



General Fisheries Commission for the Mediterranean  
Commission Générale des Pêches pour la Méditerranée



LaMed-2 Project

# Responsible fisheries in Mediterranean coastal lagoons

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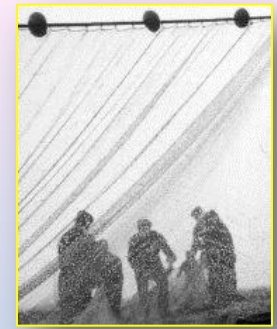
\*\* *GFCM*

Meeting on

Mediterranean coastal lagoons management:  
interaction between aquaculture and capture  
fisheries

Cagliari, Italy, 28-30 June 2011

# Coastal Mediterranean aquaculture: “an evolutionary process”



Phase 1: Coastal lagoons as capture fisheries grounds

Phase 2: Coastal lagoons and controlled access

*ex. Egyptian hosha*

*property?, fishing rights?*

Phase 3: Coastal lagoons equipped with fish barriers

*ex. North Adriatic Valliculture and similar*



Phase 4: Coastal lagoons equipped with hydraulic control and fish barriers

Phase 5 : Coastal lagoons as “land” exploited through intensive aquaculture



*land based facilities*



*in- and offshore culture cages*

recruitment from the wild, both natural and through restocking

fry and juveniles from hatcheries



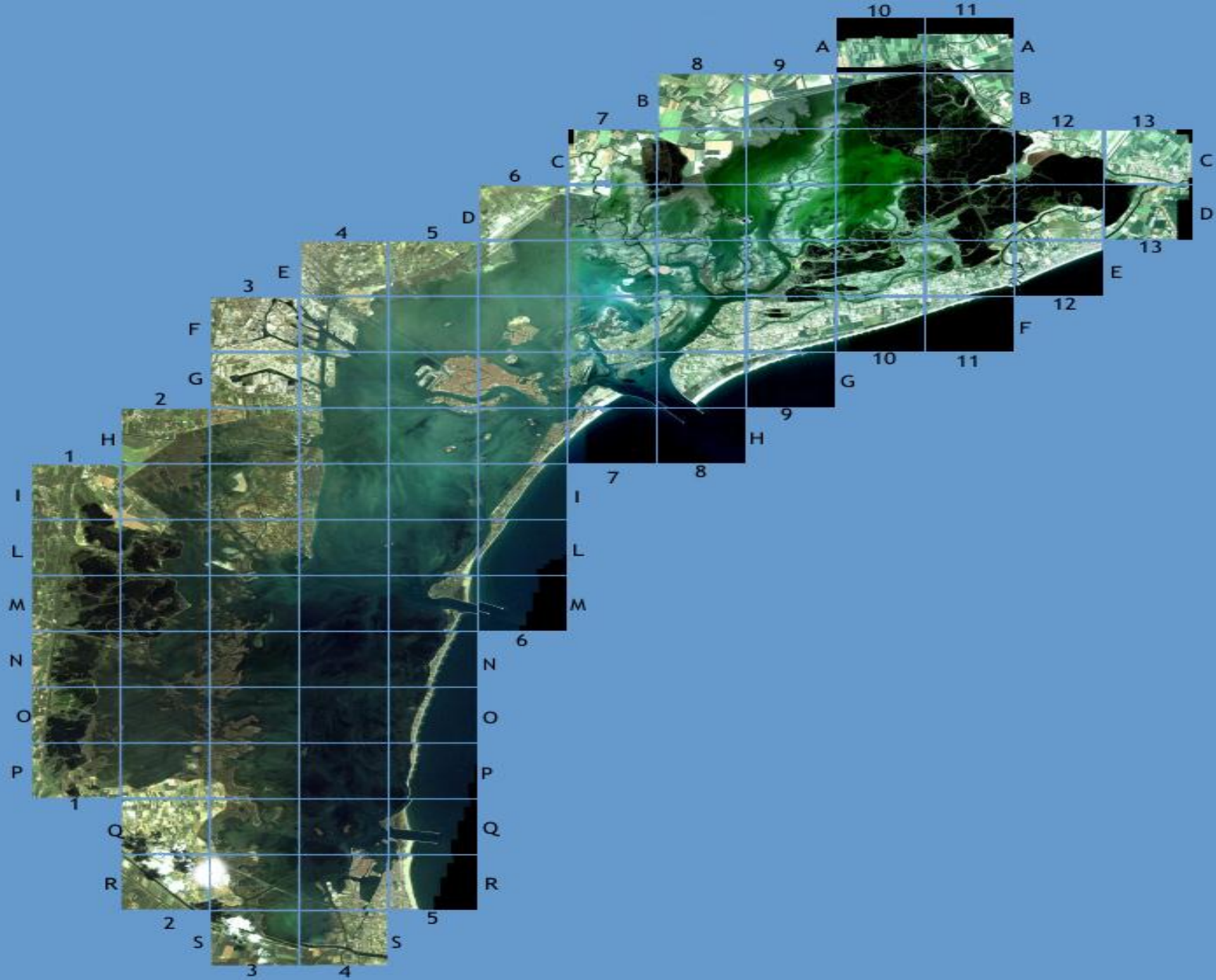
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## Mediterranean CLs : numbers and surface

|              | n   | ha      | min surface | max    |                                 |
|--------------|-----|---------|-------------|--------|---------------------------------|
| Italy        | 190 | 143,000 | 10          | 57,770 | Venice                          |
| Turkey       | 72  | 37,389  | 4           | 6,500  | Bafa Lagoon                     |
| France (Med) | 17  | 53,000  | 86          | 15,000 | Berre                           |
| Montenegro   | 2   | 1,642   | 150         | 1,492  | Ulcjini                         |
| Morocco      | 1   | 11,500  |             |        | Nador                           |
| Algeria      | 1   | 865     |             |        | Mellah                          |
| Spain        | 13  | 19,553  |             |        |                                 |
| Lybia        | 5   | 3,490   |             |        |                                 |
| Albania      | 12  | 26,171  |             |        |                                 |
| Egypt        | 6   | 203,000 |             | 78,000 | Manzala                         |
| Greece       | 76  | 34,511  | 30          | 15,000 | Messolonghi complex (6 lagoons) |
| Tunisia      | 6   | 52,000  |             |        |                                 |

At least two-thirds of all the fish directly consumed worldwide are dependent on coastal wetlands, which provide spawning, nursery and feeding grounds.





1610. Laguna sud, da Chioggia a Malamocco. Eseguito in occasione della conterminazione. A. Fabris, 1991



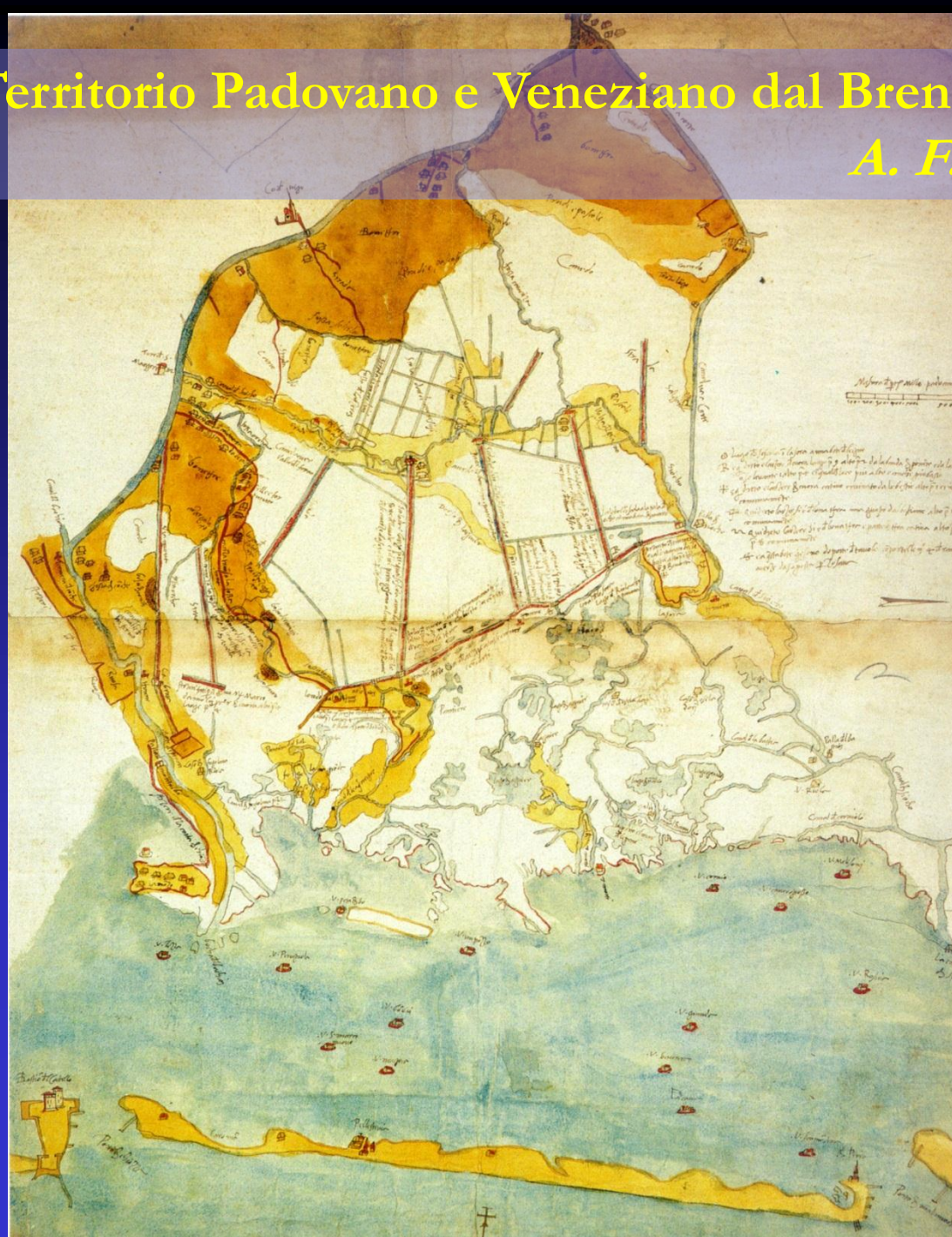
# 5 maggio 1692. Piove di sacco dalla Brenta Nuova alla Laguna morta

A. Fabris, 1991



# XVI sec. Territorio Padovano e Veneziano dal Brenta al mare

*A. Fabris, 1991*











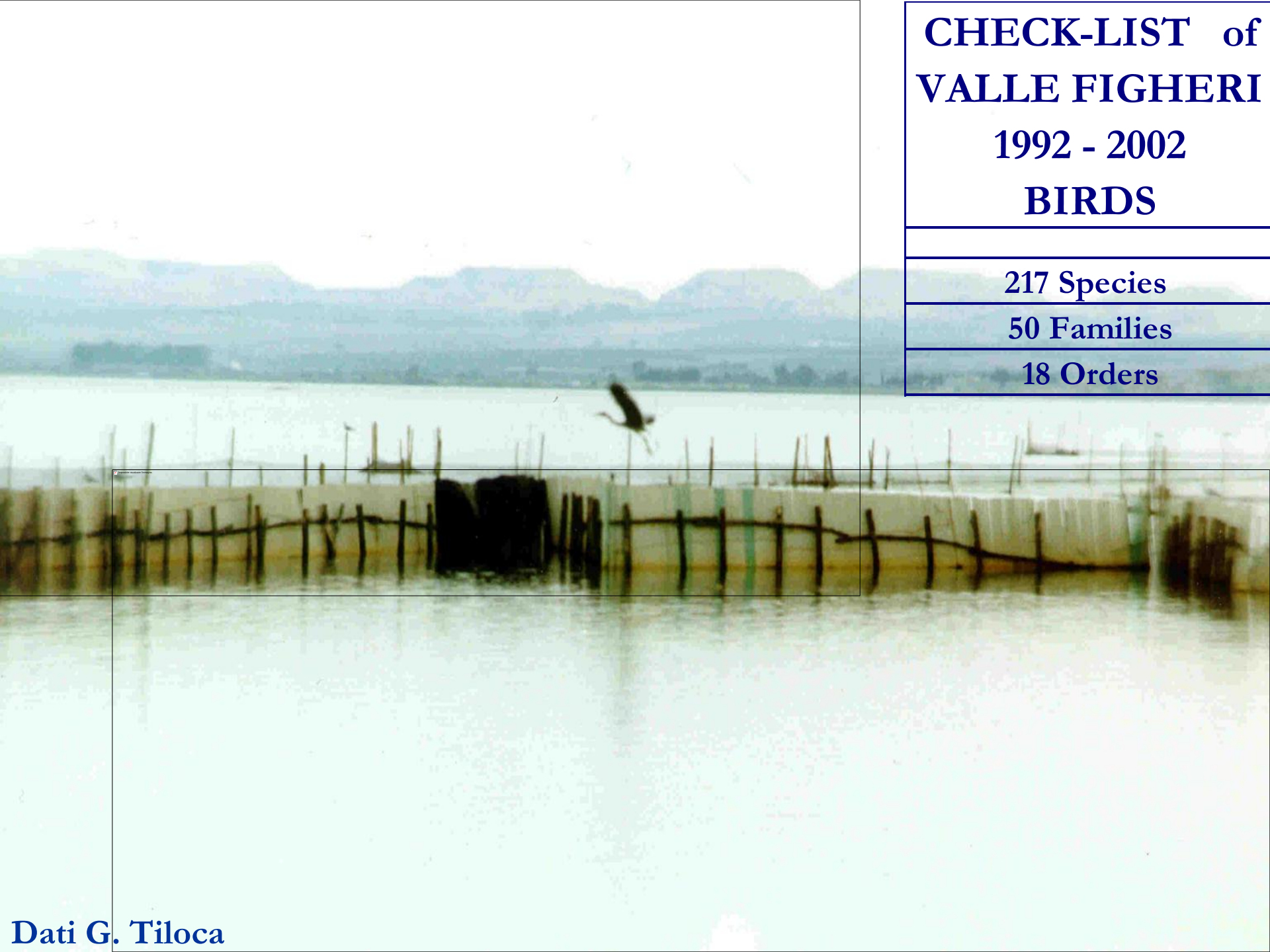


# CHECK-LIST of VALLE FIGHERI 1992 - 2002 BIRDS

217 Species

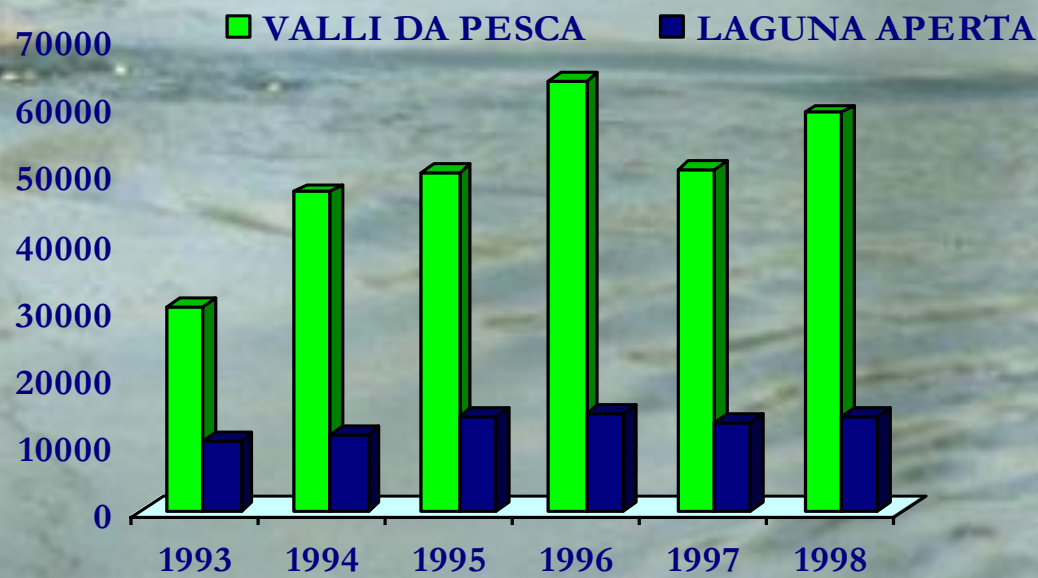
50 Families

18 Orders



**CENSUS OF  
AQUATIC BIRDS  
WINTERING IN  
VENICE LAGOON**

**LAGUNA SUD**





## LaMed-2 Project

# Ramsar Convention

An international treaty for the conservation and sustainable utilization of wetlands, developed and adopted by participating nations at a meeting in Ramsar on February 2, 1971, and came into force on December 21, 1975.

....to “develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits/services”.

## Ramsar List of Wetlands of International Importance

|   | Med+Black Sea GFCM<br>Member countries | World              |
|---|--|--------------------|
| <b>Number of contracting parties</b>              | <b>24</b>                              | <b>160</b>         |
| <b>N. of sites designated for the Ramsar List</b> | <b>355</b>                             | <b>1,932</b>       |
| <b>Total surface area</b>                         | <b>9,327,449</b>                       | <b>187,999,242</b> |
|   | <b>5% surface<br/>18.3% number</b>     |                    |

Not all Ramsar sites are CLs.

For instance, in Italy 42 sites:

- 30 (71%) are coastal lagoons
- 2 are salt pans



## Ramsar Convention

1975

The 'ecosystem services' – the benefits people obtain from ecosystems – provided by wetlands:

- 1. Flood control**
- 2. Groundwater replenishment**
- 3. Shoreline stabilisation & storm protection**
- 4. Sediment & nutrient retention and export**
- 5. Water purification**
- 6. Reservoirs of biodiversity**
- 7. Wetland products**
- 8. Cultural values**
- 9. Recreation & tourism**
- 10. Climate change mitigation and adaptation**







## Ramsar Convention

1975

### ***Reservoirs of biodiversity***

**Ecosystem & species richness** – the many different types of wetlands around the world support a vast array of plants and animal species.

**Species abundance** – species from some groups of animals, such as fish, invertebrates and waterbirds, may occur in huge concentrations in wetlands.

**Uniqueness** – some species are endemic to particular wetlands, meaning they are found nowhere else on Earth.

**Genetic variation** – safeguarding the variety of life in different types of wetlands in different parts of the world is a vital part of humanity's insurance policy for a sustainable future.

**Economic value** – wetland plants and animals provide people with countless products, that are harvested, bought, sold and bartered all over the world, from fish, to building materials, to medicines.

**Under threat** – wetland species are declining faster than those from other ecosystems, as a result of land conversion and excessive water abstraction.

but.....





## Ramsar Convention

1975

### **CULTURAL VALUES**

The wetland landscapes and wildlife we value today typically result from complex interactions between people and nature over centuries. Once these intimate linkages are damaged or destroyed, it is rarely possible to restore or recreate them.

Four main components:

**Habitation** – cultural landscapes, cultural heritage sites, archaeological importance, contemporary settlements and infrastructure;

**Primary uses of wetland resources** – agriculture, livestock rearing, fishing and aquaculture, harvesting of wood, water use, mining/extraction of minerals and aggregates, harvesting of medicinal plants;

**Secondary uses of wetland resources** – culinary use of wetland plants and animals, crafting of products and tools, construction of traditional buildings, tourism and recreation;

**Knowledge, belief systems and social practices** – scientific research, education, and traditional knowledge – including languages/dialects and oral traditions, spirituality and belief systems, artistic expression.



## LaMed-2 Project

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- who contributes to coastal lagoon degradation?
  - who contributes to coastal lagoon conservation?
  - which approach could ensure sustainability in use and conservation?

# Piscivorous birds



little egret (*Egretta garzetta*)

black-crowned night heron  
(*Nycticorax nycticorax*)



grey heron (*Ardea cinerea*)



great cormorant

(*Phalacrocorax carbo*)



European population of cormorants  
20x over the past 25 years,  
estimated in 1.7- 1.8 million birds

1 cormorant eats 500g of fish/day



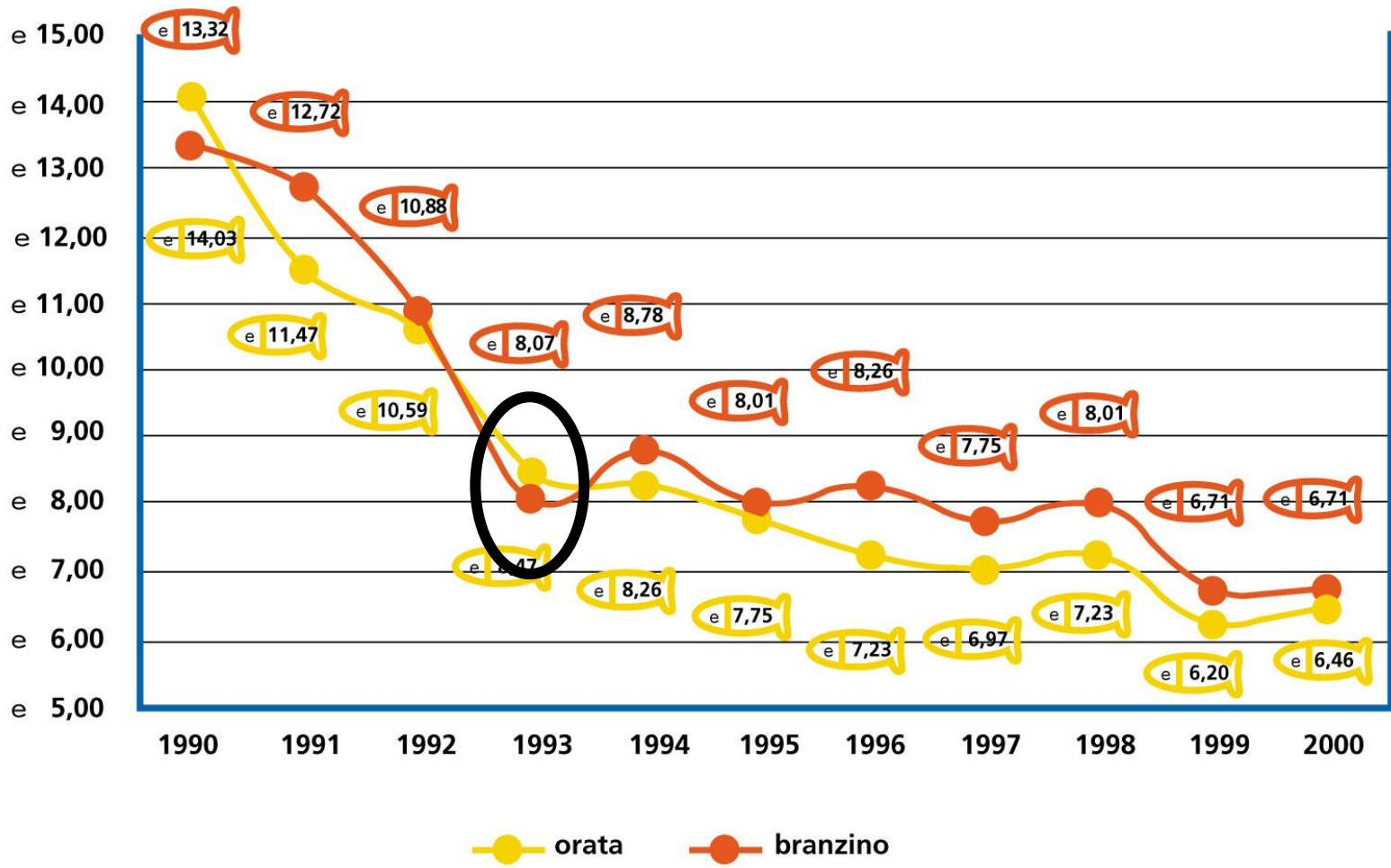
In Dec 2008, the European Parliament adopted a resolution on the application of a European cormorant management plan to minimise the increasing impact of cormorants on fish stocks, fishing and aquaculture.

.... "cormorants have caused proven permanent damage to aquaculture undertakings and stocks of many wild fish species"...

fishers` campaigns



The European Union funded the project "Sustainable management of cormorant populations", which aims at supplying an estimation model for the size and structure of the total cormorant population on the basis of currently available data on breeding population, fertility and mortality (started 1<sup>st</sup> Feb 2011)





## LaMed-2 Project

According to GFCM tasks in this meeting, we have to identify a series of reliable tools to support the decision making process focused on:

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- to save coastal lagoons as sensitive habitats (meaning of fisheries science)
- to weld wildlife conservation and sustainable traditional human activities
- to stimulate the preparation of an Action Plan for coastal lagoons conservation and management within the GFCM context, based on a realistic evaluation of the institutional failure that partly affected the conservation strategy over the years





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