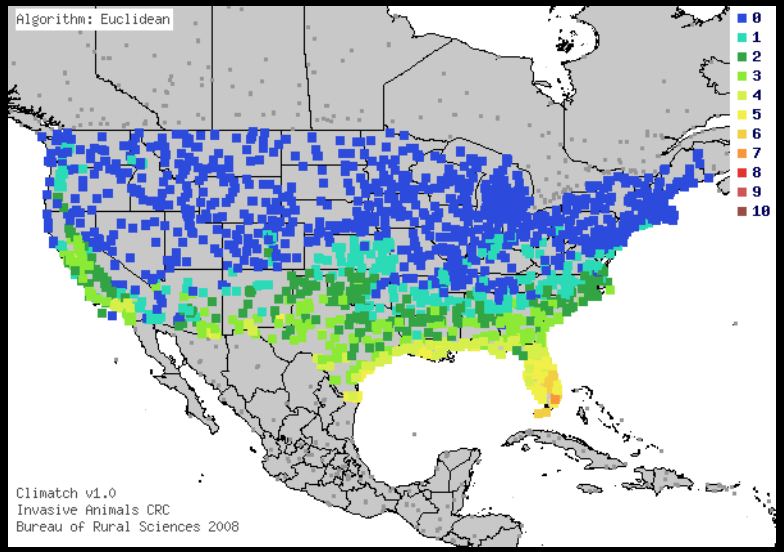
Uncertain Risk

- Risk is uncertain when:
  - Species has not been introduced/established outside native range, &/or
  - Paucity of data/information about the species, &/or
  - Species established outside native range, but scientific impact assessments have not conducted, &/or results equivocal

Uncertain Risk Species: Next Steps

- Advanced Risk Assessment Process being developed to characterize risk
  - For potential use in decision support

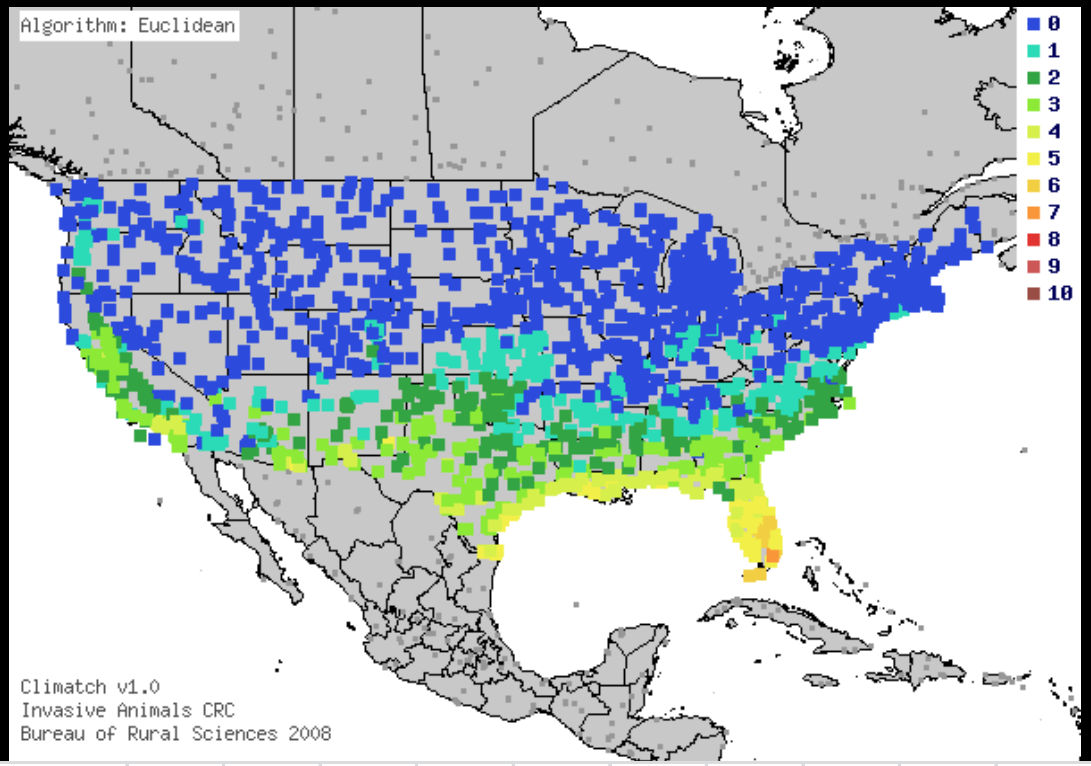
Giant Tigerfish



CLIMATCH Score	0	1	2	3	4	5	6	7	8	9	10
Count	1028	271	233	229	132	62	15	4	0	0	0
Climate 6 Proportion =			0.010	(Medium)							

Uncertain Risk Species: Next Steps

- Non-regulatory risk management being explored
  - Keep species out of: US, or at least areas with high climate match, and their connections (e.g., river systems)



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Uncertain Risk

- Additional tool being developed
- Additional data (beyond scientific literature and databases) being acquired
- Will help to characterize risk

Accounting for Climate Change

- FWS has developed a tool that projects climate niche
  - 2020, 2050, 2080
  - IPCC emission scenarios:
    - No change
    - 2 increased emission scenarios
      - But not the highest scenario
  - Output maps and scores climate match
  - Manuscript being developed for publication

Next Steps

Decision Support:
Risk Screening Reports

- Ecological Risk Screening Summaries will be:
  - Used during FWS decision making re: Lacey Act
  - Posted on the WWW so State and industry partners can also use information to:
    - Advance:
      - Regulatory approaches
      - Non-regulatory approached intended to help promote sustainable commerce

Non-regulatory Approach: Partnership with Industry and AFWA?

- Part of comprehensive biosecurity
- FWS working on a draft MOU with PIJAC
- Hope a final MOU is agreed upon, in partnership with other industry groups & AFWA

Greenwire

THE LEADER IN ENERGY & ENVIRONMENTAL POLICY NEWS

An E&E Publishing Service

INVASIVE SPECIES: FWS reaches out to old adversary in bid to build trade barriers *(Wednesday, March 28, 2012)*

Allison Winter, E&E reporter

The Fish and Wildlife Service is embarking on an effort to try to keep new invasive animals out of the United States.

Water Hyacinth, Alligator Grass, & Water Chestnut

- By act of Congress in 1956, prohibited from importation and interstate transport
  - There is presently internet trade, and other forms of interstate transport
- If/When any Federal enforcement will begin has yet to be determined

Water Hyacinth State Regulatory Status

- Regulated in:
  - AL, AZ, CA, FL, SC, TX
- CT
  - Potentially Invasive, Not Banned

Vector Management

- Risk Assessments
  - Species – Jeff Hill
  - Hitchhikers – Earl Chilton
  - Pathways…
  - Geographic…
- Risk Management
  - For Risk Assessment elements listed above

Vector Management: Tools Needed

- Tool Development and Use
  - Develop tools that assess risk, by:
    - Species, Pathway, Location
  - Use tools for prioritizing risk management action, and provide results of rankings to decision makers

Vector Management: tools being developed

- FWS working with others on tools
  - To assess risk & prioritize risk management actions
    - Will help decision makers allocate scarce resources among competing locations and vectors

My Greatest Fear

…is not that we are powerless [to manage vectors],

but instead that we are powerful,

- and choose not to use that power