



! " ! # !\$  
# !\$ ! \$ ! \$ ! \$ %\$ \$  
! ! & ! \$ ! \$( ' ) \$ -  
# !\$ ! \$ \$ \$ !  
! \$ ' )  
 ) \* )+ , \$! )- )  
\$ )

\$( ' / \$0 1 \* / ! )  
\$! ! / \$0 1 \* / ! )  
0 ' \$ / \$\$ ) 2 \$ #!  
' 2 ! )  
/ ! 3 ( \$ & ' ! \$ / ! )  
!' + '

4 1 5  
+  
#! ! 6 7 7 - 8 + \* 0 &  
9 9 : 7 ; < --- % 7 = > ? 9 9 : 7 ; < --- %  
@ ! \$ ) ' ) ! \$ ) ' A A 1 3 1 8 2 0 T d ( ) T j 6 . 4 9 2 5 2 0 T d ( @ ) T j 8 . 6 5 6 6 9 C



# Gaps and Priorities in addressing marine invasive species

## INTRODUCTION

For millennia, the natural barriers of oceans, mountains, rivers and deserts provided the isolation essential for species and ecosystems to evolve. In just a few hundred years, these barriers have been overcome by major global forces that have combined to help species travel vast distances to new habitats and become invasive alien species in their new environment.

Few countries have developed the legal and institutional systems that are capable of responding effectively to these invasive species. Many invasive aliens are "colonising" species that benefit from the reduced competition that follows habitat degradation. It is in this integrated context that IUCN has identified the problem of invasive alien species as one of its major initiatives at the global level.

th Ir

Recently

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and

***Address interactions with climate and other global change processes:***

Several global processes, including climate change, economic globalization, overfishing and alteration of nutrient cycles, are contributing to escalating the rates of species invasions. Climate change alters the physical environment in ways that can favour non native species and may also alter ecosystem resilience to invasions. Economic globalization is not only changing the pathways and rates of species transfers between oceans, but also the economic fo

Some other significant international instruments address the issue of species introductions, such as the Convention on Biological Diversity and the FAO Code of Conduct for Responsible Fisheries. These codes and conventions discourage the use of AIS in aquaculture (including mariculture) under general obligations and call for accurate assessments of the risks of using exotic species. The FAO Code of Conduct for Responsible Fisheries does contain a whole section named “Precautionary Approach to Species Introduction



Several recent studies document species introductions into Antarctic and i

Regional and sub regional progr

IUCN suggests that the following activities be part of this work plan:

## 1. Preventing introductions through control of invasion pathways:

### *Ballast Water*

- encourage ratification of the Ballast Water Management Convention by all Parties
- develop an understanding of the current state of IAS through undertaking baseline surveys in major ports
- assess risks of IAS transported through ballast water and develop criteria for prioritising surveys
- develop national and regional standards
- develop provisions and discharge standards for waters beyond national jurisdiction
- develop data sharing arrangements between nations at regional and global scales

### *Hull Fouling*

- conduct risk assessments of IAS transported through hull fouling and develop criteria for prioritising surveys
- develop an understanding of the current state of IAS through undertaking baseline surveys in major ports
- develop a regime/guidelines for reducing the introduction of non-indigenous spp through hull fouling
- implement public awareness programme for recreational craft

### *Aquaculture Mariculture (Including hitchhikers)*

- develop useful and applicable methodologies for assessing risk in a timely fashion
- publish guidelines to promote responsible use of exotic spp for aquaculture purposes
- regulate at International level to surmount transboundary issues

### 4 *Aquarium trade (Including hitchhikers)*

- develop useful and applicable methodologies for assessing risk in a timely fashion
- share risk profiling for species
- develop and implement public awareness programme for aquarists

### 5 *Live Seafood, Bait, packing materials*

- develop useful and applicable methodologies for assessing risk in a timely fashion
- develop and implement public awareness programme for consumers

## 2. Developing baseline knowledge:

- Develop an understanding of what species are currently in a country/region through stocktakes of literature, museum collections, traditional ecological knowledge (TEK), and establishing prioritised baseline surveys
- Identify species associations with transport mechanisms
- Develop freely available regional and global data warehouses of species based information on the physiological and ecological attributes
- Share the mechanisms and outcomes of risk profiling activities for species and vectors

### **3. Incursion and management response: including surveys, eradication/control and new research**

- Develop early warning systems and monitoring
- Use available tools and develop new tools for eradication
- Heighten understanding of priorities for action
- Increase understanding of societal expectations
- Develop guidelines and tools for incorporating into protected area management plans and budgeting processes, priority setting and the long-term management of priority and high risk invasive alien species (including control of pathways that lead to the introduction, spread and re-invasion of these species)

### **4. Cross-cutting issues:**

- Training, awareness raising (at all levels) and information sharing, building distributed information systems that

