LIFE - Nature Project LIFE12 NAT/GR/000688

CYCLADES Life: Integrated monk seal conservation of Northern Cyclades

Technical Guidelines for the organization of an effective Surveillance System in the area NATURA 2000 GR4220033 (NISOS GYAROS KAI THALASSIA ZONI)

Contents

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1. INTRODUCTION

The present technical essay was drafted by MOm, in the context of the implementation of action C4 (Design, set-up and pilot operation of a demonstrative and model surveillance system for the NATURA 2000 site: NISOS GYAROS KAI THALASSIA ZONI GR4220033) of the program LIFE12NAT/GR/000688 (CYCLADES: "Integrated monk seal conservation in Northern Cyclades") with the aim to organize an effective surveillance system and to apply management measures for the particular area.

MOm is an organization with a long standing experience on issues regarding the surveillance of Marine Protected Areas. It organized and successfully operated, in close cooperation with competent authorities, a surveillance and recording system of human activities in the area of the National Marine Park of Alonissos, Northern Sporades (NMPANS) for over a decade. The operation of said system led to the detection of illegal activities, the enforcement of administrative and criminal penalties (unique in quantity for Greek standards) and finally to the reduction of illegal fishing activity events in the area. It is noted that the NMPANS is a particularly vast protected area (total area of 2200 km^2), in fact it is the second largest in Europe. Thus, the experience gained from its surveillance is extremely important and it is for this reason that the contribution of MOm as a consultant in the organization of the surveillance system for Gyaros was planned for in the CYLADES Life program. It is worth noting that to this day MOm continues to assist the NMPANS Management Body and the Alonissos island Port Authorities in matters of surveillance, providing technical support funded by THALASSA Foundation, as well as the Northern Karpathos-Saria Management Body by providing a suitable vessel. Despite the original design which anticipated that in the context of the program (Action C4), a complete, pioneering surveillance system of the newly-founded protected area of Gyaros should be established, that was not feasible. Specifically, up until the drafting of this essay (March 2018), the following basic omissions and technical deficiencies are identified:

- The technical part of the systems remains deficient as, compared to the originally four-part surveillance system including Vessel-RADAR-Camera-UAS, only the first two have been put into operation.
- To-date the operation of RADAR has not been evaluated, or at least any results of an evaluation of its use have not been published.
- The whole system was neither complete at the originally anticipated time (July 2014) nor at the end of the extension of the program (March 2018). As a result there was no opportunity to test its complete operation or to evaluate its effectiveness.
- As a result of the aforementioned points, it was never feasible to draft a Surveillance System Operation Manual nor was the opportunity given for the complete system, its

operation and the Operation Manual to be presented and discussed during the Co-Management Committee, as described by the original planning of the program.

- Therefore, this technical report attempts to alleviate the above significant deficiencies and to provide basic directions and useful technical information to the newly-established Cyclades Protected Areas Management Body (CPAMB), which, according to recent legislation (Law 419 of 20/2/2018) now has full responsibility for the management of the protected area of Gyaros as well as the task of assisting the competent administrative and judicial authorities in controlling the enforcement of environmental legislation (article 4, par. IE). According to all of the above, the CPAMB will have to promptly organize an effective surveillance system aiming to more efficiently manage and protect the important habitats and species of the area.

2. THE AREA OF GYAROS

A) General characteristics of the area

The NATURA 2000 area GR4220033 (NISOS GYAROS KAI THALASSIA ZONI) includes the island of Gyaros, the islets Foui and Glaronisi and the surrounding marine area up to 3 nautical miles from their coasts. The area is rather small at 280 km^2 (1/8 of the size of the NMPANS). Its distance from the nearest inhabited island, Syros, is 4 nautical miles (from the end of the NATURA 2000 zone up to the closest coast of Syros) and 7 nautical miles coast-to-coast. Its distance from the nearby islands of Andros and Kea (coast-to-coast) is 9 nm and 11.5 nm respectively. Keeping the distances to inhabited islands in mind, the area cannot be characterized as particularly remote. However, its worth noting that as the area is situated directly to the south of the Kafireas Strait (Cavo Doro) and within the main flow of the Northern winds prevailing in the Aegean, access for small vessels during a big percentage of days of the year will be tough. (Figure 1)

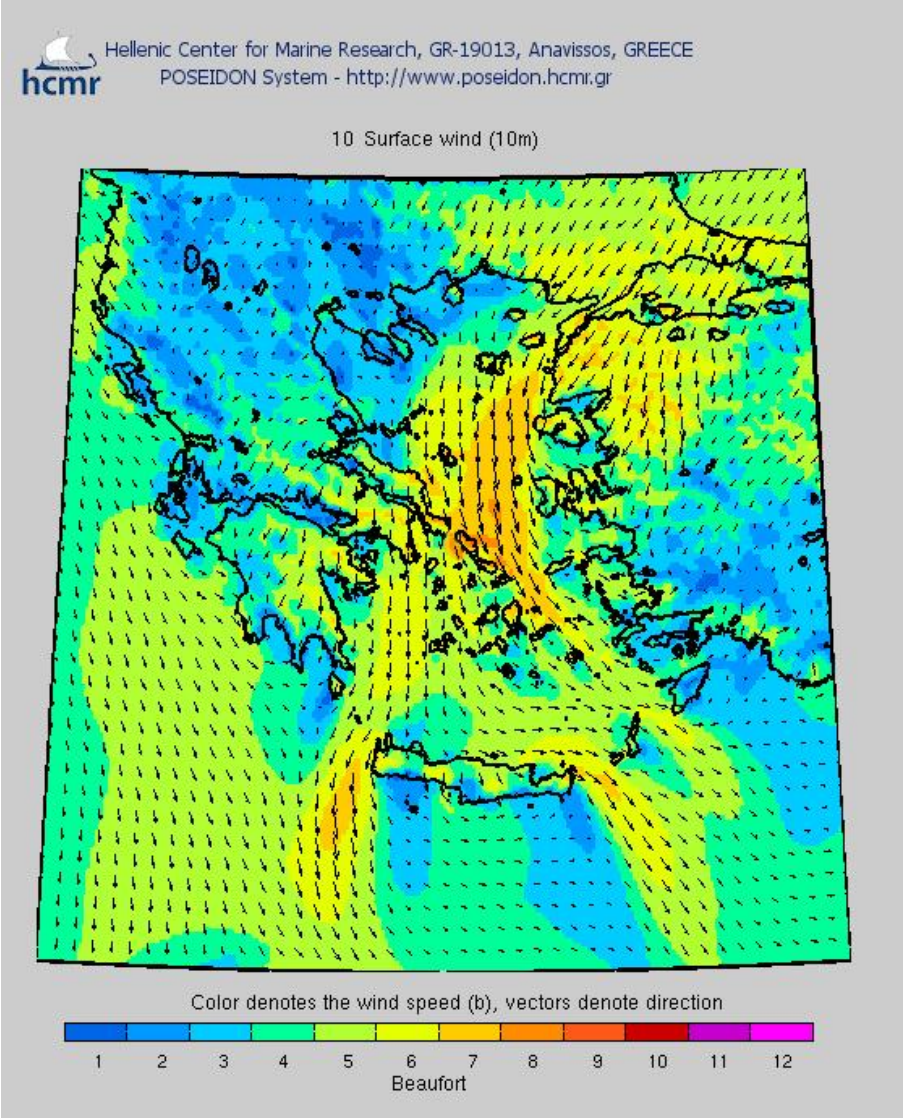

Figure 1. Wind map showing the characteristic northern flow in the area of the Northern

B) Legal Framework regarding the protection of the natural environment in the area.

- According to Law 3937/2011 "Biodiversity Conservation and other provisions" (FLG A 60 31.3.2011) the area GR4220033: NISOS GYAROS KAI THALASSIA ZONI was included in the national catalogue of areas of the Natura 2000 network of article 9 par. 6 (c/n 366) as a suggested Site of Community Importance – Special Protection Area (SCI-SPA) and was designated as a habitat and species protection area of article 19 par. 4 of l. 1650/85, as was replaced by article 5 of l. 3937/2011. More specifically, according to CMD 50743/2017 the area is now designated as a SCI-SPA.

- In 2013, in cooperation with the competent bodies, the older Port Rules and Regulations of Syros were amended and the pre-existing fishing prohibition limits were defined to 3 nm from the coast of Gyaros in order for them to coincide with those of the NATURA 2000 area resulting from (2) of the preamble: FLG 3251/Β΄/20-12-2013: «Approval of the Port Rules and Regulations of Syros nr. 32 *"replacement with 28-08-1978 Port Rules and Regulations of Syros (FLG 39/Β΄/1979)"*.
- In 2015, a permanent Marine Wildlife Refuge was established (article 19 par. 4.3 of l. 1650/1986 as amended by article 5 of l. 3937/2011) in the marine zone surrounding Gyaros within 3 nm of its coasts for the conservation of the Mediterranean Monk Seal, the Yelkouan Shearwater, Posidonia oceanica meadows, reefs and fish stocks of the area (FLG 463/Δ΄31-12-2015: "Establishment of a Marine Wildlife Refuge in the marine zone surrounding the island of Gyaros, Municipal Union of Syros").
- Finally, in February 2018, Law 4519 was approved by the Greek Parliament, according to which a legal person was established under the firm Cyclades Protected Areas Management Body, under whose authority the management of the area of Gyaros was designated.

C) Illegal activities in the area

Even though fishing in the marine area surrounding the coasts of Gyaros has been prohibited for decades, illegal fishing activities have been historically common. Thus, during the program CYCLADES-Life, a large number of illegal fishing incidents were recorded in the area. This is reflected in the state of fish stocks of the area as, the study conducted during the program did not show significant differences compared to other areas with no fishing restrictions and which are closer to inhabited areas or fishing ports.

The fishing activities recorded were mainly:

- Amateur spear-fishing.
- Amateur dropline fishing.
- Amateur fishing with various illegal methods (stationary nets, night spear-fishing).
- Coastal professional fishing with stationary nets and longlines.
- Coastal professional fishing with towed equipment (Beach Seine).
- Mid-Scale fishing with circular/surrounding nets (Purse Seine).

Figure 2. Illegal fishing with towed equipment (beach seine) over Posidonia meadows in the southern part of the island.

Figure 3. Illegal spear fishing in the northern part of the island.

Figure 4. Illegal placement of stationary nets from a coastal professional fishing vessel in the north-western part of the island.

Figure 5. Illegal professional longline fishing opposite the prison complex.

Figure 6. Illegal fishing with a purse seine (as recorded by an automated camera installed by MOm)

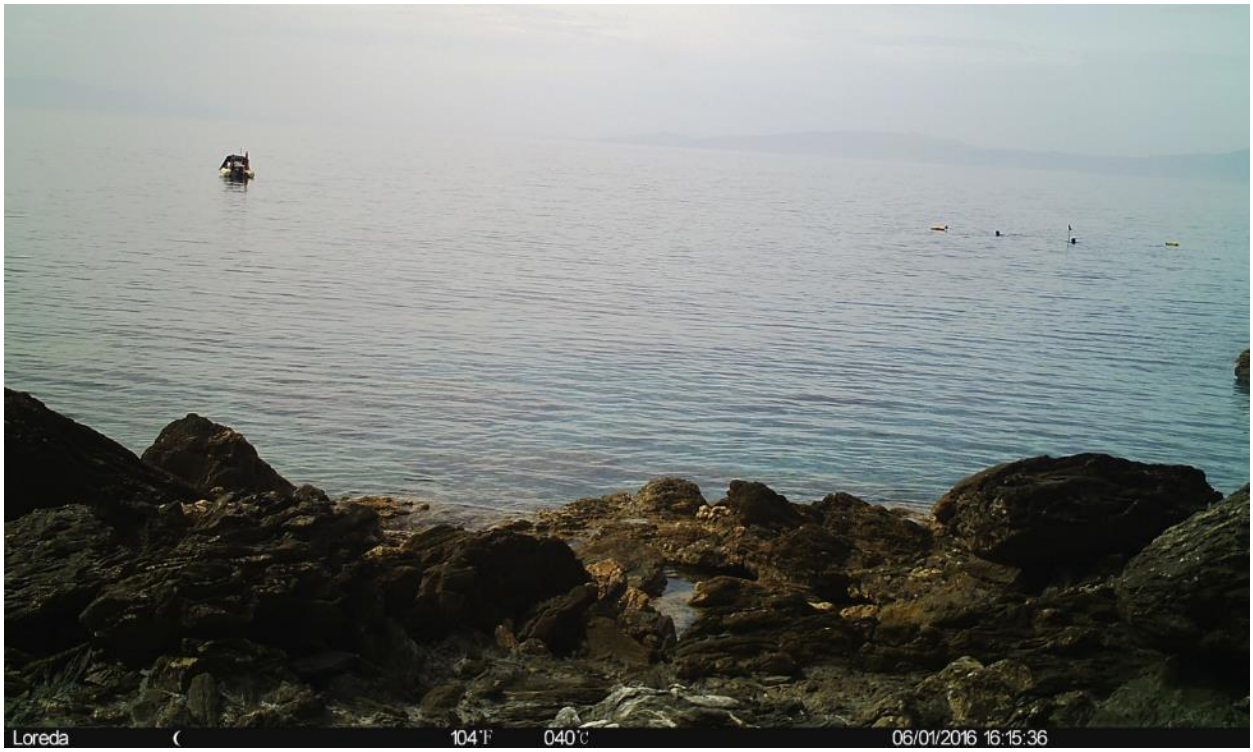

Figure 7. Illegal spear fishing (as recorded by an automated camera installed by MOm).

It is worth noting that apart from illegal activities related to fishing, in Gyaros activities related to poaching wild goats have been recorded.

WHY IS A RELIABLE SURVEILLANCE SYSTEM REQUIRED

It is known that for the effective application of management measures in a Marine Protected Area, the organization of a reliable surveillance system is necessary. When this is not the case, any management measures will remain inconsequential both for the natural environment as well as the users of the area. Often, the designation of an area as important and protected without the necessary surveillance and management will in fact have the opposite effect as it seems to attract illegal and unregulated fishing practices, as those who decide to fish there know that what they are doing is illegal anyway. As a result, the inadequate surveillance of an area seems to benefit serial transgressors and to be unfair to those who either conscientiously or for other reasons, do not break the law or will not risk breaking the law.
Finally, in the absence of a reliable surveillance system, it is impossible to draw reliable conclusions regarding the effectiveness of the designed management measures as they are not actually enforced or are inadequately enforced.
For a surveillance system to be reliable it must:

- Inspire trust in the users of the area regarding its effectiveness.
- Inspire trust in the users of the area regarding its impartiality.
- Have an organized and known penalty system.
- Be continuous and not inconsistent with periods of inactivity.
- Have penalties which are not only known to citizens but which are also harsh enough to act dissuasively and not give the impression that they are lenient towards transgressors.

3. BASIC TECHNICAL CHARACTERISTICS OF AN EFFECTIVE SURVEILLANCE SYSTEM OF A MARINE PROTECTED AREA (MPA)

International experience, as well as the important knowledge and experience gained from the surveillance of the National Marine Park of Alonissos, Northern Sporades, have shown that the cornerstone of an effective surveillance system of a MPA is first and foremost human resources (the existence of suitable personnel) in combination with a suitable vessel/s (boat or boats in the case of a large marine protected area). Every other tool available today (radar, cameras, AIS, VMS, UAS, hydrophones etc) are complementary to any surveillance system that can significantly lighten the workload of personnel (for example by avoiding unnecessary patrols),

making their presence more efficient, concurrently reducing operational costs (reduction in patrols, more efficient fuel use). By further increasing personnel expertise and equipment specificity the following are noted:

A) Personnel: Guarding personnel should: a) have extensive experience working at sea so that they can operate safely during the day and at night, even under strenuous weather conditions, b) have extensive knowledge of the area, c) have general knowledge on the protection targets and very good knowledge of protective measures and their objectives, d) have very good knowledge of fishing methods that can be employed in the area (both legal and illegal), e) have good communication skills, since, other than their strictly "policing" duties, they should also be communicating with visitors to the area, informing them on issues regarding the operation of the MPA. The coordination of the surveillance team should be undertaken by a member who has a long-standing experience and deep knowledge on all the aforementioned sectors.

B) The selection of a suitable vessel for the surveillance of a MPA is particularly important as far as the safety, comfort and the productive operational potential of the personnel are concerned. Since personnel are called upon to operate under highly variable conditions (winter-summer, day-night, cold-rain-wind-severe waves) and since they are required to remain in the area for a long time (see patrol scheme below), the vessel should be close-topped and to include basic equipment for the comfortable stay of at least 2 people (cabin, toilet etc). In addition, for greater safety and a wider operational potential, the vessel is preferred to fulfill Category B European specifications (Category B-Offshore: includes vessels that are certified to operate in open sea in conditions of up to 8 Bf). The vessel should have the ability to achieve operational speeds of over 16 knots. Other than the correct selection of the vessel, it should also have the right equipment. Other than legally mandatory equipment the vessel should also include: GPS-plotted-Depth Meter, Radar, Thermal camera (for observation/recordings at night) and a 3G/4G real time data transmission system connected to the seat of the Management Body or/and to Syros Port Authority. A particularly useful, if deceptively simplistic, piece of equipment is a loudspeaker which can prove extremely practical in the communication with the crews of other vessels especially in cases where there can be no VHF communication and conditions do not allow a close approach of the vessels (bad sea condition). Finally, a continuous position and movement tracking device for the vessel (e.g. system openichnos: https://openichnos.com/) is important both for safety reasons and for the recording of statistical data regarding the surveillance effort.

This particular system provides this possibility without the vessel being "publicly visible" as would be the case with the AIS system (something that is naturally not desired in a guarding vessel).

4. USE OF PRE-EXISTING EQUIPMENT AND PERSONNEL

The profile of the surveillance team members and the specifications of a suitable vessel for guarding have been described in general terms. The aforementioned specifications should be taken into account when organizing the newly-established Management Body, aiming for maximum results. However, at this moment in time, a vessel bought for the program Cyclades-LIFE (inflatable). The main disadvantage of this vessel is that it does not include the necessary spaces to allow guarding personnel to remain in the area for a long time or under harsh weather conditions, or to allow personnel to overnight on it (no enclosed living spaces, no toilet). Despite this, and until the acquisition of an appropriate vessel by the MB, this vessel can be used. In addition, field personnel hired for the Cyclades-LIFE program and who have gained valuable experience operating in the area through various actions, could potentially and following all legal procedures, staff the MB in addition to new suitable personnel that will be selected. It is worth noting at this point that in another LIFE-Nature program completed by MOm in northern Karpathos, suitable equipment was acquired and personnel were trained. Upon the establishment of the areas Management Body, the equipment was granted to the MB (fully equipped boat) while the guarding personnel smoothly transitioned to the MB following regular recruiting procedures thus allowing it to start operating and to continue its actions to date.

Furthermore, since the CPAMBs jurisdiction extends beyond the area of Gyaros and includes all the NATURA areas in the Cyclades, there is also the possibility of using the boat “KALIPSO”, acquired by the Municipality of Andros for the program LIFE-ANDROSSPA, for guarding (and other management actions). “KALIPSO” is a perfectly equipped vessel and following an agreement of the Management Body with the Municipality of Andros and upon securing the necessary resources, it could take on part of the patrols covering Gyaros in combination with the surveillance of the marine NATURA areas of Andros and Tinos. Finally, the vessels available to Syros Port Authority should be utilized in the creation of an integrated annual patrol scheme.

Figure 8. The guarding vessel acquired and equipped by MOm through the LIFE program and granted to the Karpathos Saria Management Body.

5. PATROL SCHEME

It is obvious that for an effective surveillance of the area, a patrol scheme aiming for its 24 hours coverage should be devised. This means that, to the extent that it is possible, the guarding personnel on duty should be able to respond on a 24 hour basis and should aim for maximum coverage of the area either through direct presence or indirectly through the use of the additional electronic means (see below). The long-standing experience achieved though the surveillance program of the NMPANS has revealed that illegal fishing activities can occur throughout the day and in many cases during the night time and early in the morning. In order to achieve 24 hour coverage, at least four guards working in alternating shifts are required. In case the vessel "KALIPSO" is also utilized, the guards seated in Syros could be reduced with the mind-set that the totality of personnel of the newly-established Management Body will be appropriately distributed to cover the management needs of the wider area (e.g. Andros-Gyaros-Syros-Tinos). Patrols should be organized in such a way that they a) don't have a predictable periodicity b) cover a significant timeframe of remaining in the area, including overnight stays.

This is particularly important during the initial operation period until it is imprinted on users of the area that there is an almost continuous presence and intervention capacity of the surveillance system. Once this is achieved, and in combination with the application of harsh penalties for identified transgressors, the drastic reduction of illegal incidents in the area is expected. (as proven in the NMPANS area). Finally, the use of additional technical means and more specifically the use of a camera network (see below) appropriately installed along the coastline of Gyaros is expected to decisively contribute to the complete surveillance of the area and to reduce the need for patrols, thus making the personnel available to deal with other sectors/areas under the jurisdiction of the CPAMB.

6. USE OF ADDITIONAL TECHNICAL MEANS

A) RADAR System

During the program Cyclades-LIFE, the installation of a RADAR system on the peak of Gyaros was planned, aiming to contribute to the surveillance of the area. The installation of this RADAR system was completed in September 2015. It is noted that, to date, no evaluation of the contribution of the RADAR system has been published by WWF-Hellas, who was responsible for its operation, in order to have a clear cost-benefit analysis of the particular system. However the following can be noted:

The RADAR can show vessels as targets but is unable on its own to provide any information about their characteristics, their identity (especially when said vessel has no operational identification devices) or the activity it is undertaking. Thus the RADAR system can provide information on the presence of vessels in the area and their movements.

The installation of the system in a high altitude, almost 500 meters above sea level, potentially affects its sensitivity regarding the detection of small vessels (e.g. inflatable boats) especially when they are close to the island while certain areas around the island are rendered “invisible” by the “shadow” of landmasses anyway.

Radar systems continuously require changes in settings since their operation can be affected by many factors such as weather conditions, wave/swell height and atmospheric conditions. The particular system therefore requires multiple field tests including test detections of vessels of varying types, sizes, construction materials and under various conditions so that its real capabilities can be evaluated. In addition, any potential delay (latency) in data transmission of the system needs to be taken into account.

The system, despite being new, seems to present frequent malfunctions as, from the monthly reports of the program it is obvious that during at least 8 monthly periods (of the total 28 months of operation) there were significant technical problems making it necessary in many cases to dispatch a crew to repair the damage on the spot. It is therefore necessary to evaluate the causes of the malfunctions as well as the overall performance of the system in detail in order to make informed decisions on potential conversions/improvements required and to decide whether the use of the system will be advantageous in the long-term as its annual maintenance costs may prove overly high.

In any case, as explained above, RADAR cannot provide, on its own, the necessary information for the surveillance personnel to know for certain whether is an illegal activity taking place or not. RADAR can prove highly valuable in areas such as the core of the Marine Park of Alonissos, Northern Sporades, where the approach by any vessel is prohibited and therefore any identified target is illegal and will immediately mobilize the guarding team. In the area of Gyaros however, approaching the island is legal and there are plans in the future to allow fishing using specific methods. It is therefore obvious that the RADAR system needs to be supplemented with a camera network system featuring multiple cameras as suggested by MOm.

Keeping the data published by WWF-Hellas regarding the guarding action in the Progress Report of the program, it is clear that a year after the installation of the system in October 2015, the incidents of illegal fishing have shown no decrease in frequency, the opposite in fact seems to be the case for certain periods (e.g. autumn, when the strong summer winds drop in intensity and fishing conditions improve): 2 illegal incidents during the months October-November-December 2015 (46.4 patrol hours), against 6 illegal incidents during the months October-November 2016 (59 patrol hours).

B) Surveillance Camera

The original planning for the program Cyclades-LIFE included the installation of a remotely controlled high definition camera to allow for the detailed identification of targets located by the RADAR and the activity they are undertaking around the island. To date this camera has not been installed or set in operation. As a result, there was no opportunity until the end of the extension period of the program to test and evaluate its practical use. Despite this, keeping in mind experience on the matter it is foreseen that:

- The operation of the camera is expected to contribute to the identification of the type of vessel and its activity in the area from a distance (something not possible solely through the use of RADAR),

- Installation of the camera can constitute a further preventative measure for the occurrence of illegal activities in the area

On the other hand it is clear that:

- It is technically unfeasible for a single camera to cover the whole area, especially parts of the area close to the coast,
- For the documentation of any transgressions (in the majority of cases), the direct presence of the surveillance personnel will be necessary.

It is necessary in the case of the camera also, for it to be systematically and methodically tested in order to evaluate its technical capabilities in practice and o document the extent to which it can support the surveillance of this specific marine area but also other similar areas. Keeping in mind that the camera was planned to be installed in the same position as the RADAR, it is clear that big parts of the coastline and a zone of a few hundred meters from the coast to the seam (the zone where fishing using coastal fishing tools and spear fishing occur) will covered by the camera as there is no line of sight.

Figure 9. Panoramic area of the southwestern coasts of Gyaros which is not covered by the RADAR and the central camera.

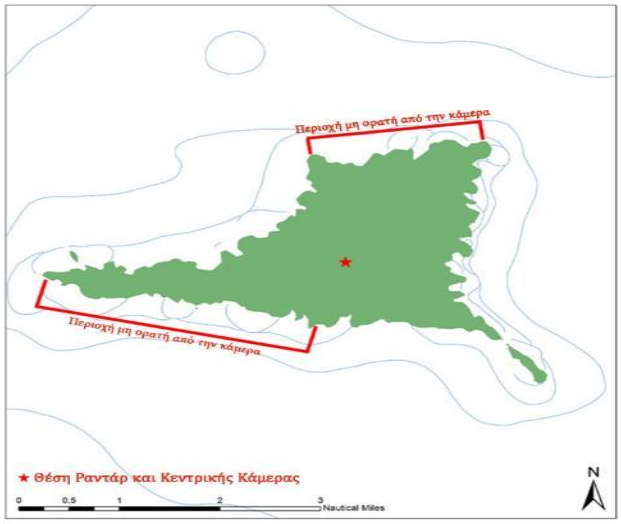

Figure 10. Areas not in the line-of-sight of the RADAR and camera.

C) Use of Unmanned Aerial System

During the program Cyclades-LIFE, the acquisition of an Unmanned Aerial System (UAS) was planned. A plethora of uses for such systems can be found in many fields such as the surveillance of facilities or areas of interest. In the case of Gyaros, the use of such a system would mainly play a test/pilot role as the area is relatively small and it is situated relatively close to potential launch bases for the surveillance vehicles. To date the acquisition and pilot application of such a system for the area has not occurred. Following a short market research conducted by an expert on such matters member of MOm, it was found that there are commercially available systems that fit with the conditions of the area and can serve the need of their surveillance. Indicatively one such system is the GEOSCAN 201 Video (Figure 12).

Figure 11. Indicative **course of a complete patrol of the UAS**. As seen by the noted distances, one such patrol is clearly well within the capabilities of a system such as the GEOSCAN 201 Video.

This specific electric rigid wing UAV is capable of 3 hour flight duration, maximum range of 210km and can transmit real-time images to the base of operations from a distance of up to 40km. In addition, this UAV can take off assisted by a catapult and can land with the help of a parachute, eliminating the need for a flat take-off and landing runway.

Considering the geographic characteristics of the area, it is clear that this particular system could serve its surveillance needs based on its capabilities. This system is imported to Greece

and includes a one year or 80 flight warranty. The cost of the basic Το κόστος της βασικής version of the system is around 40.000€. Other than technical issues, other important issues that will have to be tackled for the use of such a system are those related to recent changes in national legislation which regulates operator licenses for UAVs, UAV flight as well as general safety issues of UAV flights. It is clear that the use of such a system for the Cyclades-LIFE program be a pilot/test application to see how such a system could be used to reduce illegal activity. Despite all this, and considering the technological possibilities available today, we believe that the most practical means for the remote surveillance of the area is the use of a 3G/4G technology camera network.

Εικόνα 12. Unmanned Aerial Vehicle System Geoscan 201 Video

D) 3G/4G Cameras.

3G/4G camera systems are the evolution of network camera surveillance systems (wired or wireless) and seem to provide an exceptional solution for the surveillance/monitoring of remote areas where there is a mobile network available. They consist of one or multiple autonomous camera systems which are directly connected to the mobile network through which they transmit video data. The cameras that could potentially be used are day cameras, infrared or thermal for coverage during both the day and the night. MOm is already designing the test operation of such a network of cameras for the facilitation of the surveillance of the Core of the National Marine Park of Alonissos, Northern Sporades with funding by THALASSA foundation in cooperation with the Management Body, Port Authority and the Municipality of Alonissos. Respectively, Gyaros could be adequately covered with one such network of 6-7 autonomous systems appropriately distributed along its coastline, as the mobile coverage of the area is sufficient. In this way, problems arising from not being able to cover the whole area with a single camera at the peak of the island are eliminated.

Figure 13. A complete autonomous 3G camera system.

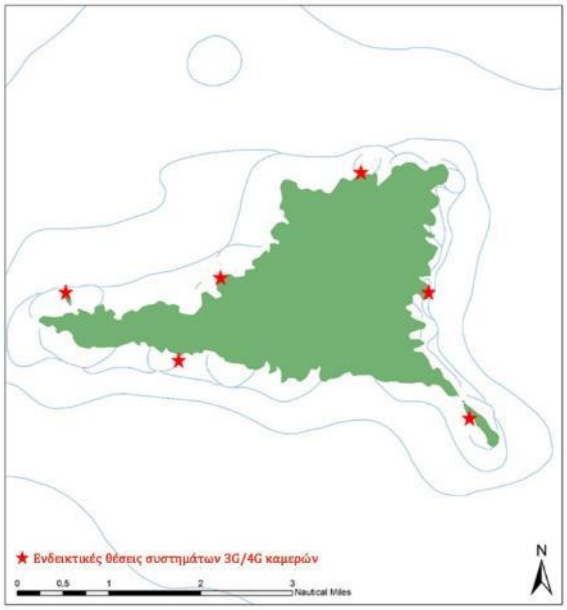

Figure 14. Indicative 3G/4G camera positions for the creation of a full coverage network of the area.

7. LEGAL ISSUES, JURISDICTION ISSUES, PENALTIES FOR TRANSGRESSORS

As previously mentioned, the newly-established Cyclades Protected Areas Management Body now has the complete responsibility for the management of the protected area of Gyaros as well as the task of assisting the competent administrative and legal authorities in controlling the proper application of environmental legislation. However, even with recent Law, the Greek state did not fully assign jurisdictions required for surveillance to Management Bodies (a standing request by MOm and other environmental organizations over the past years). A solution to this is the participation of personnel of the Coast Guard in patrols whenever possible and also the sworn statements of members of MBs regarding illegal incidents in order for Port Authorities to proceed with necessary procedures (enforcement of administrative penalty, criminal prosecution). The aforementioned solutions worked with great effectiveness in the area of the NMPANS resulting in penalties being enforced and a drastic decrease in illegal activity. A practical drawback of the procedure of sworn statements is that the guards are called upon to be present as witnesses in any relative court which in the case of Alonissos means that they had to travel to Volos (First instance) or to Larisa (following an appeal) something with a significant “price” both in work-days as well as transportation costs. In the case of Gyaros this is not an issue as the seat of the competent legal authorities is the same as the seat of the MB in Ermoupoli of Syros.

An addition issue that needs to be addressed immediately in the near future is that, if fishing is indeed legalized the area for certain fishing tools, the guards would not be able to check the vessels regarding whether they have the correct equipment on board. The only way to tackle this issue would be either to change their jurisdiction by amending the law (something that we are still suggesting) or to have a staff member of the Coast Guard on board the guard vessel (at least in a significant number of patrols).

As far as monetary penalties enforced to transgressors are concerned, it needs to be noted that based on previous experience it is clear that:

An important rule is that for each transgressor there can be no more than one warning. Thus, after a transgressor has been informed about the protection regime of the area once, the next time they are found to break the law, penalties should certainly be enforced. After a reasonable amount of time (one or two years) and as the reforms have become well known to users of the area, penalties can be enforced immediately following the first time someone is found to act illegally.

There needs to be a specific, approved by the Board of Directors of the MB and publicly known fining system in order to avoid transgressors who have committed a similar offence to pay significantly different fines. It is also suggested that the fining system become common in all the MPAs of the country after conciliation by all competent MBs.

Finally, fines should be adequately heavy in order to act preventatively and not to encourage risking committing an illegal fishing activity for the potential of a good catch in the area.

The agreed-upon by the BD and published fines enforced in the areas of the National Marine Park of Alonissos, Northern Sporades for each type of transgression are shown in Table 1 below.

CATALOGUE OF FINES UPON TRANSGRESSION IN THE NMPANS AREA

PIPERI ISLAND CORE OF THE NMPANS				
AMATEUR FISHING		**LEISURE BOATS**	**COASTAL FISHING**	**MID-SCALE**
ENTRANCE/ANCHORING (passing within 1nm from the coast is also defined as entering)	**2000,00**	**1000,00**	**2000,00**	**10.000,00**
PASSING (passing within 1nm-3nm)	**150,00*** *proportionally reduced between the 2nd and 3rd nm	**150,00*** * proportionally reduced between the 2nd and 3rd nm	**150,00*** * proportionally reduced between the 2nd and 3rd nm	**300,00*** * proportionally reduced between the 2nd and 3rd nm
FISHING	**5.000,00**	**5.000,00**	**5.000,00**	**10.000,00**

A΄ ZONE OF THE NMPANS (MINUS CORE)		
AMATEUR FISHING	**COASTAL FISHING**	**MID-SCALE**
SPEAR FISHING, AT NIGHT, WITH SCUBA GEAR, COMPRESSOR : **5.000,00**	MARKING OF FISHING TOOLS INFRINGEMENTS: **300,00**	PURSE SEINE TRANSGRESSIONS DAY/NIGHT:**5.000,00**
SPEAR FISHING DURING THE DAY : **2.000,00**	NET FISHING TRANSGRESSIONS (DIMENSIONS/2DAYS): **1.000,00*** *does not apply for the two days in case of bad sea conditions and if the Port Authority has been alerted in a timely fashion	TRAWLING TRANSGRESSIONS: **5.000,00**
LONGLINE FISHING: **500,00**	FISH TRAPS: **2.000,00**	
NET FISHING: **1.000,00**	TRANSGRESSIONS ACCORDING TO TIME: **150,00***	
TROLLING/DROPLINING: **200,00**		
DROPLINING AT NIGHT WITH A LIGHT SOURCE: **500,00**	* proportionally reduced, according to time the limit was exceeded	

A΄ ZONE OF THE NMPANS		
AMATEUR FISHING	**COASTAL FISHING**	**MID-SCALE**
SPEAR FISHING AT NIGHT, WITH SCUBA GEAR, COMPRESSOR: **5.000,00**	ΠΑΡΑΒΑΣΕΙΣ ΣΗΜΑΝΣΗΣ ΑΛΙΕΥΤΙΚΩΝ ΕΡΓΑΛΕΙΩΝ: **300,00**	ΠΑΡΑΒΑΣΕΙΣ ΓΡΙ-ΓΡΙ ΗΜΕΡΑΣ/ΝΥΚΤΑΣ: **5.000,00**
OTHER TRANSGRESSIONS ACCORDING TO NATIONAL LEGISLATURE	ΠΑΡΑΒΑΣΕΙΣ ΑΛΙΕΙΑΣ ΜΕ ΔΙΧΤΥΑ (ΔΙΑΣΤΑΣΕΙΣ/2DAYS): **1.000,00*** * does not apply for the two days in case of bad sea conditions and if the Port Authority has been alerted in a timely fashion	ΠΑΡΑΒΑΣΕΙΣ ΜΗΧΑΝΟΤΡΑΤΩΝ: **5.000,00**
	OTHER TRANSGRESSIONS ACCORDING TO NATIONAL LEGISLATURE	OTHER T/GRESSIONS ACCORDING TO NATIONAL LEGISLATURE

Technical Guidelines for the organization of an effective Surveillance System in the area

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(NISOS GYAROS KAI THALASSIA ZONI)

MARCH 2018