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Background

The northern Venice Lagoon (SCI IT3250031) holds several Annex I-listed habitats of the Habitats Directive, such as the habitat type 1150* (Coastal lagoons). Recent monitoring activities showed that conservation status of the habitat 1150* is improving within SCI IT3250031, but it is still unfavourable in the inner landward areas, due to lack of ecotonal buffer areas, favouring self-regulation processes, between lagoon and mainland. In the past, the project area was occupied by reedbeds in large amounts, now significantly receded due to increasing of lagoon water salinity, caused by historical human activities (e.g. diversion of rivers with reduction of freshwater supply, inlet and channel excavation). With reduction or disappearance of reedbeds, their contribution to ecosystem services, like supporting numerous biological communities and species, are minimised.

Maps from "L'evoluzione morfologica della Laguna di Venezia attraverso la lettura di alcune mappe storiche e delle sue carte idrografiche" (Dipartimento IMAGE dell'Università di Padova), Comune di Venezia, (Ed.) Istituzione Centro Previsioni e Segnalazioni Maree, Legge Speciale per Venezia, 2010

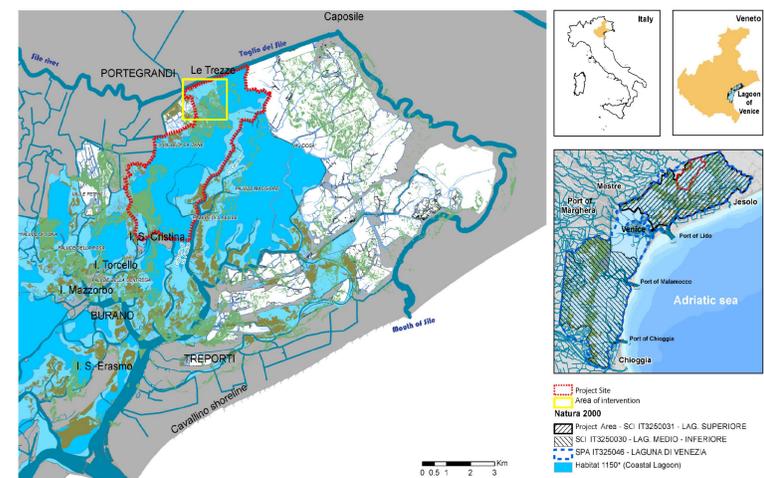


Map of the Venice Lagoon based on 2002-2003 surveys made by Magistrato alle Acque di Venezia through Consorzio Venezia Nuova

First hydrographical map of the Venice Lagoon with modern topographic criteria based on 1809-1811 surveys

Project aim

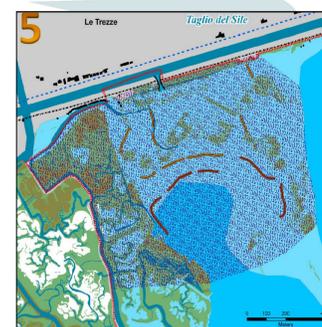
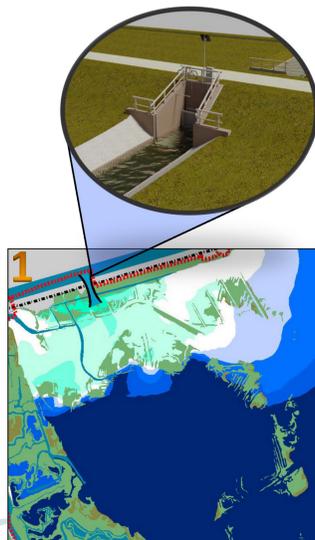
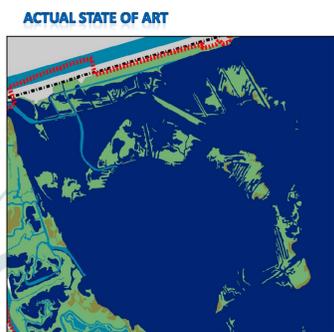
The LIFE LAGOON REFRESH (LIFE16 NAT/IT/000663) project, started on Sept 2017, foresees the restoration of favourable conservation status of habitat 1150* in the northern Venice Lagoon and the recreation of favourable habitats for faunal species of community interest.



Project actions

1. Diversion of a freshwater flow from the Sile river into the lagoon (necessary for the recreation of the typical salt gradient of buffer areas between lagoon and mainland).
2. Restoration of intertidal morphology through the implementation of structures properly arranged to slow down the freshwater dispersion and to favour reedbed development.
3. Planting of *Phragmites australis* to accelerate the development of the reedbeds.
4. Transplantation of small clumps of seagrass species of the habitat 1150*, suitable to accelerate the recolonization by aquatic plants of low-salinity environments.
5. Establishment of a security zone (coinciding with the restoration area of reedbed, habitat for bird species), banning all mobile hunting methods (e.g. tracking, stalking, pursuing), and controlling the fishing pressure).

Fishermen and hunters, who regularly frequent the SCI IT3250031, will be involved in the reedbed and seagrass transplant actions, thus raising awareness on the conservation and restoration of habitats and species.



Project objectives

- 1) To improve the Degree of Conservation of habitat 1150* - Coastal lagoons: a) recreating the typical estuarine oligo-mesohaline environments, in order to counteract the depletion of macrobenthic and fish communities in the Lagoon. Indeed, during last years, the brackish species have been replaced by those from the sea; b) reducing the degree of eutrophication, thanks to reedbed phytoremediation function, favoring the presence of sensitive species and aquatic plants of high ecological value. These characteristics are typical features of habitat 1150* in good/high level of preservation.
- 2) To improve, within the Venice Lagoon - SPA IT3250046, the status of bird species included in annex I of the Birds Directive (Dir. 2009/147/EC) and using the reedbed environment during the winter period and/or for breeding, foraging or nesting: *Phalacrocorax pygmeus**, *Botaurus stellaris**, *Ardea purpurea*, *Ixobrychus minutus*, *Circus aeruginosus*, *C. cyaneus*, *Alcedo atthis*.
- 3) To increase the presence of the fish species *Pomatoschistus canestrinii*, included in the annex II of the Habitats Directive (Dir. 92/43/EEC), attracted by low-salinity environments.

The improvement of the habitat 1150* trophic state will contribute to the achievement of the Good Ecological Status according to the Water Framework Directive (Dir. 2000/60/EC) for the area. The restoration of salt gradient and reedbed surfaces will contribute to increase biodiversity in the SCI, according to the 2020 Biodiversity Strategy. Moreover, the increasing of other bird species of special conservation interest (such as *Locustella luscionioides*, *Acrocephalus arundinaceus*, *Panurus biarmicus*, *Emberiza schoeniclus*) and fishes, such as seabass (*Dicentrarchus labrax*), eel (*Anguilla anguilla*), grey mullet (gen. *Mugil*, Liza, Chelon), smelt (*Atherina boyeri*), flounder (*Platichthys flesus*), juveniles of several species and Decapoda (*Palaemon* spp. and *Palaemonetes* sp.) also of commercial interest, are expected.

