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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee
24th meeting

Strasbourg, 29 November - 3 December 2004

**Installation of a new antenna (Pluto II)
in the Sovereign Base Areas
(Akrotiri, Cyprus)**

**Report of the on-the-spot appraisal
(5-7 September 2004)**

by
Mr Eckhart Kuijken

*Secretariat Memorandum
prepared by
The Directorate of Culture and Cultural and Natural Heritage*

1. Introduction and programme

At the request of the Bern Convention Standing Committee (letter of 20 July 2004 signed by Eladio Fernandez-Galiano, Head of Natural Heritage and Biological Diversity Division of the Council of Europe) we carried out the on-the-spot appraisal at the Akrotiri Sovereign Base Area in Cyprus from 5-7 September 2004, where the construction of a new military antenna (PLUTO II) caused considerable reactions from several authorities, NGO's and the public.

We were accompanied by Mrs Françoise Bauer from the Secretariat General of the Council, who also prepared the contacts and collected most relevant information and reports.

The terms of reference of this expertise were

- analyse the situation regarding the installation of the antenna
- assess the potential impact on biodiversity especially on birds species
- study possible mitigation and ecological compensation measures
- discuss the questions of the monitoring
- meet all relevant authorities as well as representatives of associations and NGOs
- make appropriate recommendations to the government

The task was carried out as follows

- ✓ 4.09 arrival at Limassol via Larnaca
- ✓ 5.09 previsit to the Salt lake and Antenna area with experts of Birdlife Cyprus:
- ✓ (dr. Iris Charalambidou and mr. Michael Miltiadou) and Cyprus Conservation Foundation (Mrs. Elphida Soukris)
- ✓ 6.09 meeting and visit on-the-spot with officials of the British Sovereign Base Area Administration (SBAA) chaired by Chief Officer P. Draycott (see full list below)
- ✓ 7.09 half day field visit with rangers from the Akrotiri Information Centre (SBAA)
- ✓ 7.09 (afternoon) final meeting with representatives of NGOs (see list below)

Following persons attended the officials meeting and SBA site visit on 6.09:

Sovereign Base Area Adm. (SBAA)	Peter Draycott – Chief Officer John Stainton – Administrative Secretary Ian Nicholson – Principal Policy Officer Andrea Yates – European Union Officer Pantelis Charilou – Environmental Officer Thomas Hadjikriakou – Visitor Centre Manager Squadron Leader Neil Payne - RAF
British Forces Cyprus	Andre Leverton – Environmental Protection Officer
Defence Estates	Jane Hallett – Environmental Support Team Dominic Ash – Environmental Support Team
RPS Ecoscope	Darren Frost - consultant

Dr Artemis Yiordamli (Executive Director, Cyprus Conservation Foundation) and Nicholas Symons (Dir. Environmental Studies Centre, Cy.) were also invited by SBAA to participate in the on-site tour.

The visit to the base was very well organised with clear presentations by different officers, summarising most relevant aspects of the antennae issue. Some reports, however, have not yet been received.

We are especially grateful to P. Draycott for his personal introduction to the situation; Jane Hallett made excellent general arrangements and supported the mission before and after the visit; finally we thank Pantelis Charilou and Thomas Hadjikriakou for inviting us at the Akrotiri Information Centre and for putting two well skilled and most dedicated rangers at our disposal for a further field visit during next day to the natural areas surrounding the antennae installations and in the larger parts of the Military base.

Attended the Meeting with Cypriot authorities and NGOs on 7.09 in Limassol:

from Government

- Ministry of Agriculture, Natural Resources and Environment (Mr. Antonis Antoniou)
- Department of Forest (Mr. Savvas Iezekiel),
- Game Fund (Mr. Nicos Kassinis)

from NGOs

- Cyprus Conservation Foundation (dr. Artemis Yiordamli and dr. Elpida Soukri)
- Birdlife Cyprus (Martin Hellicar)
- The Federation of Ecological Organisation (Yiannakis Potamitis)
- Limassol Committee for Environment (Loucas Psillakis, dr Michalis Koraes, Andreas Neokleous)
- Environmental club of Akrotiri (Christakis Evelthantos)

2. Introduction and general background information

2.1 SBA Antenna park in a valuable and vulnerable natural habitat: EIA

The Akrotiri salt lake and associated Fassouri marsh, situated in the Western Sovereign Base Area represent one of the most important wetland systems of Cyprus and is of outstanding importance for breeding, resting and migrating bird populations. Also for other fauna, several plant species and habitats the nature values of this wetland and the totality of the Akrotiri peninsula is internationally recognized as a core area in the Eastern Mediterranean.

Controversies arose with the existing military antenna park of the Sovereign Base Area situated in this wetland complex, especially when the project of building new high antennae (Pluto I and II) started in 1998. Some details are taken from earlier reports:

‘Project Pluto comprises the construction of two communication antennae on the western edge of the Akrotiri Salt Lake within the Sovereign Base Area (SBA) on the Akrotiri peninsula in Cyprus. The new antennae are part of a project to build a modern replacement for the more extensive system of masts and aerials, which was dismantled on the same site in 1998. The antenna erected in 1999 is 58 meters tall (Pluto I) and the antenna erected this year is 96 meters in height and 196 m wide (Pluto II), which is approximately the same height as the masts in the original system. Work commenced on Pluto II in July 2002 and the final phase of construction commenced in May 2003. The project is due for completion in December 2003’.

An Environmental Impact Assessment Report was prepared in 1997; this was considered by some Cypriot bodies as a mere justification of the project, not taking into full account the extreme values of the site, nor seriously investigating alternative locations. Failure to conduct a thorough EIA was also the view of an independent panel. Further developments on the EIA issue are mentioned below.

The wetland complex is listed as an ‘Important Bird Area’. Consequently, the Government of Cyprus has proposed to designate the site as a Nature reserve and would include it in the NATURA 2000 network.: this area, however, is within the British Bases and outside the Cyprus Government’s jurisdiction. The area was designated by the UK as a wetland of international importance under the Ramsar Convention on 20.03.03 as agreed with the Cypriot Ministry of Foreign Affairs in August 2001.

These bilateral agreements between Cyprus and UK in August 2001 also included a review of the EIA by an independent panel and the establishment of an environmental management strategy for the Salt lake. A joint programme to monitor bird movements was foreseen as well. The event of September 11th in USA has surely speeded up the whole process and operations, as these antennae are an essential part of communication networks world wide.

The independent international panel concluded in May 2001 that the 1997 EIA did not respond the necessary standards and requested the provision of additional information and the institution of a strategic approach to project mitigation.

The final report on 'Supplementary Environmental Work' by the Defence Estates was published 7 June 2002. A (preliminary?) review by the Institute of Environmental Management & Assessment (IEMA, Lincoln, UK) was already presented on 14 June 2002, as they had access to the supplementary work at various stages before the publication of that final report..

The panel proposed to conduct this review in relation to monitoring and management of the construction, when it would be proceeded. Also in June 2002 a Ramsar missions to Akrotiri Salt Lake took place (reported by T. Salathé 2002) and formulated some valuable suggestions and needs. It is not clear how far these recommendations have been fully taken into account.

In 2003 the Pluto II antenna was finalised, followed by mitigation measures related to the risk of bird collisions in 2004.

As in the case of the Ramsar Convention, the UK Government has extended the competence of the Bern Convention to cover its SBA in Cyprus.

Conservation NGOs and Cyprus government have put this issue on the agenda of the Standing Committee of the Bern Convention in 2003, expressing their concern about the incompatibility of the Pluto antennae with the internationally important ornithological and nature values of Akrotiri. In its report of 2003 the Cyprus Government indicated that it deplored the choice of the site and the procedures followed. This illustrates the need for serious analysis of the cause in view the Bern Convention. Indeed, the continued presence of the antennae and their impact are to be related to articles 4.2 and 4.3 of the Convention:

"Article 4.2 The Contracting Parties in their planning and development policies shall have regard to the conservation requirements of the areas protected under the preceding paragraph, so as to avoid or minimise as far as possible any deterioration of such areas.

Article 4.3 The Contracting Parties undertake to give special attention to the protection of areas that are of importance for the migratory species specified in Appendices II and III and which are appropriately situated in relation to migration routes, as wintering, staging, feeding, breeding or moulting areas."

Without the historic presence of the British antenna park it looks totally excluded that the location and building of these antennae would have been planned or even considered in the middle of a protected wetland area with large concentrations of birds during most time of the year.

Future use and developments of the antennae park were discussed during our meeting with SBAA. The operation of Pluto I and II with risks of stronger radiations calls for objective scientific approach and monitoring as a basis for risk assessments. These risks for both human beings and birds are still subject of scientific debate; therefore the precautionary principle is to be taken seriously.

In order to avoid more incompatibility and further controversies the eventual installation of new antennae needs an in depth and public EIA with detailed research on alternative locations. However, it looks almost excluded that the Salt lake location would again be considered acceptable, even when existing older antennae were to be removed beforehand (as was the case for Pluto I and II) and even if mitigating measures were taken.

2.2 Conservation values of Akrotiri salt lake and Fassouri marshes

The importance of the area is summarised in the Ramsar Information Sheet (RIS) as follows:

'The Akrotiri Ramsar site is composed of two distinct areas that are hydrologically connected. The first and largest area is the large salt lake and sand flats that are situated in the centre of the Akrotiri peninsula. Over the last three centuries, this former lagoon has been isolated from the sea and a number of saltmarsh vegetation communities have developed and now surround the lake. The

lake and surrounding saltmarsh is important for a range of wetland birds, in particular greater flamingo *Phoenicopterus ruber*. A Eucalyptus forest borders the northern side of the lake and this is an important raptor roosting area.

The second distinct area is the Fassouri marshes that lie to the north-east of the salt lake. This area is made up of a matrix of freshwater habitat types including grazing marsh and reedbeds. Rain water is the key hydrological input for both areas, although the lake does get occasional input from the sea during storms. The two areas are hydrologically linked and the Fassouri marshes provide important water inputs to the seasonal salt lake.

The site qualifies under Criterion 1 of the Ramsar Convention as it is one of the very few major salt lakes within the eastern Mediterranean in seminatural condition that exhibits a wide range of saline and freshwater influences. The site contains many good examples of inland saline and freshwater wetland habitats, a combination that is unique within the biogeographic region of the eastern Mediterranean, including permanent and seasonal saline pools, salt marsh, sand flats and freshwater marshes. The site is the largest aquatic system in Cyprus.

The site qualifies under Criterion 2 as it supports an appreciable number of rare, vulnerable or endangered species or subspecies of plant or animal including 13 endemic and rare plant species (...), as well as over 32 bird species listed on Annex I of the European Birds Directive.

The site qualifies under Criterion 3 as it supports populations of plant and animal species that are important for maintaining the biological diversity of the eastern Mediterranean biogeographic region. Many species of plant and animal, including a number of endemic plant and invertebrate species, are wholly dependent on habitat types represented within the site of which there are few remaining examples on Cyprus.

*The site qualifies under Criterion 6 by regularly supporting an internationally important wintering population of greater flamingo *Phoenicopterus ruber* (...) with average peak counts of 6,000 being approximately 2% of the eastern Mediterranean/SW & S Asian population.'*

*(authors' additional remark: also the rare Demoiselle Crane (*Anthropoides virgo*) is a frequent visitor of the Salt lake in low numbers and has been subject to specific studies: see references)*

3. Site visit and lessons learned

Both the pre-visit observations (on 5.09) and the on-the-spot expertise with SBAA staff (on 6.09 and 7.09) were very instructive about the controversies between technology and nature conservation in this most remarkable landscape of Akrotiri. Also a number of other aspects relevant to sustainable management in the SBA have been observed. The final meeting with Cypriot authorities and NGOs completed our experience and helped to understand several issues in an objective way.

We summarise some findings in the following paragraphs, suggesting recommendations where appropriate.

a) The tall set of **Pluto I and II antennae** affect a zone of 9,6 ha where old types of antennae were previously removed (formerly a grazed saltmarsh). For safety reasons (radiation and other risks), the direct surroundings of the antennae are firmly closed, also for SBAA staff, which hampers frequent bird monitoring at that spot. The vegetation control with help of chemicals within SBAs is stopped as a result of a policy decision some 6 years ago and is replaced by cutting/trimming methods (written information received later from SBAA). The entire antenna park and especially a 'forest' of old and high masts with numerous guy wires represent an obstacle for low flying passing migrant birds. Local resident species probably are familiar with these structures. The high curtain type antennae Pluto are located in the migration corridor between the Salt lake and the fresh marshes.

From scenic point of view, these antennae heavily disturb the 'wilderness feeling' that the Salt lake normally could offer to visitors.

b) The presence of water in the Salt lake at the time of our visit enabled the stay of large numbers of Flamingo's, gulls and waders, observed from a distance. This allowed us to appreciate **the importance of existing connection corridors** for many waterbirds and raptor species between the Salt lake and the Fassouri marsh as well as the barrier effect of Pluto I and II in this regard. The

Eucalyptus belt to the north forces most birds preferring open landscape to approach or cross the antenna park. Experimental cutting of some wooded strips might be considered as a study of the effects on bird flight directions (see also below).

c) **Management of the Fassouri marsh** by cattle, goat or sheep grazing has been a traditional human land use that needs to be continued in order to maintain the semi-natural character of these habitats and to prevent them from overgrowing with reeds, thereby resulting in a lower biodiversity level. Reeds cutting and grazing in collaboration with private farmers is to be considered in the management planning. Former plantations of Eucalyptus in and around this marsh aimed at lowering of water levels, which is not longer desirable from conservation point of view. Partial removal of this wooded strip could create a broader corridor for bird movements between the marsh and the salt lake, thus avoiding the Pluto antennae barrier (see also above). This may however, encounter official and public resistance which is in favour of trees, even if they are non-native (communication will be needed!).

d) **The essential role of landscape-ecological and eco-hydrological relations** between the fresh and salt habitats through (canalised) ditches and ground water flow were discussed during the visit. How far the precautions during the construction of the new antennae, including a translocation of vegetations, have been effective must be subject of continued and frequent monitoring. (We did not observe the transplantation results, but know from literature that this is often not really successful; however, we have been informed by the SBAA HQ that according to Brown S. & P. Lambdon (2004) this has largely been a success with almost all of the translocated areas showing signs of recovery). As Pluto II is build on a semi permeable hardcore base but with piling up to 15 m depth the effect on groundwater flows must be monitored at both sides of the antenna area in order to assess the impact of reduced fresh water inlet in the salt lake and the ponding effect in the Fassouri marsh.

For the integrated wetland management purposes, functional links of both Salt Lake and Fassouri marsh with the rest of the water catchments basin, mainly linked to the Kouris river and dam, as well as the temporary links with the Mediterranean Sea, also need to be taken into account.

e) **Follow-up of the actual mitigation measures to prevent bird collisions**, with lighting the curtain antennae during night and the use of markers on guy wires has been discussed; some experimental set ups of observations, additional to the essential frequent monitoring (counting of bird corpses under the antennae, records with night vision cameras) could give more answers to still open questions concerning the behaviour of migrating birds and reduction of mortality risks. Here NGOs and official experts from Cypriot authorities could continue to join the efforts of SBAA staff in field observations, research and elaboration viz. publication of results.

f) **Disturbing human activities** in the salt lake area and its surroundings, such as model aircrafts, uncontrolled entrance (with dogs, cars etc) disturbing waterbird concentrations, hunting and bird trapping are to be carefully regulated or forbidden. Therefore we recommend that the strong UK conservation standards are applied here as well and that they are formalised in an **integrated management plan** for the whole wetland complex including a surrounding buffer zone where needed. Such plan is a logic consequence of site designation under NATURA 2000 or RAMSAR. Agreements with some important private owners are necessary. As a matter of good practice all stakeholders have to participate in the management plan as from the design stage.

Some aspects of physical planning are essential tools in hands of the SBAA to reduce risks of intensive 'use'. Therefore the low profile state of the Lady's Mile Beach kiosk is to be respected and it is **not** recommended to improve or asphalt the existing sandy track in order to prevent supplementary pressure on the nearby salt lake and dune strip. Permissions for building or other 'hard' developments within the SBA must take into account all values and carrying capacity of the peninsula.

Finally, good conservation practice includes more frequent patrolling by skilled rangers as is already organised by the centre. However, the problem of illegal bird trapping still exists within the SBA and needs to be stopped urgently.

The integrated management plan finally needs to pay attention on aspects of disturbance by aircrafts and other military activities (e.g. parachute exercise on eastern part of the beach owned by the Church).

g) The actual importance and potentials of the wetlands and the Akrotiri peninsula as a whole especially for **environmental and nature education** and balanced ecotourism cannot be underestimated:

- i. The establishment of the Akrotiri Information Centre in the village itself is a positive development and merits long term support from the SBAA. The view on the salt lake offered from the centre's roof is excellent and the combined information on flora, fauna and habitats with the traditional handcrafts (basketry) using local plant species is linking biodiversity and social aspects, one of the strengths of the Ramsar convention. The potential location of the new centre is also excellent.
 - ii. In the military base of Akrotiri not only natural phenomena but also historical and archaeological sites can be found. Together with the undisturbed coastline scenery these values could be the subject of guided visits (especially for local school children and inhabitants), in order to increase public awareness and involvement for nature and environment both inside and outside the SBA. Some signposted trails exist and give interesting explanations about the historical monuments within the base.
 - iii. The Akrotiri Information Centre can bring a positive message of cooperation between military functions and nature values in a balanced way. This must be based upon joint actions regarding monitoring and research, management and education, including the local population and NGOs in specific projects (such as WSBA Turtlewatch). The Akrotiri Peninsula Resource Education Plan of the SBAA Information Centre is a first step in this regard. The establishment of a permanent Visitors Centre is planned within 3 years.
- h) The issues of **health, emission studies** and the **radiation risks** for residents of nearby villages were raised during our discussions with SBAA, but no clear answers were given, except for a statement that the levels are 70 times below accepted EU standards.

By e-mail message of 4.11.04, SBAA HQ provided more information on this item (see addendum).

The impact of radio waves not only on human beings but also on bird orientation is a matter of concern, but scientific evidence is still controversial.

The official radiation measurement instrument in Akrotiri was removed before our visit and only registered during a short period of some months (SBAA mentioned to us that the monitoring device had been sent abroad for maintenance and calibration); earlier results collected by France Telecom were not continued (?). We recommend that a greater effort should be made to monitor radiation from the site, and that to ensure transparency the original source data should be available to the SBA Authorities, the Cyprus Government, and the NGO's for interpretation by their chosen experts.

Further there are doubts about the simultaneous use of Pluto I and Pluto II. Although a written document of 27.08.2001 from the British High Commission in Nicosia stated that this would not happen, it was announced on 3.08.2004 that both were indeed operating simultaneously, with radiation emissions 'well within safety limits' (quote Cyprus Mail 2004). The availability of radiation measurements in that case is not clear.

Even if not working simultaneously, scientists warn about exposure limits in Electromagnetic Fields (EMF) and especially some microwave radiations emitted by the antennae are supposed to be harmful.

It is evident (but somewhat beyond the scope of our expertise) that permanent monitoring and research on radiation risks must be continued and that reflections or experiments on possible effects on bird movements have to be included (e.g. with caged animals). Anyway the precautionary principle is most important here and good communication with local residents seems of utmost importance as well.

In this regard we may refer to the Final Study 'The physiological and environmental effects of non-ionising electromagnetic radiation', Working document for the STOA Panel, European Parliament, Dir. Gen. for Research, Luxemburg, March 2001; ref.; PE 297.574/Fin.St.

It is remarkable that no complaints have been formulated with regard to the eight existing transmission masts of the BBC near Lady's Mile. This could be explained by the fact that they have no guy wires and are less conflicting with bird movements.

i) Some remarks on the designation of the RAMSAR and NATURA 2000 sites, on the establishment of an **integrated nature management plan** and the **long term monitoring** procedures:

As the wetland areas affected by the antennae are situated in the SBA, it seems evident that the UK principles and methods are followed in these processes. However, the designation and management of the sites need to be in balance with the overall Cypriot approach in its biogeographical context. Therefore we strongly recommend a *permanent platform of consultation* between the SBA and Cyprus authorities concerned.

The designation as a Ramsar site of an area which excludes the antennae park has been criticised by Cypriots. This is a matter of pragmatism that is encountered also in many other countries. Including sites of less value and contrary land use or destinations may offer hope for changes in the far future, but it also can weaken the strength of regulations to be taken in the area as a whole. Therefore many authorities do indeed decide to exclude enclaves with adverse land use from designation under nature conservation agreements, in order to have stronger regulations corresponding to the more valuable areas.

In the case of Akrotiri, the inclusion of the antennae park within RAMSAR or NATURA 2000 looks logical on a map. It would surely increase the power for imposing mitigation measures, but still would require some exceptions for a number of (defence) activities. In such cases we recommend specific agreements between all stakeholders and regular evaluations of the arrangements, so that even the exclusion of enclaves can bind the responsible land owners or users to maintain harmony with the surrounding protected area. This can be reinforced by application of other instruments such as physical planning and environmental regulations, which is strictly needed to lower pressures from hard developments such as housing, tourism or intensive agriculture.

The terms of reference of the management planning needs to take into account the specific criteria and values mentioned under the Ramsar and the Bern Conventions and the EU directives, as expressed in Annexes or specific guidelines. Evaluation at European level must make sure that the required standards are maintained.

j) In several countries the **contribution of military areas to nature conservation is recognised** and has led to a specific position of some areas in Ramsar or Natura 2000 networks. Especially in heavily developed areas the presence of military zones can be positive, as they typically prevent residential or tourist development, or the exercise of intensive agriculture, in places where these practices might otherwise have had a detrimental effect on nature. The Pluto antennae, however, have a risky location in a relatively small migration corridor of several bird species. In the case of Akrotiri and surrounding coastal strips, the SBA military exclusion zone has beneficial effects in protecting core sites for nesting Eleonora's Falcons and the Griffon Vultures on nearby cliffs and Turtle nesting beaches also secured some measure of protection due to their position within the SBA.

k) We strongly advocate the creation of joint committees or working groups involving the SBA and Cypriot NGOs to promote the design, monitoring and assessment of the nature conservation and health hazard situation on the Akrotiri Peninsula, especially around the site of the Pluto antennae. We recognise the possible perceived political dimension of such cooperation, but nonetheless feel that it would be in the best interests of this internationally important site, and of the local residents, if such collaboration takes place.

4. Reports and studies review

A large number of reports and statements have been reviewed before and after our field visit, in order to formulate relevant recommendations in a constructive approach.

Many interesting studies on bird behaviour, including night movements and collision monitoring have been conducted for short periods of one year. Many subjects still need to be continued as the results show quite a statistical noise and differences between seasons or years. At present, studies show that risks for some of the most critical wetland species are almost negligible (e.g. Demoiselle crane and Flamingos).

Extrapolation of results from Pluto I observations to Pluto II predicted that this last curtain antenna must have a threefold effect on bird mortality, but this must be measured in detail and for longer periods. Bird mortality studies, however, are difficult to realise as a consequence of the limited possibilities to enter the base of Pluto I and II antennae (for safety reasons, even for personnel of the SBAA).

Studies on mitigation measures (lighting of curtain antennae at night except during mist periods, use of different light sources, putting markers on guy wires) also needs further follow up and programming of experiments. In order to create an active network of engaged field observers and scientists, joint efforts of UK and Cypriot officials and NGOs are strongly recommended.

As the location of Pluto mainly had historical reasons (the presence of the old transmitting station) and was merely the subject of studies on location alternatives in the EIA, a comparison of bird collision risks between the remaining old antennae (masts and aials) and the actual Pluto I & II must explore the total impact of the Akrotiri transmitting station as a whole. Some presumptions exist indeed that the old installations with masts, guy wires and aials could be much more harmful for birds than the new Pluto curtain antennae with their mitigating techniques. This needs to be investigated.

As the location of the antennae park between two subsites of the Ramsar wetland complex is still subject to dispute with Cypriot authorities, NGOs and citizens, the SBAA are advised to continue their efforts to communicate with clear signals about real environmental impacts.

In this regard -but rather outside the scope of the actual Bern Convention cause- the SBA authorities must prepare information procedures on continuous measurements of radiation doses and effects in the surrounding villages, with high standard monitoring data and reference material from longer distances that are openly validated by independent scientists. Especially the simultaneous operation of both antennae Pluto I and II is a matter of high concern, because earlier correspondence exist promising that only separate use was planned.

5. References

We list some of the most important titles below (in chronological order).

- March 2001: **'The physiological and environmental effects of non-ionising electromagnetic radiation'**, Working document for the STOA Panel, European Parliament, Dir. Gen. for Research, Luxemburg; ref.; PE 297.574/Fin.St.
- 20 May 2002: **Review of the EIA for Project Pluto Akrotiri Salt Lake, Cyprus**; CEAM, Institute of Environmental Management & Assessment, Lincoln, UK, 67p.
- May 2002: **Assessment of off-site environmental effects and socio-economic impacts of Project Pluto**; Defence Estates Sustainability and Environmental Advisory Team and Sovereign Base Area Administration – Area Office, version 1.0, 79p.
- May 2002: Proposed Antennae Development, Salt Lake, The British Sovereign Base at Akrotiri, Cyprus, **Archaeological Desk-based Study, Geophysical and Geological Assessment**; Wessex Archaeology, UK, 46p.
- 7 June 2002: Project Pluto, **Supplementary Environmental Work, Final Report**; Defence Estates, 69p.
- 14 June 2002: **Review of Additional Assessment Reports on Project Pluto** (Proposed Antennae Development), British Sovereign Base Area, Akrotiri, Cyprus, Statement of the Independent Panel; CEAM, Institute of Environmental Management & Assessment, Lincoln
- 17-21 June 2002: **Ramsar Mission to Akrotiri Wetland Complex, UK Sovereign Base Area, Cyprus**; Mission Report by Tobias Salathé (Ramsar Bureau)
- 24 June 2002: **Project Pluto Environmental impacts, Position of the Director of the Environment Service (on the International Panel two reviews)**; Min. of Agriculture, Natural Resources and Environment, Environment Service.

- 20 March 2003: **Information Sheet on Akrotiri Ramsar Wetlands (RIS)**, Ramsar Bureau (Gland, CH)
- March 2003: Cyprus Conservation Foundation (Dr Artemis Yiordamli) **Threat by Military Antenna in the UK Sovereign Base Area of Cyprus to the Akrotiri Wetland**; Standing Committee 23rd meeting Strasbourg
- 28 March 2003: **Project Pluto: Diurnal Bird Movements**. Defence Estates; RPS Ecoscope
- 28 March 2003: Report by the UK Government: **Installation of a new antenna (Pluto II) in the Sovereign Base Areas (Cyprus)**; Standing Committee 23rd meeting Strasbourg T-PVS/Files (2003)1 (Written response to concerns raised by Cyprus Conservation Foundation)
- 9 April 2003: **Investigation of the effect of Pluto I mitigation lighting on wintering birds March 2003**; RPS Ecoscope
- 20 April 2003: **Autumn 2002 night time flight line bird survey**; RPS Ecoscope
- 19 May 2003: **Winter 2002/03 night time flight line bird survey**; RPS Ecoscope
- June 2003: **Game Fund, Cyprus Ministry of the Interior: Akrotiri Salt Lake Antennae Project. Bird Mortality Monitoring, Final Report**. (Study period 1.02.02-14.03.03).
- June 2003: **Ministry of Agriculture, Natural resources and Environment, Forestry Department. Report on the impacts to the avifauna from the antenna 'Pluto II' establishment to the Limassol Salt Lake** (monitoring period 10.01.02 – 10.02.03)
- 7 July 2003: **Greater Flamingo Population Monitoring Project, Akrotiri Salt Lake, Cyprus**. by Stronach, P.J. & Bates, M.A., Heritage Environmental Limited
- 31 July 2003: **Project Pluto. Bird Mortality Monitoring February 2002-March 2003**. Defence Estates; RPS Ecoscope
- 23 September 2003: **Report by the NGO (Cyprus Conservation Foundation in coop. with Birdlife Cyprus) Specific File: Military Antenna on the British base of Akrotiri (Cyprus)**; Standing Committee 23rd meeting Strasbourg T-PVS/Files(2003)19
- 15 October 2003: **Report by the Cyprus Government: Installation of a new antenna (Pluto II) in the Sovereign Base Areas (Cyprus)**; Standing Committee 23rd meeting Strasbourg T-PVS/Files (2003)25
- 25 October 2003: **Akrotiri Salt Lake, Demoiselle Crane Survey 2002**; Defence Estates; RPS Ecoscope
- 19 November 2003: **Report by the UK Government: Installation of a new antenna (Pluto II) in the Sovereign Base Areas (Cyprus)**; Standing Committee 23rd meeting Strasbourg T-PVS/Files (2003)1 reviewed
- 12 February 2004: **Defence Estates: Project Pluto Akrotiri Salt Lake Demoiselle Crane Survey 2003**; RPS Ecoscope
- September 2004: **Birdlife Cyprus comments on the 'Pluto II' antenna installation at the Akrotiri Salt Lake Ramsar Site and Important Bird Area (IBA)** (Martin Hellicar)
- September 2004: **SBAA Environment Department: Presentation of Akrotiri Peninsula Resource Education Plan**; Akrotiri Information Centre (Thomas Hadjikyriakou)
- added reference mentioned by SBAA Headquarters (not consulted by the expert):
- Brown S & P Lambdon (2004), Project Pluto Survey of Translocated Vegetation May, 2003, Centre for Ecology & Hydrology, Dorset.

APPENDIX



Convention on the Conservation
of European Wildlife and Natural Habitats

Standing Committee

Draft Recommendation No. ... (2004) of the Standing Committee, examined on 3 December 2004, on the installation of a new antenna (Pluto II) in the Sovereign Base Area (Akrotiri, Cyprus)

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under the terms of Article 14 of the Convention,

Having regard to the aims of the Convention to conserve wild flora and fauna and their natural habitats;

Recalling that under Article 4 of the Convention each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the conservation of the habitats of the wild flora and fauna species, especially those specified in Appendices I and II, and the conservation of endangered natural habitats;

Recalling that Article 4 of the Convention stipulates that the Contracting Parties in their planning and development policies shall have regard to the conservation requirements of the areas protected under the preceding paragraph, so as to avoid or minimise as far as possible any deterioration of such areas;

Recalling that Article 4 of the Convention stipulates that the Contracting Parties undertake to give special attention to the protection of areas that are of importance for the migratory species specified in Appendices II and III and which are appropriately situated in relation to migration routes, as wintering, staging, feeding, breeding or moulting areas;

Noting however that Article 9, paragraph 1, states that a Party may make exceptions from the provisions of Articles 4, 5, 6, 7 and from the prohibition of the use of the means mentioned in Article 8 provided that there is no other satisfactory solution and that the exception will not be detrimental to the survival of the population concerned;

Referring to the report of Mr Eckhart Kuijken drawn up following his on-the-spot appraisal [document T-PVS/Files (2004) 21];

Bearing in mind the work carried out by the independent international panel of experts of the IEMA (Institute of Environmental Management and Assessment, Lincoln, UK) as well as the findings of the Ramsar Convention mission conducted in June 2002 to the Akrotiri Salt Lake ;

Noting that the construction of the communication antennae on the western edge of the Akrotiri Salt Lake is justified on security grounds and that they are an essential part of worldwide communication networks;

Noting that the Akrotiri wetland contains a combination of inland saline and freshwater wetland habitats unique in the biogeographic region of the eastern Mediterranean;

Noting that this ecosystem is listed as an "Important Bird Area" and was designated by the United Kingdom as a wetland of international importance under the Ramsar Convention as agreed with the Cypriot Ministry of Foreign Affairs;

Considering that this area is a major component in the implementation of the Natura 2000 / Emerald Network;

Having taken note that the local population of Akrotiri village has expressed serious concern over the health risk from the repeated exposure to radiation;

Convinced of the need for co-operation between the Sovereign Base Area (SBA) and the Cypriot authorities and the non-governmental organisations (NGOs) in order to ensure regular monitoring and to carry out field observations and research;

Stressing also the need for good communication with local residents, especially on the subject of health;

Having noted monitoring of bird movements by night vision equipment illustrating that some mortality occurs (RPS-Ecoscope Report)

Aware of the mitigation measures already taken by the British authorities to prevent bird collisions;

Recognising furthermore the contribution of the military presence to the conservation of natural values of Akrotiri and surrounding coastal strips,

Recommends to:

1. Further monitor on a long-term basis the consequences of the construction of the Pluto I and II antennae in a site with ornithological values of international importance, especially in order to better estimate the overall level of bird mortality; it is recommended to establish networks of SBA experts together with NGOs and the Cypriot authorities and to join efforts for both monitoring and the design of additional experimental research and the development of further mitigating measures to minimise the effects of the antenna park on bird movements;
2. Monitor radiation levels in order to assess effects on bird orientation, but in the first place to assure local populations that there are no health problems even when the antennae are operated simultaneously; independent validation of monitoring data is to be guaranteed and additional opportunities for biological experimental research are to be considered in view of the precautionary principle;
3. Draw up an integrated management plan for the whole wetland complex of the Salt Lake and Fissouri Marsh, including surrounding areas of outstanding ecological importance (beaches, dunes, rocky shorelines), taking into account the requirements of the Ramsar and Bern Conventions and of the European Union directives in order to safeguard the international values;
4. Ensure that the establishment of the management plan is based on mutual agreements between the SBAA, the Cypriot authorities and specialised NGOs and that it is communicated to all stakeholders, especially local residents.

Crucial aspects to be included are, among others:

- i. water management (quantity and quality, influence by agricultural chemicals, etc.), coastal protection, bird preservation, habitat conservation and vegetation management;
 - ii. specific actions to avoid bird disturbances (by cars, visitors, shooting, bird trapping, model airplanes), including the mitigating measures in the antennae park;
 - iii. regulations concerning recreational land use and physical planning taking into account the limits of the area's carrying capacity by preventing irreversible development of beach recreation facilities;
 - iv. a restricted policy for building permissions in order to prevent increased pressure on the environment;
 - v. a chapter on further establishment of environmental and nature education, monitoring and research, including provision of budgets for personnel, equipment and functioning costs (leaflets, exhibitions, etc);
5. Remove gradually the western edge of the eucalyptus belt north of the Salt Lake and on the south-eastern edge of Fissouri Marsh in order to alleviate the risks of bird collisions with Pluto antennae; the effects of cuttings must be carefully monitored for all groups of species (waterbirds, raptors, passerines) as well as the ecological consequences on the water level and the potential for vegetation restoration;
 6. Take steps to ensure that the archaeological, historical and ecological values of Akrotiri, which represent an underestimated opportunity for environmental and cultural education, especially for

schools but also for the public at large be recognised; open and improve some of the signposted trails in the military area as a specific programme of the Akrotiri Information Centre and the future permanent visitors centre, in order to better communicate with the Cypriot population.