THE PROJECT

Preservation of the main European population of Mediterranean Cory's Shearwater *Calonectris diomedea* and other pelagic birds in the Pelagie Islands

The island of Linosa (Agrigento, Sicily Channel) is home to the largest colony of the European Union (second world-wide) of Mediterranean Cory's Shearwater (*Calonectris diomedea*), Mediterranean endemic and estimated at 10,000 pairs, representing more than 60% of the Italian population, over 20% of Europe population and about 15% of the Mediterranean population.

The Cory's Shearwater also nests with a small population on the island of Lampedusa and about 200 pairs on the lilltle island of Lampione.

The colony is located in the "core" of the species, where conservation actions can affect significantly on the condition of the entire subspecies; in fact, the other largest colonies are found in the Strait of Sicily in Zembra (Tunisia), in Malta and in the Island of Pantelleria (Sicily).

Island of Linosa plays a strategic role as a staging area for thousands of migratory birds during the crossing of the Mediterranean. The recovery of energy for these birds is possible only if in the island we have the presence of diverse natural and semi-natural species-rich habitat.

Of the 308 plant species found in Linosa, 74 (22 Bryophytes) are considered "floristic emergencies" because:

1) protected by laws and international guidelines;

2) included in regional "Red List"

3) endemics exclusive of Sicily, in the domain Apulo-Siculo or central Mediterranean area sensu lato;

4) rare endemics at national, regional and/or provincial rank;

5) endemics on the edge of their distribution range (mostly Mediterranean south-western and central-eastern) and / or their altitudinal range.

About habitats, regardless of their size, should be noted the great and sometimes excellent level of integrity / representativeness of natural habitats.

A significant surface of the island is characterized by fallow evolving towards aspects related to the habitat of garrigue and steppe; these are already one of the most important pieces of the local semi-natural mosaic because their rich flora in general and for the high number of rare species hosted.

The same applies to the pre-forest environments coincident with tree crops uncultivated, which could evolve into a rich and complex communities of thermophilic maquis; this is expanding and making more continuous forest areas.

Project Objectives:

- the protection of the Linosa nesting population of Mediterranean Cory's Shearwater *Calonectris diomedea* by eliminating the main cause of threat, ie the predation of eggs and nestlings by the black rat *Rattus rattus*, which rate of predation can be up to 40-50% .

- the protection of other vertebrate species of Community Importance, present in Linosa with small populations or in Lampedusa , such as the Loggerhead Sea Turtle (*Caretta caretta)*, Mediterranean Storm Petrel (*Hydrobates pelagicus melitensis*) or with large populations such as Mediterranean Manx Shearwater (*Puffinus yelkouan*), threatened to varying degrees by predation of black rat.
- the protection of the Linosa population of Greater Short-toed Lark (*Calandrella brachydactyla*), threatened by the expansion of alien plant species in Linosa.
- increased levels of naturalness of the entire island ecosystem by eliminating some of the most invasive alien plant species in the Mediterranean level (Hottentot Fig *Carpobrotus edulis* and Tree Tobacco *Nicotiana glauca*)
- protect the cliffs habitat with Mediterranean coasts vegetation of endemic *Limonium* sp, threatened by invasion of Hottentot Fig *Carpobrotus edulis*
- the enhancement of the population of Cory's Shearwater Mediterranean to support the development of a "Green Tourism" concentrated outside the usual tourist season, thus contributing to the spread in the local community of a "tilt" for the conservation of both this bird pelagic and other natural emergencies.
- the growth of a "Green Tourism" also in Lampedusa, thereby reducing impacts resulting from summer tourism

Actions and methodology

The eradication of the black rat on the island of Linosa will be done through the distribution of rodenticide baits and will be carried out using a joint methodology, always according to a predetermined pattern, with approximately 4 dispensers or 16 points with pellets / ha with:

1. protected bait within rigid providers operating in populated or visited areas
2. free bait; release of groups of pellets in remote areas, in protected sites, cracks between the rocks, under stones piled up, specially hidden under tufts of grass or thorny bushes, etc..

The action will be preceded and accompanied by preparatory activities for both scientific (monitoring of abundance and identification of the most critical periods for rats, investigation and testing of non-target species with possible adoption of protective measures) and information and dialogue with local community.

The method adopted has no risk of environmental pollution and will be taken special precautions for stray dogs and cats. The detailed plan of action will be subject to peer review.

During the eradication will also be implemented biosecurity measures (to reduce the risk of re-colonization), which, adjusted and improved, will be maintained for an indefinite period after the conclusion of the project.

Diversified manual and mechanical interventions for removal the Hottentot Fig and the Tree Tobacco will be implemented; these plants , alien plant species whose eradication is still possible in Linosa.

Eradication of Hottentot Fig helps to promote successful eradication of the black rat as this plant (in islands where it is present), is one of the main food resources for populations

of black rat, especially during dry seasons, and its elimination will help therefore the consumption of rodenticide baits; the elimination of Tobacco Tree and progressive replacement of the formations of species nitrophilous and ruderal will allow to reduce the presence of optimal habitat for the rat and for the settlement of other alien species.

Will be conducted monitoring activities, such as census of seabird populations in Lampedusa and the role of predation of Black rats.

Will enable innovative communication actions based on network with the methods and techniques of Web 2.0 to promote nature tourism on the island of Linosa and Lampedusa, with activities designed to focus specifically on Cory's Shearwater and trying to stimulate the inovative activities that valorise their presence.

Will be made the assessment of the economic and health care of the black rat eradication (and comparison with the costs involved in biosecurity measures) and the assessment of the effects of marketing actions.

Expected Results

The eradication of the Black rat allows a recovery of the levels of naturalness and an improvement in the state of preservation of native species, exspecially *Calonectris diomedea*. So is expected the elimination of the factor which lowers the reproductive success of 40-50% of this species provides.

Thus expected an improvement in the overall condition of the species and also the possible restoration of appropriate conditions for the growth of the small population of Manx Shearwater Mediterranean and Bird storms Mediterranean species now confined in caves inaccessible to rats.

The eradication of two of the most invasive alien plant species on the islands of the Mediterranean, whose predictable expansion poses a serious threat to the natural habitats of Linosa Island as well as native plants *Pancratium lopadusanum* and *Limonium angustifolium,* will facilitate the successful eradication of *Rattus rattus* and remove the degraded environments suitable for rats and other alien species.

Is also expected a significant increase of awareness in the local community for the value of the population of *Calonectris diomedea* and natural values of the islands, with spontaneous termination (and therefore permanent and zero cost) of the collection of eggs and subsequent removal of the other main cause threat of acting on this population in Linosa; a general enhancement of Natural Resources of the two major islands of the Pelagie is also expected.