



Bringing the people together can be a solution to protect the island wetlands

WWF Greece's volunteer network for the protection of wetlands: the example of Crete Island

Maria Nidou, Thanos Giannakakis, Kaloust Paragamian

WWF Greece, Island wetlands project office, 82 Ethnikis Antistaseos st, Irakleion, Crete GR 71306, k.paragamian@wwf.gr

Introduction

In 2004, WWF Greece undertook the initiative to inventory the wetlands of the Aegean islands and to promote actions to effectively conserve them. Until then, the knowledge on the number, importance and problems of the island wetland ecosystems, was rather fragmented, despite the fact that there were various references highlighting their importance. The revealing results of this first assessment¹ drove the organization to expand the project to the rest of the Greek Islands (Ionian Archipelagos, Island of Crete).

The main objectives of the project "Conservation of the Island wetlands of Greece" was not only to inventory and monitor the state of these wetlands, but also to stop their degradation, develop conservation examples in specific island wetlands and build capacities so that the wetland ecosystems could be protected by the locals.

Consequently, it is well known that an environmental protection project can be achieved only in close relationship and co-operation with the local communities, therefore the establishment of networks of active citizens was a natural resultant.

Initially, an early warning system organized in 6 Aegean Islands (Limnos, Lesvos, Andros, Kos, Paros, Skyros) but the main effort was given to the establishment of the network in the island of Crete. Finally, taking into account the international experience^{2,3,4,5}, an integrated network system was set up and today, almost 50% of the natural wetlands of Crete are monitored systematically by volunteers (Fig. 1).

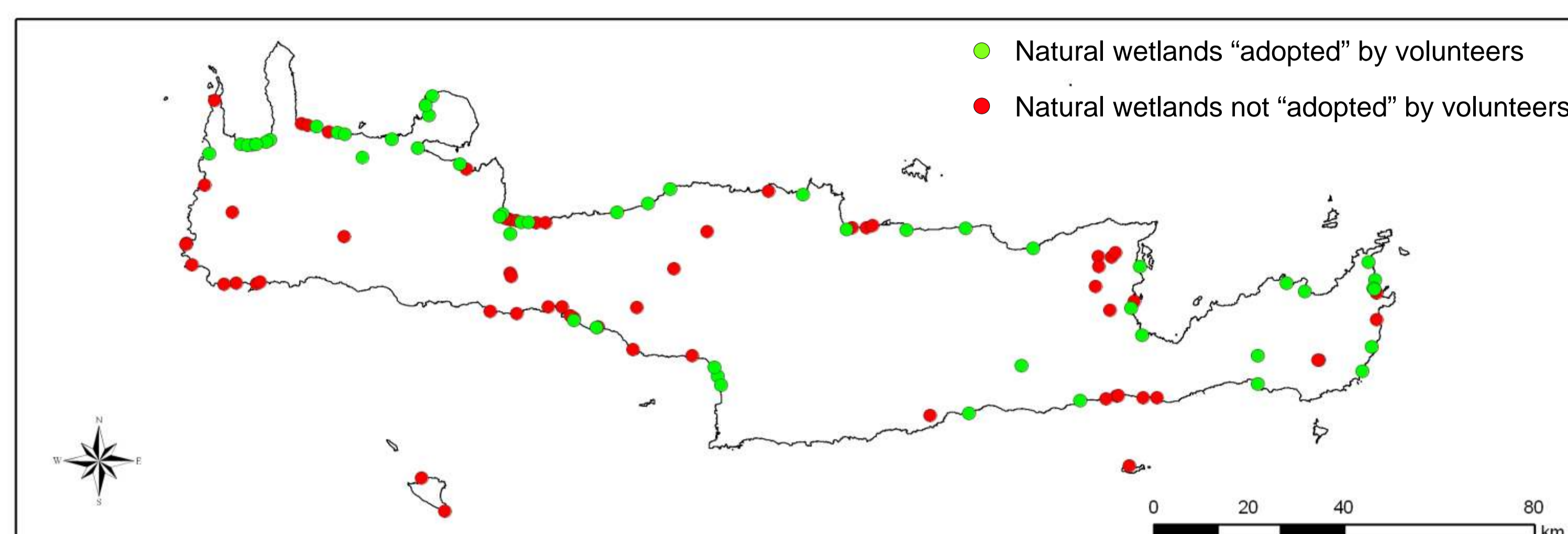


Fig. 1. The natural wetlands of Crete

The framework

The "active citizens" network (Fig. 2a)

In 2011 a **volunteer based early-warning system** started in Crete, the largest Greek island with 210 wetlands (109 natural and 101 artificial). Seminars and field training were carried out to all interested in participating in the network and subsequently each of the volunteers "adopted" one or more natural wetlands and undertook **the responsibility to monitor and record human interventions** in a monthly basis. In order to support the volunteers, scientific data from the research project were provided (maps with the delineation of the wetlands, description about their protection status and degradation problems they are facing, flora and fauna, etc).

Additionally, almost every two months the **main water quality indicators** (pH, coli form, phosphate, turbidity, dissolved oxygen, nitrate and salinity) are tested using the Estuary and Marine monitoring Kit (LaMotte Code 5911) which is appropriate for easy, fast and quite accurate water quality measurements (Fig. 3).

Aiming at **strengthening the network connection**, the members have the opportunity to participate in meetings and excursions and furthermore, a special private group has been established in *Facebook*.

Proceeding with the data (Fig. 2b)

The input data received from the volunteers (photos, maps and protocols) are analyzed and compared to the data of the research project. In cases of new degradation problems, a **complaint letter** is compiled along with the support of the Legal team of WWF Greece and sent to the relevant public services (environmental offices of regions and municipalities, urban planning offices, forest districts etc) notifying the incident, asking for the legality of these interventions or even proposing some restoration actions.

Simultaneously, the confirmed issues are being communicated (with the support of the Communication Department of WWF Greece) through local mass media, WWF's blog (<http://wwfaction.wordpress.com>) and website (<http://www.wwf.gr>) with the intention to **raise awareness in the local society** regarding the problem.

Last but not least, the **local politicians** are made aware of the issue and are invited to take action.

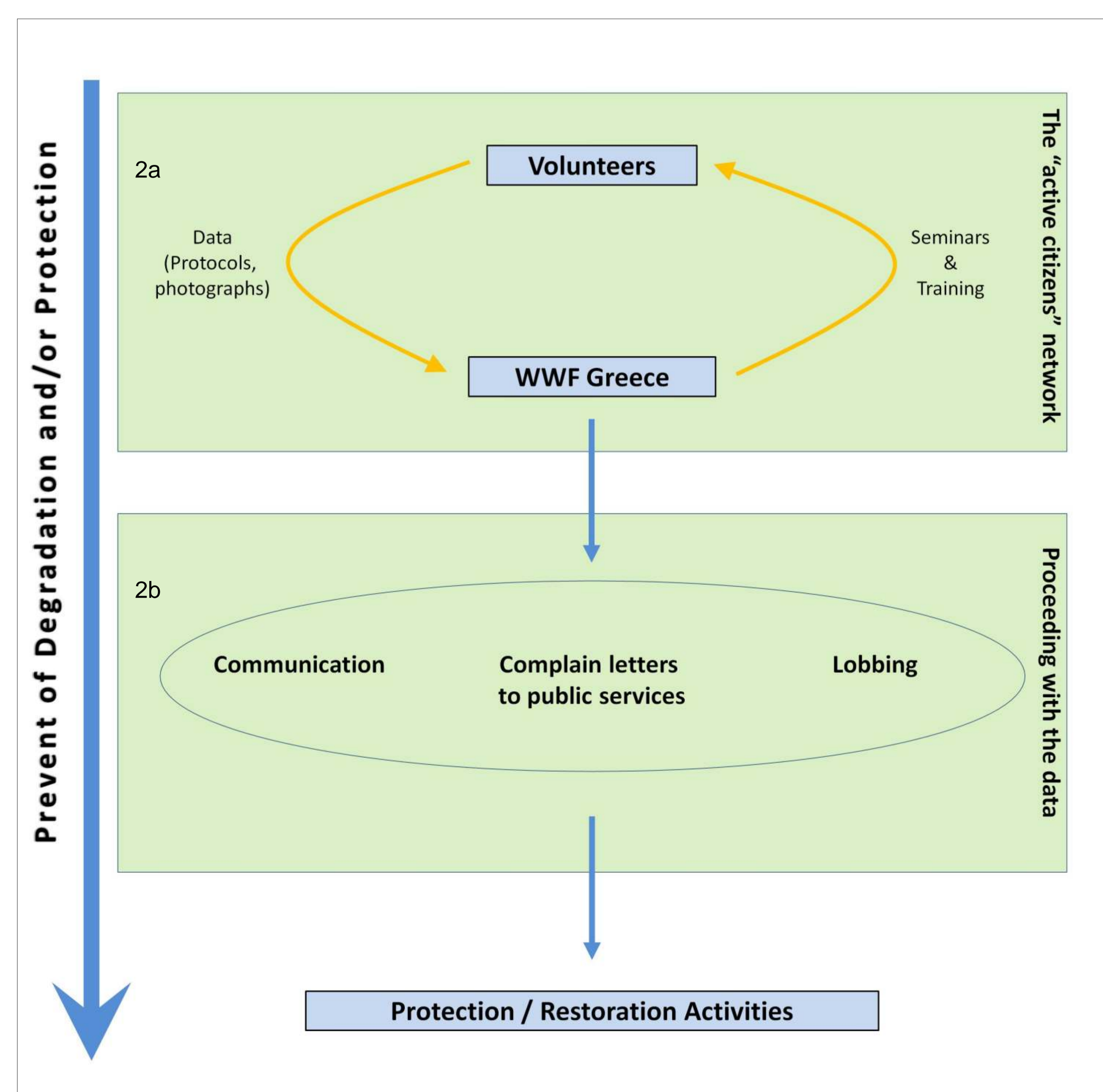


Fig. 2. Bringing the people together to protect the island wetlands. Conceptual model

References:

- Paragamian, K. & Catsadorakis, G. 2007. Inventory of the Aegean islands wetlands: A two-year WWF Greece's project. Proceedings of the 3rd Conference of Hellenic Ecological Society and Hellenic Zoological Society "Ecology and Conservation of Biodiversity", pp 276-283. (In Greek)
- Brik T. (ed) 2003. Developing a citizen water quality monitoring program for the Arroyo Seco. Arroyo Seco Foundation (http://www.arroyoseco.org/Developing_a_Citizen_Water_Quality_Monitoring_Program_for_the_Arroyo_Seco.pdf)
- Monterey Bay Sanctuary. Citizen watershed monitoring network (<http://montereybay.noaa.gov/monitoringnetwork/>)
- <http://www.worldwatermonitoringday.org/index.html>
- <http://www.earthforce.org/GREEN>

Achieving the intermediate goals

The following initiatives have been introduced and implemented in order to **build the volunteers' network** and **raise public awareness** in Crete:

- Presentations** were given to the members of 8 local NGOs (participation of approximately 300 citizens in 30 presentations).
- Seminars** were organized for the volunteer training (155 participants in 4 seminars). Almost 35% of them finally decided to adopt one wetland area. Additionally, the majority of the participants want to receive information and news about the network and the WWF Greece actions.
- Summer volunteer camps** were set up and the participants from all over Greece (45 volunteers in three camps) involved in the conservation actions in three wetland areas and worked with member of the local communities (Fig. 4).
- Activity events** (clearings, sign installation and sign repairing, protesting) took place in 4 wetland sites (approximately 250 volunteers in 4 events (Fig. 5)).
- Articles** on the significance of the island wetlands, their degradation problems and the volunteer network have been published (more than 60 articles). Most of them were posted on the WWF Greece blog and also sent to the local mass media.
- Meetings** with the volunteers included **eight face-to-face workshop** sessions and training days in the field.
- Environmental education** in schools (more than 1200 students) and seminars in Environmental Education Centers to teachers (more than 300).



Fig. 3. The water analysis kit



Fig. 4. Placing a pole during a summer volunteer camp



Fig. 5. Clearings and protesting for the protection



Fig. 6. Restoring a wetland

Results: Achieving the main objective

In total, out of the 109 natural wetland systems of Crete, almost 50% have been "adopted" (51 wetlands) and they are under monitoring by 55 volunteers. The following actions were taken in order to prevent and obstruct the wetlands degradation:

- Complain letters** concerning interventions in 22 "adopted" wetlands, (27 complain letters have been sent to the local authorities).
- Simple restoration activities** (debris collection, installation of entrance obstacles for vehicles) in 2 wetland sites (Alatsolimni salt plain, Moronis estuary) in collaboration with the local authorities (municipalities).
- Conservation activities** (delineation of wetlands and sand dunes with wooden poles, information signs and cleaning) in 2 wetland sites (Malia marsh, Almyros marsh) in collaboration with local NGOs.
- Restoration project** of one wetland site (Moronis estuary) (in progress). Up to now, 10.000m³ of debris (1/3 of the total amount) have been removed and 1 Ha of wetland have been restored (Fig. 6).
- Management plans** were drawn up for the conservation of 2 wetland sites (Moronis estuary, Malia marsh).

Further steps

Evaluating the first year of the volunteer program in Crete, the achievements are quite optimistic. The experience obtained from the early warning system in the 6 islands of the Aegean Archipelagos was very valuable for the establishment of the present network, but further steps should be done:

- In Crete, **organizing workshops** for the public servants and stakeholders and **presentations** to all the municipalities.
- In other Greek islands **re-organize** the early warning system, using the experience gained from the example of Crete.

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