

WORKSHOP ON BLUE CRAB MANAGEMENT IN THE MEDITERRANEAN

OUTCOMES SUMMARY



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For bibliographic purposes, this document may be cited as:

UNEP/MAP-SPA/RAC, 2025. Workshop on blue crab management in the Mediterranean - outcomes summary. 10p.

The workshop was organised with the support of the Italian Ministry of Environment and Energy Security (MASE).

The event was hosted by the Ministry of Agriculture, Food Sovereignty and Forests (MASAF).

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1 INTRODUCTION

1.1 Overview

Non-indigenous species (NIS)—also referred to as alien, exotic, non-native, or allochthonous species—are organisms introduced outside their natural range, often with significant ecological and economic consequences. A subset of these, known as invasive alien species (IAS), spread rapidly and negatively impact biodiversity, ecosystems, socio-economic values, and, in some cases, human health.

Invasive Alien Species (IAS) are recognized as a major threat to marine biodiversity in the Mediterranean, a challenge further intensified by climate change. The SPA/BD Protocol urges Contracting Parties to implement all necessary measures to regulate the introduction of Non-Indigenous Species (NIS), whether intentional or accidental, and to prohibit those that may harm ecosystems, habitats, or native species (Article 13.1). Furthermore, for alien species that have already established themselves, the protocol advocates for eradication efforts if scientific assessments confirm their harmful impact (Article 13.2).

In response, the Contracting Parties adopted the **Regional Action Plan on Invasive Species in the Mediterranean Sea** since 2003, with the most recent updated version in 2023 to enhance coordination and management strategies across the region.

The rapid expansion of two invasive blue crab species, *Callinectes sapidus* and *Portunus segnis*, has raised significant concerns due to their ecological impact and potential economic importance. The management of these species presents a dual challenge:

- **Product or invader?**
- **Threat or resource?**
- **To manage or not to manage?**

The Workshop on Blue Crab Management in the Mediterranean, organized by UNEP/MAP-SPA/RAC with support from the Italian Ministry of the Environment and Energy Security (MASE), brought together key stakeholders, scientists, fishers, civil society organizations, national institutions, and entrepreneurs to address the challenges and opportunities posed by the blue crab invasion in the Mediterranean. The event offered a platform for dialogue, knowledge exchange, and the formulation of potential management strategies tailored to the region's diverse realities.

1.2 Objectives

The key objectives of this workshop are:

- 1 Discuss best practices for controlling blue crab populations, addressing their ecological impacts, and enhancing local economies through sustainable practices.
- 2 Explore innovative solutions for balancing environmental concerns with economic development
- 3 Strengthen regional cooperation and facilitate knowledge sharing and collaboration among stakeholders.



2 WORKSHOP PRESENTATIONS

Please click on the title to access the presentation in Pdf.

Session 1: Status of blue crabs in the Mediterranean

This session provided an overview of the current state of blue crab populations in the Mediterranean, covering ecological impacts, ongoing research efforts, and data gaps. Key presentations included:

- [Status of blue crabs in the Mediterranean](#) by Guillaume MARCHESSAUX (SPA/RAC Consultant)
- [GFCM Research programme on blue crabs](#) by Luca BOLOGNINI (GFCM)

Session 2: Best practices and management measures

This session showcased successful initiatives and adaptive management strategies from different Mediterranean countries. Key insights included:

- [Blue crab in Tunisia: from a crisis to an opportunity](#) by Olfa BEN ABDALLAH (INSTM, Tunisia)
- [Blue-Adapt: a cross-border approach to managing invasive species in the Mediterranean \(A case study of blue crabs\)](#) by Jamila BEN SOUISSI (INAT, Tunisia)
- [From Curse to Blessing: Revolutionizing Crab Fishing in Tunisia](#) by Sassi ALAYA (Tunisian fisherman)
- [Upcycling blue crab waste into innovative biopolymers](#) by Anis BENGHALIA (CEO, Chitelix, Tunisia)
- [Impact of blue Crab invasion on aquaculture: the case of Italy](#) by Stefania CHIESA and Tommaso PETOCHI (ISPRA, Italy)
- [Non-Indigenous Species and Sustainable Gastronomy: The Blueat Vision](#) by Carlotta SANTOLINI (Leader, Blueat project, Italy)
- [Consuming the Blue Crab Before and After the Italian Outbreak: Insights for Policymakers and Industry Stakeholders](#) by Ernesto AZZURO (CNR-IRBIM, Italy)

Session 3: Outlines of an effective mitigation plan

Discussions in this session centered on concrete strategies for containment and management, with examples from different regions:

- [The blue crab \(*Callinectes sapidus*\) in Corsica. From the Working Group to the development of a Territorial Action Plan](#) by Marie GARRIDO (OEC, Corse, France)
- [Italy's initiatives for the containment and management of the blue crab invasion](#) by Sasa RAICEVICH (ISPRA, Italy)

Roundtables

Participants engaged in interactive discussions to outline key elements of a Mediterranean-wide blue crab management strategy. The roundtables focused on:

- Definition of a set of best practices for blue crab management measures by Guillaume MARCHESSAUX (SPA/RAC Consultant)
- [Best practices and management measures for mitigating the spread of blue crabs and addressing their impacts on biodiversity and local economies](#) by Guillaume MARCHESSAUX (SPA/RAC Consultant)





Roundtable Summary:

The workshop outlined five key strategies for managing invasive species, including prevention, management, knowledge sharing, communication, and governance. Awareness initiatives aim to integrate alien species into local culinary traditions, transforming an environmental challenge into economic opportunities.

- Effective management of blue crabs involves both control measures and economic incentives for fishers.
- National and international cooperation is essential for sustainable fisheries and invasive species management.
- Raising public awareness and culinary promotion can aid in the consumption of invasive species like blue crabs.
- Integrated approaches combining technical innovation and community involvement enhance management strategies.
- Educational initiatives, especially for women in seafood processing, can strengthen local economies and promote sustainability.

3 KEY OUTCOMES

Concerns about the invasion of **blue crabs** (*Callinectes sapidus* and *Portunus segnis*) have grown over the years. While **intensive fishing and canning** were initially seen as primary control measures, additional actions are needed for effective management:

1. Monitoring and Ecological Impact Assessment

- Study population dynamics, reproduction, and stock assessments.
- Use biological and ecological analyses (e.g., food web studies) to assess impacts on biodiversity.

Challenges: Limited long-term data and funding for continuous monitoring hinder accurate assessments. The specific effects on key native species or habitats are not well studied, making it difficult to predict ecological consequences.

2. Spatial Control and Fisheries Management

- Establish control periods based on population monitoring, especially during reproduction.
- Develop specialized fishing gear to minimize environmental impact.
- Strengthen local markets for blue crab products to reduce dependence on exports.

Challenges: The reliance on fishing and commercialization as control measures raises questions about their long-term effectiveness. Overfishing could lead to unforeseen ecological consequences or shifts in population dynamics. Additionally, the development of selective fishing gear requires investment and testing to ensure minimal impact on native species.

3. Public Awareness and Socio-Ecological Implications

- Promote blue crab consumption through cooking events and media campaigns.
- Educate stakeholders on the socio-economic and ecological benefits of commercialization.
- Engage fishers and local managers through **Local Ecological Knowledge (LEK) studies**.

Challenges: Although promoting blue crab consumption is an innovative idea, potential barriers include cultural resistance, culinary acceptance, and safety concerns related to consuming invasive species. There may also be logistical challenges in scaling up commercial use while maintaining sustainability.

4. Early Detection and Rapid Response

- Implement citizen science programs and surveillance systems for early detection.
- Encourage reporting and containment measures, particularly for *Portunus segnis*, which is still expanding.

Challenges: Lack of public awareness and engagement in reporting blue crab sightings may limit the effectiveness of citizen science programs. Additionally, coordinating a rapid response across multiple regions with different regulatory frameworks is complex and requires strong institutional support.

5. International Cooperation

- Develop cross-border projects between Mediterranean countries.
- Organize international meetings to share best practices.
- Establish a **Mediterranean Blue Crab Action Committee** under the GFCM Blue Crabs Program for coordinated regional action.

Challenges: Political and economic differences between Mediterranean countries can create obstacles to effective collaboration. Varying national policies on invasive species management may slow down decision-making and implementation of harmonized strategies. Additionally, securing long-term funding for cooperative projects remains a significant challenge.

4 RECOMMENDATIONS AND NEXT STEPS

Growing Concern & Urgency of Actions

The invasion of *Callinectes sapidus* and *Portunus segnis* poses significant ecological and economic challenges in the Mediterranean region. The workshop highlighted the urgent need for coordinated action to address the blue crab invasion in the Mediterranean

Collaboration is Key

The cross-border nature of the problem, underscore the importance cooperation such as those discussed in the workshop (among scientists, policymakers, industry stakeholders, and local communities) and at all levels to manage their impacts effectively.

Turning Challenges into Opportunities

The workshop demonstrated that the blue crab invasion can be transformed from a challenge into an opportunity. By developing innovative solutions, such as sustainable fishing practices and bio-compound production, communities can mitigate the negative impacts of blue crabs while creating new economic opportunities.



The workshop concluded with a call to action for the development of a Mediterranean-wide management strategy for blue crabs. This strategy should be based on the best practices and insights shared during the workshop and in line with the GFCM research programme on blue crab and should involve all relevant stakeholders in its implementation.

The event reaffirmed the shared commitment of Mediterranean countries to tackle the challenges posed by blue crab species through coordinated actions, innovation, and sustainable management solutions.



5 ANNEXES

List of Participants

ALBANIA

Ms Artenida DURAKU

BOSNIA AND HERZEGOVINA

Mr Admir ALADZUZ

CROATIA

Ms Martina MARIC

Ms Tanja MIHINJAC

CYPRUS

Mr Periklis KLEITOU

Mr Demetris KLETOU

EGYPT

Mr Mohamed Said ABDELWARITH ATTEA

FRANCE

Mr François DELAQUAIZE

Ms Margot DENTAN

Mr Guillaume MARCHESSAUX

Ms Marie GARRIDO

GREECE

Ms Argyro ZENETOS

Ms Roxani Naasan AGA SPYRIDOPOULOU

ISRAEL

Ms Edna GUK

LEBANON

Ms Lara SAMAHA

Mr Michel BARICHE

LIBYA

Mr Mohamed Miled Mukhtar HAJAJI

Ms Sarra AL MABRUK

MALTA

Ms Myra BUGEJA

MONTENEGRO

Ms Slavica KASCELAN

ITALY

Ms Daniela ALUNNO MANCINI

Ms Sasa RAICEVICH

Ms Cristina FARCHI

Ms Silvia SARTORI

Ms Annalisa PATANIA

Mr Ernesto AZZURRO

Ms Carlotta SANTORINI

Mr Stefano LELLI

Mr Luca BOLOGNINI

Ms Stefania CHIESA

Mr Tommaso PETOCHI

Ms Maria Vittoria BRISCOLINI

SPAIN

Ms Lydia PNG

TUNISIA

Ms Samia HLEL KCHOUK

Mr Sassi ALAYA

Mr Mohamed Anis BENGHALIA

Ms Olfa BEN ABDALLAH

Ms Jamila BEN SOUISSI

TÜRKIYE

Ms Aylin ULMAN

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Ms Merve KAKARAKUŞ

SPA/RAC TEAM

Mr Atef OUERGHI

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Ms Emna DEROUICHE

Ms Dorra MAAOUI

Mr Elyes Mahmoud HAMZA

Ms Naziha BEN MOUSSA

Ms Imtinen KEFI



Agenda Overview

Time	Session
09:00-09:15	Opening of the workshop Welcome speech <ul style="list-style-type: none"> Mr Mahmoud Elyes HAMZA, Director, UNEP/MAP-SPA/RAC Ms Daniela ALUNNO MANCINI, Head of Unit Division, General Directorate for biodiversity and sea protection
09:15-09:20	Overview of workshop objectives and agenda <ul style="list-style-type: none"> Mr Atef OUERGHI, Programme Officer, UNEP/MAP-SPA/RAC
Session 1: Status of blue crabs in the Mediterranean	
09:20-09:45	Status of blue crabs in the Mediterranean by Guillaume MARCHESSAUX (SPA/RAC Consultant)
09:45-10:00	GFCM Research programme on blue crabs by Luca BOLOGNINI (GFCM)
10:00-10:30	Coffee Break
Session 2: Best practices and management measures	
10:30-10:45	Blue crab in Tunisia: from a crisis to an opportunity by Oifa BEN ABDALLAH (INSTM)
10:45-11:00	Blue-Adapt: a cross-border approach to managing invasive species in the Mediterranean (A case study of blue crabs) by Jamila BEN SOUISSI (INAT, Tunisia)
11:00-11:15	From Curse to Blessing: Revolutionizing Crab Fishing in Tunisia by Sassi ALAYA (Tunisian fisherman)
11:15-11:30	Upcycling blue crab waste into innovative biopolymers by Anis BENGHALIA (CEO, Chitelix)
11:30-11:45	Impact of blue Crab invasion on aquaculture: the case of Italy by Stefania CHIESA & Tommaso PETOCHI (ISPRA)
11:45-12:00	Non-Indigenous Species and Sustainable Gastronomy: The Blueat Vision by Carlotta SANTOLINI (Leader, Blueat project)
12:00-12:15	Consuming the Blue Crab Before and After the Italian Outbreak: Insights for Policymakers and Industry Stakeholders by Ernesto AZZURO (CNR-IRBIM)
Session 3: Outlines of an effective mitigation plan	
12:15-12:30	The blue crab (<i>Callinectes sapidus</i>) in Corsica. From the Working Group to the development of a Territorial Action Plan by Marie GARRIDO (OEC, Corse)
12:30-12:45	Italy's initiatives for the containment and management of the blue crab invasion by Sasa RAICEVICH (ISPRA)
12:45-14:30	Lunch Break
14:30-16:30	Roundtables <ul style="list-style-type: none"> - Definition of a set of best practices for blue crab management measures. <ul style="list-style-type: none"> Best practices and management measures for mitigating the spread of blue crabs and addressing their impacts on biodiversity and local economies by Guillaume MARCHESSAUX (SPA/RAC Consultant) - A draft outline of Mediterranean management strategy. <ul style="list-style-type: none"> Outlines of an effective mitigation plan and context-specific management strategy by Guillaume MARCHESSAUX (SPA/RAC Consultant)
16:30-17:00	Conclusions and recommendations



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