# Which of these is the greatest ecological risk to Canada, U.S., & Mexico?



#### Striped Catfish Pangasianodon hypophthalmus



#### Wels Catfish Silurus glanis



#### Stone Moroko Pseudorasbora parva



# North American Invasive Species Risk Assessment Coordination and Cooperation

#### 20<sup>th</sup> Trilateral Ecosystem Working Table

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## **Presentation Outline**

- Scope of the Problem
  - Examples
- Situation Status
  - Coordination, within continental Nations, continues
- Report on Results of Continentally Coordinated Risk Assessment
  - Enhanced coordination, among Continental Nations, of risk assessment & risk management activities, products, accomplishments
- Recommendation to Ecosystem Conservation Working
   Table
  - Continue to support experts sharing, via periodic webinars, risk assessment & risk management tools, products, processes & accomplishments

# Definitions

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



# Scope of the Problem: Examples

- In world, 
   <u>></u> 4,000 species freshwater ornamental fishes traded
- The US legally imported more than 1 billion live animals during 2005-2008
- In Canada, over 2000 species of fishes are imported live
- Mexico imports between 800 and 1000 species and a total of 47 million live fish per year



# 2014 Statement of Need: Delivered to EWT

- Experts from CONABIO, Fisheries and Oceans Canada, and U.S. Fish and Wildlife Service believe enhanced Continental biosecurity is needed
  - We proposed that this need will be met, in part, by:
    - Sharing, among North American National agencies
      - Risk assessment tools
      - Products resulting from using those tools
      - Risk management actions and accomplishments



- Enhanced continental approaches to regulatory and nonregulatory risk management will result from sharing tools and products
  - Reduction, from present, of invasive species impact risk is intended & projected
- Risk Management of Wildlife Trade
- Can assess risk of establishment under climate change



2014 Trilateral Committee for Wildlife and Ecosystem Restoration and Management

- 19<sup>th</sup> Annual meeting of Trilateral (CA, US, MX), in MX, May 2014
  - Executive Committee Approved
    - Sharing, among Federal agencies, of nonnative species risk analysis tools
    - Coordination of risk analyses activities



#### **Situation Status**

- Agencies from Mexico, the US and Canada have:
  - Developed tools to assess risk of imported, nonnative species
  - Continue Nationally-focused risk management using products from those tools
  - Began, under the Trilateral, risk assessment coordination and cooperation

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#### **Progress and Results**

- We convened a webinar in which we shared:
  - Risk assessment tools & products
  - Participation by experts from
    - CONABIO
    - Fisheries and Oceans Canada
    - U.S. Fish and Wildlife Service



#### **Progress and Results**

 Results of that webinar improved communication and coordination among some continental risk assessment experts

#### **Progress and Results**

- Selected 3 species for possible coordinated risk assessment
  - Wels Catfish CA, MX, US
  - Stone Moroko & Striped Catfish MX and US



**3 Species Risk Assessment Results** 

# Stone Moroko RAMP Climate Match for North America: Current Climate Conditions



Species: *Pseudorasbora parva* Scenario: Current





Ecological Risk Screening Summary: Stone Moroko in relation to Mexico

- Risk Assessment Elements
  - Report as invasive: Very High
  - Relation to other invasive Taxa: Medium
  - Vector to other invasive species: Very High
  - Risk of introduction: Medium
  - Risk of establishment: Very High
  - Risk of dispersal: Very High
  - Sanitary impacts: No
  - Economic and social impacts: High
  - Ecosystem impacts: High
  - Biodiversity impacts: Very High



Overall Risk Assessment Category: Very High Certainty of Assessment: High Ecological Risk Screening Summary: Stone Moroko in relation to the U.S.

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



#### Wels Catfish RAMP Climate Match for North America: Current Climate Conditions



Ecological Risk Screening Summary: Wels Catfish in relation to Canada

Risk Assessment Elements

 Risk of Establishment: High
 Risk of Ecological Impact: High



#### Invasiveness Risk Screening Summary: Wels Catfish in relation to Mexico

- Risk Assessment Elements
  - Report as invasive: High
  - Relation to other invasive Taxa: No
  - Vector to other invasive species: High
  - Risk of introduction: High
  - Risk of establishment: High
  - Risk of dispersal: High
  - Sanitary impacts: No
  - Economic and social impacts: Medium
  - Ecosystem impacts: Unknown
  - Biodiversity impacts: High
  - Overall Risk Assessment Category: High
    - Certainty of Assessment: High



Ecological Risk Screening Summary: Wels Catfish in relation to U.S.

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



#### Striped Catfish RAMP Climate Match for North America: Current Climate Conditions



#### Striped Catfish RAMP Climate Match for North America: Climate Change (IPCC RCPs) Conditions





#### Ecological Risk Screening Summary: Striped Catfish in relation to Mexico

- Risk Assessment Elements
  - Report as invasive: Very High
  - Relation to other invasive Taxa: Very High
  - Vector to other invasive species: Very High
  - Risk of introduction: High
  - Risk of establishment: Very High
  - Risk of dispersal: High
  - Sanitary impacts: No
  - Economic and social impacts: High
  - Ecosystem impacts: Unknown
  - Biodiversity impacts: Very High

Overall Risk Assessment Category: Very High Certainty of Assessment: Very High





Ecological Risk Screening Summary: Striped Catfish in relation to U.S.

- Risk Assessment Elements
  - History of Invasiveness: None verified subject to change
    - However, information being requested from IUCN
      - A IUCN publication is quoted as
        - » "One of the most 'disastrous' alien invasive species brought to the country [Bangladesh]"
  - Climate Match for continental US: Low
  - Overall Risk Assessment Category: Uncertain Subject to Change



#### Risk Assessment Result Summary: Three species

- Wels Catfish assessed as High Risk by experts/processes in all 3 nations
- Stone Moroko assessed as High Risk by experts/processes in Mexico & U.S.
  - Canada has not yet assessed risk
- Striped Catfish assessed as High Risk in Mexico
  - U.S. provisionally concludes Uncertain Risk; also, mostly low climate match
  - Canada has not yet assessed risk





- Continental Risk Management of Wels Catfish:
  - Agencies may wish to consider Wels Catfish in risk management activities – Wildlife Trade regulations
    - To minimize risk of establishment, spread, impact



- Mexico & U.S. Risk Management of Stone Moroko:
  - Agencies may wish to consider Stone Moroko in risk management activities – Wildlife Trade regulations
    - To minimize risk of establishment, spread, impact



- Risk Management of Striped Catfish:
  - High Risk conclusion in Mexico
  - Provisionally Uncertain Risk in US
    - Climate Match for Continental US mostly low now & under projected change (except SW US & Puerto Rico)
  - Mexico & US agencies may wish to consider Striped Catfish in risk management activities – Wildlife Trade regulations
    - To minimize risk of establishment, spread, impact



Projected Outcomes: North America

 The outcomes of continued sharing is intended to better protect North America from future invasions, and minimize impacts of established invasive species

#### Projected Outcomes: North America

- Although risk management (Wildlife Trade) implications are focused on preventing additional invasive species establishment
  - Other outcomes may include:
    - Identification of common pathways (opportunities for coordinated Wildlife Trade regulations) for species not established
    - More effective containment, control, mitigation of established invasive species & impacts

# Risk Assessment Team Requested Ecosystem Table Outcomes:

- Request:
  - Continued support of enhanced Continental communication, cooperation, information exchange among National agencies involved in:
    - Assessing impact risk of nonnative species
    - Implementing risk management approaches

# Risk Assessment Team Requested Ecosystem Table Outcomes:

- Request:
  - Opportunity to report, at upcoming Ecosystem Tables, outcomes from Continental sharing of risk assessment & risk management tools, processes, products, accomplishments
    - Additional species risk assessments will be reported at future Ecosystem Table Meetings

#### 2014 Trilateral Committee for Wildlife and Ecosystem Restoration and Management

- 19<sup>th</sup> Annual meeting of Trilateral (CA, US, MX), in MX, May 2014
  - Executive Committee Approved
    - Sharing, among Federal agencies, of nonnative species risk analysis tools
    - Coordination of risk analyses activities
  - Coordination
    - Select 3 species for risk assessment
    - Conduct risk assessments using tools preferred by each nation's experts
    - Develop report that summarizes and synthesizes results
    - Present/Submit to Trilateral
    - Involve, as appropriate, others in the future