

Good Practice Cases in Sustainable Tourism Destinations

The conservation of coastal dunes with junipers at Chrysi Island, Ierapetra (Greece)

ITEMS		DESCRIPTION	PICTURES
Name of the organization submitting this practice case	Name	Coastal and Marine Union EUCC and the Municipality of Ierapetra	
	Contact	research5@qualitycoast.info ; secretariat@qualitycoast.info ; info@ierapetra.gr	
	Name (in EN) of the destination	Ierapetra	
	Administrative Organizations and country	Ierapetra is municipality located in the southeast of the island of Crete, Greece.	
	Tourism Organizations	Municipal Tourism Committee, Hotel Union of Ierapetra and Southeast Crete	
	Surface	551 km ²	
	Resident population	27,602	
	Tourism Arrivals	117,000	
	Tourism nights	1,200,000	
WHO	Name	The Mediterranean Agronomical Institute of Chania, the National and Kapodistrian University of Athens, the Regional Development Fund of Crete, the Decentralised Administration of Crete, and the Municipality of Ierapetra.	
	Website	http://www.ierapetra.gr http://www.junicoast.gr/	
WHY	The reason for action	<p>Chrysi island lies 8 miles south of Ierapetra and consists of a popular tourism destination, from May to October, famous for its crystal clear blue waters and white sand dunes. Chrysi is almost flat, with an average height of 10m. From a distance it seems like a thin line of land in the middle of the sea. Its greatest length is 5km; it has an average width of 1km and covers almost 5km². The flora of the island is rich and diverse. There are mainly cedars, junipers, lentisc, thyme, heath, rockroses and sandy shore vegetation. The number of plant species of Chrysi is relatively high compared to its size, comprising 1/20 of the Cretan flora. Many species are rare and endemic, therefore protected. Chrysi is protected by the Natura 2000 Programme as an 'area of intense natural beauty', and has been designated as a wildlife refuge. On the island, the only coastal dune with Juniperus spp habitat in Eastern Crete can be found. The habitat covers almost 35 hectares and its density is approximately 28 trees per hectare. Their average height is 3 to 7m tall and their average age is at least 300 years old. The junipers have a root system that spreads across an area</p>	

		<p>which is more than double the height of the tree. Apart from the big roots, a huge amount of tiny roots forms a complex web that keeps the sand in place. However, the habitat is greatly affected by the tourism impacts. Visitors (mainly mass tourism day trippers) among other things, cause habitat degradation through trampling and camping, pose a fire risk, and litter. The damage to the habitat and in particular to the Juniperus species is evident as visitors, due to lack of awareness, often consider the dry looking branches of the trees as dead, thus, cutting wood for fires or unintentionally damaging the root systems. Due to the slow regeneration and growth rate of these species, the damage can be significant. Lack of awareness exists also amongst stakeholders responsible for the management and activities taking place at the site, for example tour operators and local authority officials.</p>	
	<p>Issues and challenge</p>	<p>The major issue for Chrysi island is that it belongs to the Natura 2000 network as a protected area while at the same time it is a mass tourism destination. Consequently, the main challenge of the project was to implement conservation interventions and impose human activity restrictions in a place visited by thousands of visitors every year. Restrictions to the activities permitted to the island have been long debated but many residents and local businessmen have been strongly against them. The big argument to resist and reject any restriction has been for years a tradition of free movement and camping on the island but the main reason is the high profits generated from the thousands of visitors.</p>	
<p>HOW</p>		<p>The project aimed to deal with the threats through a range of concrete measures and actions. Conservation actions based on the investigation of the juniper population composition and structure were undertaken in order to deal with the problem of restricted natural regeneration of the species. The project also aimed to raise awareness through a range of activities, built within a multi-stakeholder communication strategy and active stakeholder consultation and engagement from the onset of the project. Regarding the problems caused by the visitors' behaviour, actions were undertaken which incorporated raising awareness and limiting visitor spatial distribution away from the habitat. Visitor management infrastructures like boardwalks constructed and information signs installed. Infrastructure also provided to limit visitor impacts, for example pollution from littering, through the provision of rubbish bins etc in order to ensure that the site will be kept clean. Moreover, camping as well as the lighting of fires on the island were prohibited. All these actions were based on the result of the visitor impact assessment which was undertaken on the site.</p>	 
<p>RESULTS</p>	<p>Benefits</p>	<p>The wide variety of conservation measures of this programme has generated substantial environmental benefits in the area. The results include the improved conservation status of the habitat and halting of threats through a series of actions. These actions resulted in: a) a mapped, demarcated, cleaned and protected from</p>	

		<p>fire risks habitat, b) the enhanced regeneration of the Juniperus species in the habitat, c) the conservation of Juniperus and habitat keystone species, d) the primary/front dune zone restoration of the habitat, and e) the minimization of threats and negative impacts on the habitat.</p>	
<p>REFLECTION</p>	<p>Recognition and Awards</p>	<p>QualityCoast Gold Award 2012-'13</p>	
	<p>Multiplier effect and transferability</p>	<p>Other conservation projects have been implemented in other sites of the island of Crete such as the habitats of Gavdos, Kedrodasos and Falassarna. These particular sites in Crete have been selected due to their high ecological significance, the serious threats that demand immediate response, and their geographical distribution that allows preservation of high proportion of this habitat type (ecological coherence) by using rational financial means. Additionally, the sites in Crete are suitable for the demonstration purposes of this project as they are representative of the full range of habitat contextual characteristics and threats of all habitat localities in Greece. Therefore, this project through its national multi-stakeholder communication strategy aimed to promote similar concrete conservation actions in the South Aegean (Milos, Polyagios, Naxos and Rhodes), disseminate the lessons learnt, promote and provide training of the trialled techniques and methods nationally, as well as raise public awareness ensuring the wider conservation of this priority habitat throughout Greece. A detailed communication strategy has been developed which contains various actions and aims at the long term sustainability of the project outcomes even after its completion. Additionally, the long term sustainability of the project is ensured through the creation of European, national and local networks.</p>	
	<p>Lessons learned and critical success factors</p>	<p>More measures are necessary in order to ensure the sustainability of the concrete conservation actions, related to management infrastructures, visitors' management and habitat restoration. In order to ensure and evaluate the results of the conservation actions in a long-term period, a dedication of resources and a manpower employment are required. A major problem is the maintenance of the infrastructures both in terms of cost and labour. Municipality of Ierapetra could take this cost. Alternatively, volunteer work groups could be organised annually at the end of Spring. Another issue is that some visitors continue to encamp at the island despite the prohibition. For this reason, inspections by the authorities should be stricter and more frequent. Towards that direction, the information – education of visitors could be helpful. The frequent rubbish collection is another critical issue which in the case of Chrysi is quite problematic due to the distance between the island and Ierapetra. Finally, a major issue is the control of the number of visitors. So far there is no restriction in the number of visitors based on island's carrying capacity and thousands of tourists visit Chrysi every summer. This number is expected to increase significantly in the next period after the agreement of the</p>	

Municipality of Ierapetra with cruise operators for the approach of cruise ships on the island. All the above factors are critical for the success and long-term sustainability of the project.

*Pictures courtesy of the the Junicoast Programme (<http://www.junicoast.gr>) and the Municipality of Ierapetra.