SUSTAINABLE MEDITERRANEAN

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Living in harmony with nature in the Mediterranean

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Vivre en harmonie avec la nature en Méditerranée








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EDITORIAL

The Mediterranean region, frequently referred also as an "eco-region", is considered to be one of the world's hotspots with exceptional concentrations of biodiversity. However, the region's unique wealth is critically endangered as biodiversity continues to decrease rapidly, due to human-induced pressures which result in the fragmentation, degradation and loss of habitat and extinction of species. As biodiversity loss continues our knowledge of its importance is growing, highlighting the fact that urgent actions should be undertaken at all levels to tackle this critical issue in the wider Mediterranean area.

This issue of **Sustainable Mediterranean** is dedicated to biodiversity on the occasion of the UN Year of Biodiversity and the failure to meet our expectations and achieve the objectives set to preserve biodiversity at both International and European level and particularly:

- to achieve the 2010 biodiversity target to significantly reduce the rate of biodiversity loss adopted by the 2000 UN General Assembly as a target of Millennium Development Goal 7, "to ensure environmental sustainability";
- to halt the decline of biodiversity in the EU by 2010 and to restore habitats and natural systems, a target adopted by EU Heads of State and Government in 2001. The new objective set aims to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, restore them insofar as feasible, while stepping up the EU contribution to averting global biodiversity loss;
- to see concrete indications of a diminishing biodiversity loss at Mediterranean level.

The inadequacy of country policy responses to halt the general decline of biodiversity at International, Mediterranean or European level is evident in the outcomes of several reports and assessments, such as the EEA's assessment "Progress towards the European 2010 biodiversity target, 2009"; the Millennium Ecosystem Assessment, 2005; the IUCN Red List of Threatened Species, 2008; etc.

This does not mean that there have not been important initiatives, efforts and some progress made in reducing certain pressures through specific legislation at EU level e.g. on atmospheric emissions, freshwater quality and waste water treatment. However, key sectors remain problematic and need deeper re-thinking of their operations vis-à-vis sustainability, e.g. fisheries. In addition, of particular significance for Mediterranean biodiversity are the impacts of climate change, which are just emerging and have not yet been fully recognised and integrated. Many ecosystems have been degraded thereby reducing their capacity to respond to future shocks such as the effects of climate change.

- In order to achieve greater progress towards biodiversity conservation and avert the accelerating, catastrophic loss of the variety of life forms in the Mediterranean region, there is an urgent need for a set of actions and responses closely linked with ambitious short- and long-term post-2010 targets, aiming to tackle sufficiently and effectively the indirect and direct drivers of biodiversity loss in the Mediterranean region. This requires actions at different "fora": EU, Union for the Mediterranean and Barcelona Convention.
- The initial step should be the setting of ambitious yet realistic and measurable short-, medium and long-term targets. These targets should be based on robust scientific evidence (e.g. with the use of the pan-European Streamlining European 2010 Biodiversity Indicators, etc.), taking into account related challenges and opportunities, while actively engaging all stakeholders. The latest should be supported in order to play their role effectively.
- The post-2010 overarching goal towards the protection of biodiversity should be coherent with commitments made by the Contracting Parties to the UN Convention on Biological Diversity at their 10th session (Nagoya, Japan 18-29 October 2010), while going beyond halting the loss of regional biodiversity and also including actions towards restoring its integrity and variety - thus ensuring the continued provision of its goods and services. The needed considerable expansion of protected areas in the region should be accompanied by provisions for their proper monitoring and management.

La région méditerranéenne, fréquemment appelée "écorégion", est considérée comme l'un des points chauds du monde, du fait de ses concentrations exceptionnelles de biodiversité. Toutefois, la richesse unique de la région est en danger car la biodiversité continue à se réduire très rapidement en raison de la pression humaine qui entraine la fragmentation, la dégradation et la perte de l'habitat et l'extinction des espèces. Alors que la diversité biologique diminue, notre conscience de son importance augmente, soulignant le fait que des mesures urgentes doivent être prises à tous les niveaux pour gérer cette question critique dans la région méditerranéenne.

Cette édition de **Sustainable Mediterranean** est consacrée à la biodiversité, à l'occasion de l'année internationale de la biodiversité des Nations Unies mais également dans le contexte de notre incapacité à répondre à nos attentes et à atteindre les objectifs de préservation de la biodiversité au niveau international et européen, et particulièrement :

- réaliser les objectifs de biodiversité de 2010, visant à réduire de manière significative le taux de perte de biodiversité,
- adoptés en 2000 par l'Assemblée générale de l'ONU en tant qu'objectif 7 de développement du millénaire, « pour garantir une durabilité environnementale » ;
- arrêter le déclin de la biodiversité dans l'Union Européenne d'ici 2010 et restaurer les habitats et les systèmes naturels, objectif adopté par les chefs d'Etats et de gouvernements de l'UE en 2001. Le nouvel objectif a pour but de stopper la diminution de la diversité biologique et la dégradation des services écosystémiques dans l'UE d'ici 2010, les restaurer dans la mesure du possible, tout en intensifiant la contribution de l'UE pour éviter la réduction de la diversité biologique à l'échelle mondiale ;
- constater concrètement un ralentissement de la réduction de la biodiversité au niveau méditerranéen.

L'inadéquation de la réponse constituée par les politiques des pays pour arrêter le déclin général de la biodiversité au niveau international, méditerranéen ou européen est évidente dans les conclusions de certains rapports et évaluations tels que l'évaluation de l'AEE intitulée « Progrès réalisé vers l'objectif européen 2010 pour la biodiversité, 2009 », l'Evaluation des écosystèmes pour le millénaire de 2005, la Liste rouge mondiale de l'IUCN des espèces menacées, 2008, etc.

Cela ne signifie pas qu'il n'y a pas eu d'initiatives importantes. En effet, des efforts et des progrès ont été réalisés dans la réduction de certaines pressions, à travers la législation spécifique au niveau européen, par ex. sur les émissions atmosphériques, la qualité de l'eau douce et le traitement des eaux usées. Toutefois, les secteurs principaux demeurent problématiques et il est nécessaire de repenser les opérations concernant la durabilité, par ex. la pêche. De plus, les impacts du changement climatique qui émergent à peine et qui n'ont pas été entièrement reconnus et intégrés, sont d'une importance significative pour la diversité biologique. De nombreux écosystèmes ont été dégradés, réduisant ainsi leur capacité à répondre à des chocs futurs tels que les effets du changement climatique.

Afin de progresser dans la préservation de la biodiversité et d'éviter la perte accélérée et catastrophique des formes de vie dans la région méditerranéenne, il y a un besoin urgent d'un ensemble d'actions et de réponses étroitement liées aux objectifs post-2010 à court terme et à long terme, ayant pour but de s'attaquer de manière efficace aux causes directes et indirectes de la réduction de la biodiversité dans la région méditerranéenne. Cela nécessite des mesures de la part de différents forums : Union pour la Méditerranée et Convention de Barcelone.

L'étape initiale serait d'établir des objectifs à court, moyen et long termes, ambitieux mais tout de même réalistes. Ces derniers devraient être fondés sur des preuves scientifiques solides (par. ex. avec l'utilisation d'indicateurs pan-européens de biodiversité pour 2010, etc.) en prenant en compte les défis et opportunités, et en engageant toutes les parties intéressées. Ces dernières devront être soutenues afin de pouvoir jouer leur rôle de manière efficace.

Les objectifs importants post-2010 pour la protection de la biodiversité devraient être cohérents avec les engagements pris par les Parties contractantes à la Convention des Nations Unies sur la diversité biologique au cours de leur 10ème session (Nagoya, Japon 18-29 octobre 2010), tout en allant plus loin que le ralentissement de la réduction de la biodiversité régionale et en englobant des mesures afin de restaurer son intégrité et sa variété, et ainsi assurer la disposition continue de ses biens et services. L'expansion considérable nécessaire des secteurs protégés dans la région devraient être accompagnée de dispositions pour leur suivi et leur gestion appropriés.

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Photograph: ©Thomais Vlachogianni

Danaus chrysippus Linnaeus

LES ENJEUX DE LA BIODIVERSITÉ DANS UNE VISION SYSTÉMATIQUE DE LA VIE

par Son Altesse Sérénissime Albert II, Prince Souverain de Monaco

Lorsque l'Assemblée Générale des Nations-Unies a décidé de faire de 2010 l'année internationale de la biodiversité, nous ne mesurions alors pas pleinement la pertinence de ce choix. Après la déception du sommet de Copenhague et les débats des mois qui ont suivi, cette année dédiée à un sujet majeur permet de rappeler quelques vérités importantes.

Tout d'abord, l'érosion de la biodiversité est malheureusement un fait incontestable dont l'origine largement humaine ne fait aucun doute.

Contrairement au changement climatique, c'est un phénomène dont le constat ne souffre aucune discussion, même si son évolution obéit à des lois complexes. Chacun peut en mesurer la gravité, tout spécialement dans la région méditerranéenne. Chaque extinction d'espèce est irrémédiable et aucun progrès technologique ne pourra lui redonner vie.

Nous savons tous que la situation est particulièrement inquiétante. Sous l'effet notamment des dommages causés par l'homme aux écosystèmes naturels, en particulier aux forêts, aux zones humides, aux mangroves, aux lacs, aux rivières et aux espaces marins, le nombre d'espèces connues aurait décliné de près de 40 % depuis les années 1970.

En Méditerranée où 10 % des espèces de la planète cohabitent sur 0,7 % de sa superficie, la protection de la biodiversité terrestre et maritime est une urgence en faveur de laquelle Monaco et ma Fondation se mobilisent, en association avec les autres Etats riverains et les ONG de la région.

La deuxième donnée importante de la biodiversité réside dans le caractère encore très parcellaire de nos connaissances.

Malgré son accélération récente, la perte de la biodiversité demeure trop mal connue pour nous permettre d'avoir une vue globale. Nous avons à ce jour inventorié environ deux millions d'espèces, mais nous ignorons tout du nombre de celles qui restent à découvrir... Sur les univers marins par exemple, et en particulier sur les grands fonds, nos connaissances sont encore balbutiantes. Des pans entiers de notre planète, pourtant potentiellement menacés, échappent ainsi à notre vigilance.

Or, à peine commençons-nous à connaître les espèces qui nous entourent que déjà nous constatons leur fragilité.

Plus qu'aucune autre, la problématique de la biodiversité nous impose donc de comprendre l'apport irremplaçable de la recherche scientifique à notre perception du monde. Sans un soutien très fort aux chercheurs, nous ne pourrons jamais espérer connaître les espèces qui nous entourent. Sans la communauté scientifique, nous ne pourrons donc pas sauver les espèces aujourd'hui menacées.

Troisième question concrète posée par l'enjeu de la biodiversité : la mise en place d'une croissance économique responsable et durable.

Nous savons qu'il nous faudra en 2050 nourrir 9 milliards d'êtres humains. Or, les menaces contre la biodiversité nous alertent déjà sur les impasses de notre mode de vie actuel.

Le cas du thon rouge, espèce emblématique de la Méditerranée aujourd'hui menacée par une pêche déraisonnable, doit ici nous faire réfléchir. Cet exemple crucial, pour lequel Monaco s'est battu et continuera de le faire, montre la nécessité de mettre en place des garde-fous qui garantissent l'avenir des espèces menacées. Il nous impose aussi d'imaginer des modes de production alimentaire pérennes et qui ne mettent pas en péril l'équilibre des espèces. Il y a là un potentiel de développement économique très important.

Le quatrième apport de la question de la biodiversité aux débats sur la préservation de la planète est d'ordre plus philosophique.

Au travers de la problématique de la biodiversité, c'est notre place sur la Terre qui est en jeu et nous oblige à penser au-delà de nous. Au-delà des intérêts économiques ou nationaux à courte vue, bien sûr. Mais surtout au-delà de l'anthropocentrisme qui structure habituellement notre vision du monde.

Je l'ai dit et répété, nos actions en faveur de l'environnement répondent avant tout à une préoccupation humaniste, c'est-à-dire guidée par le souci d'offrir aux humains dans leur diversité les meilleures conditions de vie et d'épanouissement physique, intellectuel et moral. S'il s'agit de protéger cette planète, de préserver l'avenir de ses espèces et de ses paysages, c'est avant tout pour garantir aux générations futures un environnement qui ne soit pas irrémédiablement détruit. Un progrès qui se ferait aux dépens des humains ne saurait être un vrai progrès.

A cette exigence d'humanisme, l'enjeu de la biodiversité apporte la démonstration que l'avenir de l'homme ne

peut se concevoir indépendamment de celui de son environnement. Dès lors, l'injonction humaniste se teinte d'une nuance nouvelle. Ce n'est plus l'homme seul qui est la finalité de l'action, c'est l'ensemble complexe au sein duquel il évolue et sans lequel il n'est rien, cette biosphère dont nous ne savons pas tout mais que nous devons protéger.

Question à la dimension tout à la fois politique, scientifique, morale et économique, la biodiversité nous trace des perspectives tant d'action que de réflexion.

BIODIVERSITY CHALLENGES IN THE FRAMEWORK OF A SYSTEMATIC VISION OF LIFE

by his Royal Highness Albert II, Sovereign Prince of Monaco

When the General Assembly of the United Nations decided to announce 2010 as the International Year of Biodiversity, we hadn't fullymeasured the relevance of this choice. After the disappointment from the Copenhagen Summit and a series of discussions during the following months, this year dedicated to a major topical issue, enables to recall certain important truths.

Firstly, the erosion of the biodiversity is unfortunately a compelling fact and there is no doubt that it is of human origine.

Unlike climate change, this phenomenon doesn't raise any doubt and topic for discussion, even if its evolution follows complex rules. Its severity can be measured by anyone, especially in the Mediterranean region. Each species extinction is irreversible and there is no technological progress which can bring it back to life.

We are all concerned and aware of how worrying the situation is. It is estimated that the number of known species has declined by 40% since 1970's mainly due to damages inflicted to natural ecosystems by human activities, especially in forests, wetlands, mangroves, lakes, rivers and marine areas.

In the Mediterranean, where the 10% of the world species coexist in 0.7% of its surface, the protection of land and marine biodiversity is an emergency and Monaco and my Foundation, in association with other riparian countries and NGOs of the region are mobilized in order to call up for its preservation.

The second important fact regarding biodiversity is the fragmentary character of the knowledge that we actually have.

Despite its recent increase, there lack of thorough knowledge on biodiversity loos does not enable us to have a global scope of the situation. Up to now we have managed to register about two million species, but we do not know the number of those who still remain undiscovered... we still do not have adequate knowledge. Regarding marine ecosystems for instance and particularly deep-sea ecosystems. Thus, whole parts of our planet, yet potentially threatened, escape our vigilance.

And yet, we barely have the time to to get to know the species that surround us; and already we notice their fragility.

Therefore, the issue of biodiversity -more than any other- imposes us to realize the irreplaceable contribution of scientific research to our worldview. Without providing a strong support to researchers, we can never hope that we will know the species surrounding us. Without the scientific community, we will not be able to save the currently threatened species.

Third specific question raised by the issue of biodiversity is the establishment of a responsible and sustainable economic growth.

We know that in 2050 we will need to feed 9 billion human beings. However, the threats against biodiversity already alert us on the deadlocks of our actual life style.

The case of bluefin tuna, a symbolic species of the Mediterranean threatened today because of uncontrollable fishing, should make us think about the seriousness of the problem. This crucial example, for which Monaco has fought and will continue to do so, demonstrates the need to establish safeguards rules to ensure the future of the endangered species. It also forces us to think of sustainable food production ways which would not put in danger the survival of species. That brings a great potential for economic development. The fourth input of biodiversity issue in the debate for the preservation of the planet is more philosophical.

Through the issue of biodiversity we realize that the future of our planet Earth is put in danger and forces us to think beyond ourselves; beyond economic or short-sighted national interests of course. But mostly beyond anthropocentrism that usually structure our world view.

I have said it over and over again, our actions for the protection of environment respond primarily to a humanist concern, i.e. guided by a concern to offer to people, in their diversity, the best living conditions as well as physical, intellectual and moral development. That means to protect this planet, to safeguard the future of its species and landscapes, primarily to guarantee an environment to the future generations which will not be irreparably damaged. A progress made at the expense of humanity can't be a real progress.

Within this demand for humanism, the issue of biodiversity proves that the future of humanity cannot be conceived independently of the future of its environment. Therefore, the humanist injunction is tinged with a new shade. Human are no more the ultimate purpose of the operation, it is the whole complex within which humans evolve and without which we are nothing, this biosphere for which we do not know everything but we need to protect.

The Biodiversity issue having political scientific, moral and economic dimension, poses a perspective both for action and reflection.

Being an issue with political, scientific, moral and economic dimension, biodiversity opens perspectives both for action and reflection.

Photograph: ©Milan Vogrin

Little owl Athene noctua

BIODIVERSITY, THE TISSUE OF LIFE

by Gerben-Jan Gerbrandy,
Member of the European Parliament, member of the Environment Committee

Despite decades of environmental protection biodiversity is declining at a highly alarming rate. One third of all species is threatened by extinction. That is alarming for the survival of thousands of species of plants and animals, but also for the survival of mankind. We hardly realise it, but also we, the people, are completely dependent on natural resources in the end. We depend on what nature gives us, for example medicines, food, clean water, timber, natural protection against storms, etc. If the intrinsic value of nature, the beauty of it, does not suffice to convince people to protect it, the dependence on natural resources should do the trick to ensure the survival of biodiversity. The United Nations calculated that loss of services from nature worldwide costs more than 50 billion Euros a year. The UN has also made this year the year of international biodiversity, which is a unique opportunity to have biodiversity at the top of the political agenda. Important for the Mediterranean region and the rest of the world will be the decisions taken at the 10th Conference of the Parties to the Convention on Biological Diversity the Convention in Japan, and the upcoming EU Strategy on Biodiversity, which is expected to be published by the end of this year or in the beginning of 2011.

The situation of the sea is a good illustration of the current state of play. If current policies would be maintained, the seas and oceans will be empty in 30 years, while more than one billion people in the world are dependent on protein provided by fish. Despite our knowledge of the incredible decline in fish stocks we keep on subsidising the fisheries sector worldwide with 20 to 50 billion Euros a year, which is roughly the same as the value of all landed fish. The big question here is of course when we will reach the so-called «tipping point»: the moment where we have damaged nature so much it cannot recover anymore. The European Commission made the comparison with the two degree limit in the climate debate. If the temperature rises with more than two degrees, climate change will become an autonomous process on which we have no influence anymore whatsoever. The same goes for biodiversity. What that can lead to is visible on Easter Island, where the whole population died because of massive deforestation and depletion of natural resources. In my opinion the lesson to be taken home is clear.

What we see is that short term profits prevail over long term economic interests. And it is exactly because of the long term economic perspective that we have to treat our natural resources in a sustainable way. Studies, such as the Economics of Ecosystems and Biodiversity (TEEB) study launched by the Germany and the European Commission, have proven that sustainable management of the environment is more profitable, over and over again. Why is that? Because the costs of replacing or restoring a completely depleted ecosystem, if possible at all, are extremely high. So the most important step we have to take is to let biodiversity be a part of our economy. Or in other words, we will have to start paying for the use of biodiversity. Green banking and integrating biodiversity into national accounts are important steps to take, and ground work is already done, e.g. by the European Environmental Agency. Besides that, we also need to integrate biodiversity into all other policy areas such as agriculture and fisheries. We have to start now, in order to save our biodiversity for the future generations.

IMPLEMENTING THE ECOSYSTEM APPROACH IN THE MEDITERRANEAN

by Ms. Maria Luisa Silva Mejias(UNEP/MAP)

The Contracting Parties to the Barcelona Convention, at their 15th meeting held in January 2008, Almeria, Spain, decided that UNEP/MAP should gradually implement the ecosystem approach in view of an ecological vision for the Mediterranean as "a healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations» (Decision IG 17/6). For this purpose, the Contracting Parties at the same meeting adopted the ecosystem approach roadmap, the vision and strategic goals and established a government designated expert group (GDE) with the mandate to guide the work of UNEP/MAP in this respect. In addition, the ecosystem approach is considered an overarching principle for all UNEP MAP work.

Taking into account the stock of the relevant processes on the regional and global levels and in particular the linkages with the EU Marine Strategy Framework Directive (MSFD), the implementation of the ecosystem approach by UNEP/MAP will go through several steps:

a) Identifying important ecosystem properties and assessment of ecological status and pressures in the Mediterranean for 4 specific areas and Mediterranean-wide;
b) Undertaking a socio-economic analysis of Mediterranean ecosystem goods and services;
c) Developing a set of ecological and operational objectives with indicators and target levels;
d) Revising of monitoring programmes in order to take into account the ecosystem approach
e) Undertaking management programmes and actions taking into account the ecosystem approach

Currently UNEP MAP is finalizing the assessment report that covers pollution and biodiversity, physico-chemical characteristics, hydrogeology and oceanographic parameters, as well as a study on the economic value of the Mediterranean marine ecosystems. The finding of the assessment would serve to define the ecological objectives that should correspond to the Ecological Vision and Strategic Goals as adopted by the Contracting Parties in 2008, and the operational objectives with indicators and targets. All this work has been reviewed by two meetings of experts appointed by the Contracting parties.

The study on the economic valuation of Mediterranean marine and coastal ecosystems will improve knowledge of the services and benefits provided by ecosystems with a view to taking them into account more effectively at the regional, national and local levels and provide public decision-makers with a common quantitative measurement to improve the management of environmental issue. In addition, a methodology to assess the economic value of the services provided by ecosystems was also identified, and it is based on a macroeconomic approach at the regional level, inspired by the principles of the United Nations System of Integrated Environmental and Economic Accounting (2003).

Development of the ecological objectives has advanced with regard to the compilation of the existing assessment methodologies and identification of possible quality descriptors of the marine and coastal ecosystem. As a starting point, it was agreed that the 11 EU MSFD descriptors will be used as an example for defining the Mediterranean ecological objectives taking into account the regional specificities, list of threats and issues identified in the assessment report.

What is achieved so far:

a) A consolidated and innovative Mediterranean assessment report based on best information available in the region;
b) Consolidated sectoral sub regional assessment reports on pollution and biodiversity;
c) Integrated analysis of data gaps for the assessment process of the marine and coastal environment for each of the four designated areas finalized;
d) Decision was made to define the ecological objectives on the basis of the 11 MSFD descriptors.

It is worth mentioning the high degree of active participation of all Contracting Parties in this process that requested their full involvement in every step forward in order to implement the ecosystem roadmap.

What else remains to be done?

1) Determining the Mediterranean ecological objectives by creating a prioritization methodology taking into account the findings and recommendations of the assessment report (the list of threats is harmonious with but not identical to the threats covered in the 11 descriptors);
2) Determining the operational objectives (indicators and target levels) based on GES, subject to data availability;
3) Finalizing the assessment report with an emphasis on ecosystem services streamlining and better integration in each sub-regional sub-reports and the Mediterranean-wide chapter;
4) Finalizing the Assessment Report with a special focus on ecosystem services,
5) Advancing the preparation of a QSR report based on the sectoral reports on pollution and biodiversity;
6) Proposing a time frame for implementing all steps of the ecosystem approach roadmap for the consideration of the 17th Meeting of the Contracting Parties in 2011;
7) Developing an approach with regard to monitoring programmes and management effectiveness.

THE MARINE STRATEGY FRAMEWORK DIRECTIVE: A NEW CHANCE FOR MARINE BIODIVERSITY

by Vera M.P. Coelho (ESEC/Seas At Risk)

In the International Year of Biodiversity, it seems there is not much reason for celebration. The EU had committed itself to halt the loss of biodiversity by 2010, but clearly that target has not been met. Marine biodiversity in particular continues to decline rapidly: in European waters, 72% of assessed fish stocks are deemed to be overfished, and 59% are at a high risk of depletion (outside safe biological limits). For 14% of the stocks there is "emergency" scientific advice to stop fishing. Climate change, pollution, invasive alien species and marine litter also pose serious threats to marine biodiversity.

However, not all is lost. This year, the European Council endorsed a new and ambitious target to halt biodiversity loss and restore, where possible, lost or damaged ecosystems by 2020. While this is an important political message, real actions will be needed in order to reverse the dire situation in which our oceans and seas find themselves.

A key tool for halting the loss of marine biodiversity and restoring marine ecosystems to health will be the EU's Marine Strategy Framework Directive (MSFD). This is the first piece of all-encompassing EU legislation specifically aimed at the protection of the marine environment, and its aim is to achieve Good Environmental Status in EU marine waters by 2020. In order to guide Member States' measures, the Directive includes a set of 11 "descriptors" of Good Environmental Status, which range from the status of biodiversity and of the sea floor to the introduction of litter and noise in the marine environment.

Photograph: ©Milan Vogrin

Green crab Carcinus mediterraneus

In order to achieve its ambitious goal, the MSFD establishes that an ecosystem-based approach must be applied to the management of all human activities which have an impact on the marine environment. In this respect, the Directive is a great tool for the integration of environmental considerations in other sectoral policies. European policies such as the Common Fisheries Policy, as well as national policies on tourism, transport, waste, etc. will have to take into consideration their effects on marine ecosystems and the need to comply with the provisions of the Directive.

Another interesting aspect of the Directive is that it imposes on Member States the obligation of regional cooperation: since most marine environmental issues are transboundary in nature, it is crucial that different Member States in the same marine region work together in order to collectively achieve Good Environmental Status. In this respect, Regional Seas Conventions will become crucially important. In the Mediterranean context, the Barcelona Convention will play a key role not only in coordinating the activities of EU Member States, in order to implement the Directive, but also in trying to ensure that other (non-EU) Mediterranean countries contribute to the effort of restoring the marine environment to a healthy state.

However, the MSFD contains some serious weaknesses which might compromise its ability to deliver its goals. On the one hand, it leaves fundamental decisions to the Member States, such as the determination of what is considered to be a Good Environmental Status, or the setting of environmental targets. On the other hand, it also contains an important "escape clause", whereby Member States are not obliged to take action if the costs are "disproportionate".

Civil society therefore has a key role to play in making sure that the Directive is properly implemented and delivers on its promises. Citizens and civil society organisations have the right to be fully and timely informed of their country's plans regarding the implementation of the MSFD, and they should make use of that information to demand that their governments and administrations set ambitious targets and appropriate measures. At European level, citizens have an opportunity to engage in processes such as the reform of the Common Fisheries Policy, or to demand stronger action on marine litter and climate change.

Restoring the marine environment to a healthy state is now a Member State and European obligation, but all Europeans have a role to play – so that we can once again enjoy the beauty and the bounty of our seas.

DEVELOPING A MEDITERRANEAN MARINE PROTECTED AREAS NETWORK (MEDMPANET)

by Atef Limam (RAC/SPA)

The Regional Activity Centre for Specially Protected Areas of the Mediterranean Action Plan (UNEP-MAP RAC/SPA) is a co-executing agency in the implementation of a sub-component of the project "Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (LME)" led by UNEP. This sub-component is entitled "Conservation of the coastal and marine diversity through the development of a Mediterranean Marine Protected Area network (MedMPAnet)". The overall objective of the action is to 'maintain the long-term function of the Mediterranean LME through the use of an ecologically-coherent network of protected areas combined with the sustainable use of renewable marine resources'.
The implementation of RAC/SPA component activities through the MedMPAnet Project consists of enhancing the effective conservation of regionally important coastal and marine biodiversity features in areas under countries' national jurisdiction through the creation of an ecologically coherent MPA network in the Mediterranean region, as required by the Barcelona Convention Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol). This will be achieved through a series of demonstration activities and targeted capacity-building exercises to enable coastal nations to contribute to the overall conservation and sustainable use of the Mediterranean Sea ecosystem and its resources through a Mediterranean MPAs network.

By implementing the above activities, RAC/SPA will assist the country partners to implement the prioritized elements of the Strategic Action Programme for the Conservation of Biological Diversity (SAP BIO) in the Mediterranean Region through the provision of a series of enabling activities at national, sub-regional and regional levels. It will also effectively expand the current MedPAN MPA management network to include the rest of the Mediterranean.

The target groups and beneficiaries of the project are MPA mangers, practitioners and relevant authorities of the following countries: Albania, Algeria, Bosnia and Herzegovina, Croatia, Egypt, Lebanon, Libya, Morocco, Montenegro, Syria, Tunisia and Turkey. The occupied Palestinian territories are also intended to be involved.

HUMAN DISTURBANCE TO WATERBIRDS IN WETLANDS

by Milan Vogrin (DPPVN)

Wetland habitats are among others, important for many waterbirds not only for breeding but also, during the winter months, for wintering and migration. However, many wetlands are nowadays under pressure from different human activities such as habitat destruction, pollution, land-claim, hunting, recreation, etc. This article focuses mainly on recreational activities, which in some regions and/or in some wetlands, are not taken into account or are underestimated or even ignored.

Recreational activities could be harmful

Recreational activities can take place on the shores, e.g. walking, biking, angling, bird watching or in the open water, e.g. swimming, boating. It is already known that the effect of human disturbance on waterbirds, especially on colonies, is dependent on the nature of disturbance (Klein et al. 1995). Human-related disturbance can be attributed to four main categories: scientific workers, ecotourists, recreationists (walkers, joggers, bikers, boaters, anglers, etc.) and hunters. From these four groups scientists work usually very closely with waterbirds, e.g. when doing research on nesting biology (eggs, young ones) but are mostly aware of the threat they may pose.

A big threat for waterbirds is the second group, the so called nature lovers, which include also some wildlife photographers without any ethic code (e.g. photographing a bird on its nest). This group often wishes to approach birds at a close distance and returns to the same places frequently, leading to high levels of disturbance, especially to nesting birds.

Photograph: ©Milan Vogrin

Boats could be very problematic for disturbance of waterbirds

Anglers usually do not cause much disturbance, but can affect birds by clearing the vegetation or with their frequent (permanent) presence in the same fishing spots (e.g. near nests). Permanent or frequent visits to nests could lead to their abandonment by adult birds. Very problematic for waterbirds are also certain types of boats. People with boats which are very agile, can approach previously undisturbed areas such as islands where birds usually nest and rest (Vogrin 1999).

Madsen & Fox (1995) recently show that hunting is the major cause of disturbance to waterbirds, especially during winter when the peak in shooting coincides with the peak numbers of waterbirds in most central and south European countries and especially in the Mediterranean region. In this region there are numerous internationally recognised wetlands of high importance for wintering birds. Many of them are however still without any management plan and protection.

Guidelines are needed

Human disturbance can prevent birds from reaching their breeding sites, accessing food supplies and roosting areas temporarily or for longer periods. These factors affect waterbirds in various ways and may lead to increased nest predation risk, lower density and breeding success, changes in their distribution and habitat use, changes in activity and energy budget (Keller 1996, Nisbet 2000).

Most tourists and recreationers are often not aware of the negative impacts that their presence may have on birds. Therefore, it is essential to raise awareness on this issue. In the most frequently visited wetlands, which are of great importance for birds, leaflets, brochures, info tables, etc. should be in place providing information on the above discussed threat.

Guidelines for minimizing visitor induced disturbance should be prepared for each such place, since guidelines will differ depending on the type of human activities, bird species and also the place. In most cases however, a buffer zone between 100 and 200 meters is usually enough to prevent disturbance to waterbirds.

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Photograph: ©Milan Vogrin

Anas Penelope. Ducks are usually the most frequently disturbed birds in winter

MEDITERRANEAN BIODIVERSITY UNDER THREAT: INVASION OF NON INDIGENOUS SPECIES

by Thomais Vlachogianni (MIO-ECSDE)

The Mediterranean Sea is exceptionally susceptible to biological invasions. The rate of marine bio-invasions has increased in recent decades with significant ecological and economic impacts in the Mediterranean. The principal vectors of Non Indigenous Species (NIS) introduction are: the passage through the Suez Canal, aquaculture, and shipping activities (ballast water).

Apart from the above mentioned paths of introduction, there are other human activities that may lead to the introduction of NIS, which are often overlooked. These include water management systems such as large dams, which can alter the abiotic characteristics of receiving water bodies (e.g. salinity of outflow areas, etc.) or their hydrological regime (e.g. flow disturbance). A very representative example is the impact of the Aswan Dam on the Nile Delta. According to recent publications the damming of the Nile River accounts for about 45% of the observed trend in increased salinity that has occurred over the last 40 years in the Western Mediterranean Deep Water. Furthermore, it has been demonstrated that Nile damming has played a crucial role in the long-term salt preconditioning of the surface/intermediate layers of the Cretan Sea. As a result, pre-existing environmental barriers directly linked to the physico-chemical characteristics of the sea (e.g. salinity) have diminished, thus facilitating the invasion of non-indigenous species and the opportunistic establishment of invasive or pest species in the Mediterranean.

Another extremely important threat looming in the horizon, when it comes to human induced introduction of NIS in the Mediterranean Sea, is climate change. Climate change has profound implications on marine ecosystems, well beyond the increasing sea-water temperature that gives a distinct advantage to thermophilic invasive species over native biota. The effects of climate change on the marine environment include quite complex abiotic and biological responses. Together, increases in water temperature and elevated CO_2 result in a cascade of physical and chemical changes in marine systems. Continued uptake of atmospheric CO_2 leads to substantially decreased water pH and thus to acidification, through an increase of surface-water dissolved inorganic carbon and a decrease of carbonate ion concentration. In addition, temperature has long been known to modify the chemistry of a number of chemical pollutants resulting in significant alterations in their toxicities in aquatic organisms. It is also generally accepted that a higher temperature increases the rate of uptake of pollutants via changes in ventilation rate in response to an increased metabolic rate and decrease in oxygen solubility.

Overall, the anthropogenically induced changes in the abiotic conditions of water (e.g. temperature, pH, total alkalinity, salinity, oxygen solubility, etc.), can cause physiological stress to aquatic organisms, particularly on species already near their tolerance limit, and have the potential to affect the competitive interactions between NIS and native species, thus altering the balance of native species versus NIS, in favour of the later. This is especially evident in the Mediterranean Sea and recent studies on biological invasion mechanisms highlight the need for actions, not only to monitor the state of the marine environment but also to predict future changes, mitigate and manage them.

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LA BIODIVERSITÉ AU MAROC ET LES ACTIVITÉS DE L`ASSOCIATION SPANA CONCERNANT LE SAUVEGARDE DES ECOSYSTÈMES DE LA REGION

by Abdelhamid Belemli (SPANA au Maroc)

Les conditions géo-climatiques du Maroc lui confèrent une grande diversité de bioclimats allant de l'aride, le semi-aride, le sub-humide à l'humide. Ce qui se traduit par une large variété d'écosystèmes : forestiers, steppiques, agricoles, sahariennes, aquatiques marin, côtier et continental ainsi que des grottes. Il en résulte une biodiversité d'une richesse exceptionnelle en méditerranée où l'on trouve des représentants de la faune et de la flore aussi bien africaine qu'euro-asiatique. Ainsi, uniquement pour les espèces répertoriées, on dénombre plus de 24000 espèces animales et 7000 végétales, avec un endémisme extraordinaire de 11% pour la faune et 20% pour les plantes vasculaires en particulier, dans les hautes altitudes.

Malheureusement, cette formidable biodiversité est l'objet d'une tendance à la dégradation. Elle fait face à de nombreuses menaces, du fait des activités humaines aggravées par les changements climatiques, notamment en termes de ressources en eau provoquant un stress hydrique pour les écosystèmes aquatiques continentaux et une désertification rampante. Les menaces restent cependant plus zoo-anthropiques que naturelles. Elles sont liées à la croissance démographique et au développement socio-économique qui, tout en étant légitime en particulier pour les populations pauvres et rurales, entraine une grande pression sur les zones écologiquement fragiles : surexploitation, agriculture intensive, urbanisation, littoralisation, pollution... C'est ainsi que 1700 taxa de la riche flore du Maroc sont considérées comme rares ou menacées et 600 espèces animales sont considérés comme menacées. A titre d'exemples extrêmes, la suberaie du Rif Central a pratiquement été décimée et de nombreuses terres agricoles et zones côtières ont été urbanisées.

Face à ces menaces, le Maroc a mis en place une stratégie et un plan d'action pour la protection de son patrimoine biologique et pour son utilisation durable après de nombreuses études, notamment l'étude nationale sur les aires protégées et l'étude nationale sur la biodiversité.

L'un des objectifs de ce plan d'action qui rencontre des retards et des obstacles pour sa mise en œuvre est la sensibilisation et l'éducation, clé de la prise en conscience de l'appropriation, de l'action et de la participation, aussi bien des décideurs que des populations.

C'est dans ce cadre que la SPANA a décidé depuis 1986 de prendre part et d'être un partenaire actif dans la conservation de la nature et dans l'éducation et la formation environnementales.

La Société Protectrice des Animaux et de la Nature « SPANA » du Maroc, affiliée à la SPANA de Grande Bretagne, est une association marocaine déclarée pour la première fois en 1959 et reconnue d'Utilité Publique par décret en 1976.

Initialement une ONG œuvrant pour la protection des animaux de travail et de compagnie, elle s'est fixée en 1986 deux nouveaux objectifs : la contribution à la conservation du patrimoine naturel du Maroc, de sa biodiversité et l'utilisation durable de ses ressources naturelles d'une part, et la formation, la sensibilisation et l'éducation environnementale, d'autre part.

En plus de la SPANA de Grande Bretagne (Society for the Protection of Animals Abroad) avec laquelle elle opère conjointement au Maroc, elle est membre de plusieurs réseaux, notamment de l'UICN (Union Mondiale pour la Nature), WSPA (World Society for the Protection of Animals), MIO-ECSDE (Mediterranean Information Office for Environment, Culture and Sustainable Development), MENAW (Middle East Network for Animal Welfare), RENAZH (Réseau Nord-Africain des Zones Humides) et tout récemment de Med INA (Mediterranean Institute for Nature and Anthropos).

La SPANA est liée par des conventions aux Départements Chargés de l'Agriculture, des Eaux et Forêts, de l'Environnement et de l'Education Nationale, et à diverses institutions qui en relèvent.

Pour atteindre ses objectifs, la SPANA opère à partir de neuf centres régionaux et un Centre National d'Education Environnementale (CNEE). Les centres régionaux sont à la fois des centres hospitaliers et des refuges pour animaux ainsi que des espaces de sensibilisation et d'éducation environnementale. La SPANA participe également à divers programmes de conservation de la nature, en particulier dans les aires protégées.

Le programme d'éducation et de sensibilisation à la protection animale et à la conservation de la nature de la SPANA s'adressent à :

- Tout public, pour qui la SPANA élabore, publie et diffuse du matériel d'information, d'éducation et de sensibilisation et organise des journées, rencontres et visites aux refuges, réserves et parcs;
- Les groupes scolaires et enseignants, par des programmes spécifiques axés sur la biodiversité, l'empathie et les cinq besoins fondamentaux des animaux.
- Les centres de la SPANA qui sont aménagés et équipés en salles de cours, d'expositions interactives et de jardins assurent l'encadrement par un personnel formé spécialement à cet effet ainsi que le transport des groupes scolaires.

Le CNEE édifié par la SPANA en 1992 dans la réserve biologique de Sidi Boughaba dans le cadre d'une convention spéciale avec le Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification avec l'aide de l'Union Européenne, BirdLife International et de la SPANA de Grande Bretagne, offre aux groupes scolaires un programme d'éducation environnementale spécial axé sur la biodiversité, les ressources naturelles et les problèmes environnementaux, en particulier dans les forêts, les lacs et les zones humides. Les week-ends et jours fériés, son exposition interactive permanente et ses circuits informatifs et éducatifs sont ouverts au grand public.

Les activités de conservation de la nature menées par la SPANA s'inscrivent dans des programmes nationaux ou internationaux et concernent, notamment :

- La participation à l'établissement et à la mise en œuvre de plans de gestion et d'aménagement de certaines aires protégées ;
- La gestion du site Ramsar de Sidi Boughaba par délégation du Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification (HCEFLCD). Il s'agit là d'une première en matière de cogestion des aires protégées.
- La mise en œuvre de projets en partenariat avec le Haut Commissariat des Eaux et Forêts et de la Lutte Contre la Désertification, comme le Programme de Petits Dons, l'équipement de l'écomusée du Parc National de Toubkal et le diagnostic en éducation, information et communication dans le cadre du projet GEF de gestion des aires protégées ;
- La mise en œuvre ou la participation dans divers projets de recherche, de suivi et de développement comme ceux de l'Union Mondiale pour la Nature (UICN), BirdLife International, projet Emeraude, Circle Med, RENAZH, Med Wet.

THE PRESPA ECOSYSTEM AND ITS SIGNIFICANCE TO THE BIODIVERSITY OF SOUTHEASTERN EUROPE

by Anita Logotheti (SPP Prespa)

After Lakes Skadar and Ohrid, the Prespa Lakes, Micro and Macro Prespa, are among the oldest lakes in Europe. Situated in the Balkans in Southeast Europe, they are shared by three countries, Albania, Greece and the FYROM. The two lakes are well-known for their globally significant biodiversity, rich cultural heritage and unique landscapes. Prespa is a high altitude basin, the lakes being situated at approximately 850 m above sea level and surrounded by high mountains exceeding 2,000 m. The total area, comprising the drainage basin and the two lakes, is 1,519 km².

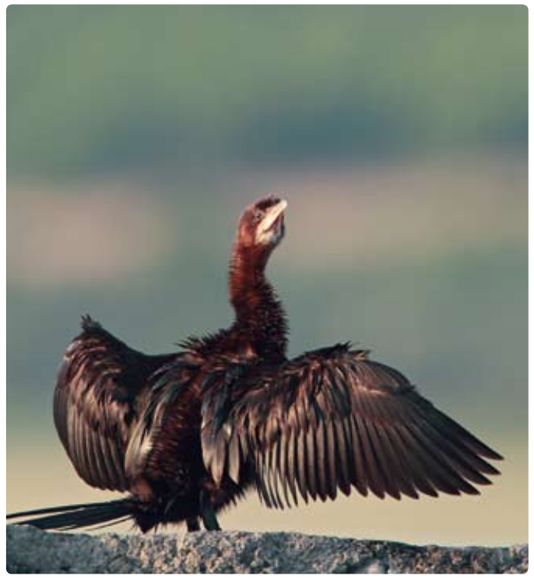
The Prespa Lakes used to be part of the former Dassaretic Basin during the Jurassic period, and they were formed during a karstic collapse during the Tertiary period, together with Lake Ohrid and former lake Maliq (drained in the 1950s). The basin is divided geologically in two distinct parts: the West and South part of the basin is dominated by limestones and dolomites, and the North and East part by granites and gneiss, which also determines the distinctive types of vegetation in each part. The central part of the depression is filled with alluvial sediments. The basin has no surface outflow, but the presence of limestone in its western part results in underground karstic outflow to Lake Ohrid (which lies ca. 150 m lower than Macro Prespa).

Geology is one of the reasons the biodiversity of Prespa is very rich and diverse compared to its size, and includes many endemic taxa, as well as species and habitats of conservation concern. From a phytogeographical perspective, Prespa can be classified in the Balkan subzone of the Sub-

Photograph: ©Milan Vogrin

Dalmatian pelican Pelecanus crispus

Mediterranean vegetation zone. The areas with aquatic vegetation are of special conservation importance. The successive zones from the lakeshore to the watershed line on the mountains are forest formations (lowland woodland vegetation, deciduous oak forests, deciduous beech forests, and mixed beech-fir forests), sub-alpine vegetation of dwarf shrubs and alpine meadows. There is no complete inventory of the flora of all the Prespa area, however many endemic species of the Balkan Peninsula have been detected, whereas just on the Greek part of the Prespa basin, studies have recorded more than 1500 different plant species. Concerning the fauna, at least 27 species of local endemic aquatic invertebrates have been recorded (plus 23 others, endemic to the Balkans) and 18 species of local endemic terrestrial invertebrates (plus 14 others, endemic to the Balkans). The fish fauna is also very rich and includes 23 species recorded, out of which 8 are endemic to Prespa. In the 1960s Prespa used to be an ornithological paradise which attracted many visitors and scientists. Despite the land use and habitat changes that Prespa went though especially during the 1970s and 1980s, avifauna diversity still remains very rich. Nowadays, Prespa is considered a unique place, due to its richness but also due to the presence of significant populations of rare bird species of international importance, such as the Dalmatian Pelican, the Great White Pelican, and the Pygmy Cormorant. More specifically, the area hosts the largest breeding colony of Dalmatian Pelicans in the world, corresponding to 10% of the world's population, whereas Prespa, apart from the Danube delta holds the second mixed colony of Dalmatian and Great White Pelicans in Europe. Among the 60 mammals encountered in Prespa, species of conservation concern include the Wolf, the Brown Bear, the Otter and the Chamois. Additionally, a recent survey identified 25 species of bats, 15 of which breed in the area.



Photograph: ©Milan Vogrin

Phalacrocorax pygmeus

SEA TURTLES IN THE MEDITERRANEAN

by Lili Venizelou (MEDASSET)

Three of the seven species of sea turtles are found throughout the Mediterranean. The loggerhead (Caretta caretta) and green turtles (Chelonia mydas) nest here, and the huge leatherback (Dermochelys coriacea) is an occasional visitor. It is estimated that only about 339-360 green and 2.280-2.787 loggerhead turtles nest in the Mediterranean. Both species are classified as 'endangered' in the IUCN Red list of threatened species.

Sea turtles are cold-blooded, air breathing, egg laying reptiles that spend their mysterious lives at sea but return to the same beach they were born to deposit their eggs in the sand. They take 20-30 years to mature and may live up to 100 years. It is believed that only one in a thousand hatchlings will live to adulthood. Therefore the loss of even a single adult female is disastrous for their populations.

Extensive research and publicity, during the last decade, has increased public concern for turtle conservation. This has resulted in the drafting of national laws and regional legislation (EU Habitats Directive). Several more Nations have signed international conventions such as the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Action Plan for the Conservation of Mediterranean Marine Turtles, the Bonn Convention on the Conservation of Migratory Species of Wild Animals and CITES, the Convention on International Trade in Endangered Species. Lack of implementation of many of the above, due to ignorance and indifference of decision makers, authorities and individuals, leaves the marine turtles of the Mediterranean under serious threat of extinction.

Despite having travelled the world's waters since the age of the Dinosaurs, some 250 million years ago, their continuous presence in our seas and oceans is by no means guaranteed. Although they have natural preda-

Photograph: ©MEDASSET

Caretta caretta

tors, by far the greatest threat to these ancient mariners of the Mediterranean is mankind's irresponsible coastal development, pollution, collision with vessels, fisheries by-catch mortality, especially long-lines, gill nets and trawls that have a major impact on sea turtle populations. Additionally, marine turtles may be extremely vulnerable to the future impacts of climate change as sand temperature during incubation is the sex determinant of hatchlings and an increase of just 1 or 2 degrees Celsius from global warming could force embryonic sex-ratios towards female-dominance.

Researchers are just beginning to understand the important ecological roles sea turtles play in marine and coastal ecosystems. They are important indicators of the health of coastal and marine environments on both local and global scales. Green turtles graze on seagrass and algae making the seabed healthier and more productive, allowing commercially important species such as shrimp, lobster and fish to thrive. Leatherbacks and loggerheads consume jellyfish, which feed on fish larvae and are a threat to human activities such as tourism. Also, by depositing their eggs on beaches, they transport vital nutrients from the seas to coastal and inshore habitats. **About 100 different animal and plant species have been recorded living on the body of one single loggerhead, making them an entire mobile, living, breathing ecosystem.**

Marine turtles are emblematic flagship species that inspire coastal and marine conservation, and fascinate all people that view them as the symbol of all enigmatic oceanic creatures. Their intricate biological cycle, which for many is one of the wonders of nature, constitutes them an "umbrella" species for conservation, as their protection means the preservation of multiple habitats and linked ecosystems.

Sea turtles are also revered in many cultures all over the world. The Ancient Greeks considered them the sacred animal of Poseidon and Aphrodite and a symbol of long life, fertility and strength. During the past three decades they have become very important to human activities such as tourism, education and scientific research, providing employment, information services opportunities, as well as other economic and cultural benefits.

To protect sea turtles, researchers and NGOs are working towards reducing the deterioration or loss of critical habitats, decreasing by-catch mortality, creating and strengthening protected areas, lobbying for implementation of conservation measures, combating pollution, promoting ecotourism, public awareness and education.

Since 1988, MEDASSET is playing an active role in the study and conservation of sea turtles and their habitats throughout the Mediterranean, through environmental education, political lobbying, awareness raising and scientific research. Over 7,800 km of coastline have been surveyed, while projects and assessments have been carried out in Greece, Egypt, Italy (Sardinia), Lebanon, Libya, Syria and Turkey. A current MEDASSET research project focuses on "Monitoring and Conservation of Important Sea Turtle Feeding Grounds in the Patok Area of Albania" which combines traditional census techniques with satellite-based telemetry and genetic analysis, with the aim to identify the area as an important foraging habitat for sea turtles in the Mediterranean and promote the protection of the species in Patok under Albanian national law.

BIODIVERSITY AT THE CENTRE OF THE MEDITERRANEAN: THE CASE OF MALTA

by Vincent Attard (Nature Trust MALTA)

Biodiversity is the variation of life forms within a given ecosystem, biome, or on the entire Earth and is often used to measure the health of biological systems. Despite the important role that biodiversity plays in human life and for our planet, still today, economy plays a dominant role over environment and social issues.

Despite the important role that Biodiversity plays in human life and for our planet, the scenario where economy plays a dominant role over environment and social issues is the prevailing one. The Mediterranean is a region that has a very rich biodiversity but at the same time faces major problems with regards to pollution, unsustainable fishing, desertification, water issues, mass tourism and many other pressures including armed conflict that directly or indirectly affect biodiversity.

The Maltese islands are located right in the middle of the Mediterranean. Although very small and densely populated, its biodiversity, albeit struggling, maintains its place. Here, one witnesses the interface role of the islands since various species appear in the north or south shore of the Mediterranean. At the same time, the Maltese islands' biodiversity, isolated from the north or south mainland, has evolved and adapted over the years so that today they boast a large number of endemic species.

One of the predominant habitats found on the Maltese islands is the Garigue habitat, which is rocky with small pockets of soil. In this harsh and difficult environment one can find a large number of wild plants and animals all of which have adapted to the conditions. Plants like the Maltese Spurge (Euphorbia melitens), Yellow kidney vetch,

Orchid

Onion weed Asphodelus fistulosus

Photographs: ©Vincent Attard

Olive leaved germander are a few to be noted in the garigue especially on the island of Comino – a very small island with only one hotel and some 7 inhabitants. While talking of the garigue - one cannot forget the legally protected Mediterranean thyme (Thymus capitatus) which is the reason why Maltese bees produce excellent honey. It usually flowers in June-July changing the Maltese garigue from a dry brown color to a marvelous pink purple totally transforming the harsh landscape. Other habitats include the steppe which is closer to the cliffs on the western side of islands where one finds the endemic Darniella melitensis.

Small woodlands are also found with one of the most interesting trees being the national tree – the sandarac gum tree – (Gharghar in Maltese) "Tetraclinis articulate". This is a very rare Mediterranean tree found only in Malta, parts of Spain and parts of Morocco, proving once more the interface role of the islands between the North and South shores of the Mediterranean.

Maltese fauna is also adapted to the restricted space and often competes with the local human population and mass tourism for its survival. Some of the most interesting species are the Maltese wall lizards, appearing in four different varieties, the Painted Frog which is also found in Sicily, the Turkish Gecho, and four types of snakes - none of them poisonous. The fresh water crab is very rare, found only in three places near a year-round fresh water spring.

Malta also has a very rich marine biodiversity attracting a large number of diving tourists each year in places such as Xlendi Bay, Dwejra and the Blue hole, Zurrieq area, etc. A common algae, found in very shallow waters surrounding the Maltese islands, is the Sea Firs. This often form forests together with other algal assemblages. Malta is also surrounded by large communities of Posidonia meadows, which attract a lot of marine life. Posidonia meadows are today protected by the European Union.

Being close to two major nesting sites – Lampedusa and Libya, marine turtles are common visitors to the islands, especially during summer months. They are often seen in the channel between Malta and Sicily or south of the Islands.

Malta also attracts a large variety of birds that migrate over Italy, Sicily and Malta, on their way to or from the African continent. During spring and autumn, Malta becomes a paradise for bird lovers when large numbers of birds (including birds of prey) can be spotted on the island. However, over the last few years, birds that had never appeared in Malta are being recorded by ornithologists – a phenomenon attributed to climate change.

Climate change is currently contributing to the appearance of non indigenous species. These are also often referred to as alien species and are showing up both on land and in the sea. In the marine environment, more and more Red Sea species seem to be appearing in this central Mediterranean region. If we do not intervene to minimize the climate change process, we will become witnesses to major changes in biodiversity in the next few years, which in turn will adversely affect humans. Our duty is to safeguard biodiversity for future generations.

NON INDIGENOUS SPECIES IN THE MEDITERRANEAN SEA: DISTRIBUTION AND IMPACTS

by Gemma Quilez-Badia (WWF MEDPO, Spain)

The introduction of Non Indigenous Species (NIS) into terrestrial and freshwater habitats has been well documented since last century. However, the history, diversity, distribution and effects of marine invasions are poorly known for most coasts of the world, and there is a considerable lack of information about the invasions that occurred prior to the mid-19th century. However, it is well known that they constitute a major threat to marine ecosystems, with dramatic effects on biological diversity and productivity, habitat structure, and fisheries.

Historically, organisms have always been dispersed naturally intra- and inter-continentally by events such as plate tectonic movements, glacial episodes, ocean currents, by being attached to floating logs and debris, and other small- or large-scale natural events. Moreover, every ecosystem has a dynamic nature where it is common that populations vary, undergo local extinctions and are colonized by new immigrants. Thus, there is a misperception that humans are speeding up the phenomenon of natural invasions from non-indigenous species into new habitats around the globe. However, this dispersion has always been a slow process which was stopped by natural biological, geographical, physical or chemical barriers, thus preserving global biodiversity. But ever since humans started crossing the oceans for exploration, colonization and commerce, marine animals, plants and other organisms started being transported around the world's seas either intentionally or accidentally leading to a profound (but in many regions of the world largely still unrecognized) alteration of the diversity of many shallow coastal marine and estuarine communities.

The Mediterranean Sea, representing 0.8 % of the ocean surface (or 0.3 % of the ocean volume) and more than 7 % of the Earth's biodiversity, is one of the most affected seas in the world regarding NIS. To date, 573 non indigenous marine metazoan species or 903 total NIS have been recorded. Most of these NIS are thermophilic species which come from the Indo-Pacific or Indian Oceans, and have entered the Mediterranean through the Suez Canal. In the eastern Mediterranean, most of them have entered through the Suez Canal, whereas in the northwestern Mediterranean and in the Adriatic Sea mariculture and shipping are the main means of introduction. Moreover, the rate of introduction in the past two decades is outstanding: about 10 new NIS are introduced into the Mediterranean annually.

Examples on NIS in the Mediterranean such as the invasive ctenophore Mnemiopsis leidyi, native from the W Atlantic – which caused really serious problems to the ecosystem and fisheries in other previously-invaded regions e.g. was first recorded in Israel, Italy and Spain in 2009, indicating its establishment in the Mediterranean; and the range expansion of the tropical seagrass species Halophila stipulacea (Hydrocharitaceae) to the north-western Mediterranean, show the vulnerability of the marine ecosystems to the threat entailed with the introduction of NIS (aggravated by climate change) and illustrate the changing Mediterranean Sea biogeography. The presently well established east - west patterns in biotic ranges in the Mediterranean Sea will probably be replaced by north-south patterns in the not so distant future. Moreover, the increasing loss of richness and diversity of the native Mediterranean ecosystems due to NIS introductions is changing our Sea, to such an extent, that the Mediterranean as we were used to know it and its long-established description found in textbooks, is no longer there.

Moreover, the environmental status of marine waters has traditionally been evaluated considering the effects of pollution, eutrophication, habitat destruction and fisheries overexploitation, but we have to bear in mind that contrary to what happens with e.g. the pollution arising from an oil spill - i.e. the ecosystem can eventually recover from it - NIS invasion impacts are usually irreversible. Therefore, we need to better understand the interactions and dynamic links between "traditional" pollution, climatic changes and bio-invasions so we can start facing the challenge of dealing with difficult managing measures.

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DRAGONFLIES GO THIRSTY IN THE MEDITERRANEAN

by Thomais Vlachogianni (MIO-ECSDE)

Almost a fifth of the dragonfly species occurring in the Mediterranean region are threatened with extinction, according to the IUCN report on the "The status and distribution of dragonflies of the Mediterranean Basin". This fact underlines the extreme pressure posed on Mediterranean habitats since dragonflies are widely used in evaluating environmental changes in the long term (biogeography, climatology) and in the short term (biology conservation, water pollution, structural alteration of running and standing waters).

The most significant threats to dragonflies in the Mediterranean Basin are habitat destruction, degradation, pollution and mismanagement of water bodies. However, in recent years it has become evident that climate change driven impacts will affect dragonflies in the Mediterranean, given the fact that increased water demand together with a lower level of precipitation will result in the desiccation of brooks, a habitat on which many of the endemics are dependent.

Of the 165 Mediterranean dragonfly species 19% are classed as threatened: 3% are Critically Endangered, 8% are Endangered, and 8% are Vulnerable. A total of 58% are classified as Least Concern, while 16% are Near Threatened. Four species (2%), Agriocnemis exilis, Ceriagrion glabrum, Rhyothemis semihyalina and Phyllomacromia Africana are listed as Regionally Extinct.

With respect to the endemic species, the results are not encouraging. In fact, of the species endemic to the Mediterranean Basin, nine are either Vulnerable or Endangered, and only eight are of Least Concern. Furthermore, several species are only marginally present in the Mediterranean Basin.

Photograph: ©Thomais Vlachogianni

Spotted Darter Sympetrum depressiusculum

There is also another situation occurring amongst the northern and central European species, the alpine species, such as Somatochlora alpestris, S. arctica, Aeshna caerulea, Aeshna subarctica elisabethae, Nehalennia speciosa, Sympecma paedisca, and the various Leucorrhinia species. In this instance, although most of these species are classified as Least Concern on a global scale, their Mediterranean populations are sometimes under threat, due to their marginal and sometimes relict distribution in the region, and because of the fact that they are very sensitive to global warming and the desiccation of breeding habitats. According to the European Red List of Dragonflies (2010) half of the European species have a stable population trend; about a quarter of them are declining and about one tenth are increasing. The threats to European dragonflies vary regionally and over time and include large-scale land conversion, canalisation of rivers and water pollution (including eutrophication) were the main causes of decline, impacting especially species dependent on mesotrophic or running waters. Declines were particularly severe in Western Europe from the 1960s to the 1980s, when several species became extinct over large areas. Since then, improved water management and decreasing eutrophication have had a positive impact, and many of the species dependent on running waters have made a surprisingly fast recovery. Recently, there have been some indications that also species dependent on mesotrophic waters are starting to recover.

Although the conservation status of dragonflies in Central and Northern Europe has improved in recent decades, in the Mediterranean region the threats to dragonflies are increasing rapidly. The smaller distribution areas of most Mediterranean dragonflies, combined with the increasing threats, make that most threatened dragonflies are currently found in the Mediterranean Basin. This highlights the necessity for a set of actions to be undertaken by the Mediterranean countries to protect the global populations of these species. The selection and protection of key sites are essential to ensure the survival of these species and their ecological requirements need to be taken into account in the planning and management of water use, especially for agriculture purposes or infrastructure development.

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Photograph: ©Thomais Vlachogianni

Black-headed gull Larus ridibundus and Pygmy Cormorant Phalacrocorax pygmeus

MIO-ESCDE POSITION PAPER ON 'BIODIVERSITY IN THE MEDITERRANEAN REGION'

INTRODUCTION

Biodiversity is a crucial natural asset and component of terrestrial and marine ecosystems directly or indirectly providing or contributing to the maintenance of important ecosystem services and thus it is also inextricably linked with human well-being.

The Mediterranean region is considered to be one of the world's hotspots where exceptional concentrations of biodiversity occur. However, the region's unique wealth is critically endangered as biodiversity continues to decrease rapidly, due to human-induced pressures which result in the fragmentation, degradation and loss of habitat and extinction of species. As biodiversity loss proceeds our knowledge of its importance is growing, highlighting the fact that urgent actions should be undertaken at all levels to tackle this critical issue in the Mediterranean Region.

The present Position Paper is intended to present MIO-ECSDE's collective views on Biodiversity and to propose a set of actions that should urgently be taken in order to respond to biodiversity threats and challenges in the Mediterranean region, including threats from climate change. It also aims to assist MIO-ECSDE members in their advocacy and policy formulation efforts at regional, national and local level regarding biodiversity issues.

This paper has been drafted on occasion of the UN Year of Biodiversity and the regrettably poor results in achieving the objectives previously set to preserve biodiversity at International, European and Mediterranean level and particularly:

- to achieve the 2010 biodiversity target to significantly reduce the rate of biodiversity loss adopted by the 2000 UN General Assembly as a target of Millennium Development Goal 7, "to ensure environmental sustainability".
- to halt the decline of biodiversity in the EU by 2010 and to restore habitats and natural systems, a target adopted by EU Heads of State and Government in 2001. The new objective set aims to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, restore them insofar as feasible, while stepping up the EU contribution to averting global biodiversity loss.
- to fulfil the aims and targets of the Mediterranean Strategy for Sustainable Development (MSSD) and the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol) of the Barcelona Convention.

1. THE MEDITERRANEAN: A BIODIVERSITY HOTSPOT UNDER THREAT

The Mediterranean basin is recognised as a biodiversity hotspot. Its flora diversity is outstanding with 15000 to 25000 species, 60% of which are unique to the region. About one-third of the Mediterranean fauna is endemic (IUCN, 2008).

Although in many cases information is incomplete regarding biodiversity and related trends (in particular regarding marine biodiversity) in the Mediterranean region, there is enough data demonstrating the fact that biodiversity in the region is under severe risk.

According to the IUCN Red List of Threatened Species (2008) 19% of fauna species (amphibians, birds, cartilaginous fishes, endemic freshwater fishes, crabs and crayfish, mammals, dragonflies and reptiles) are threatened with extinction (5% Critically Endangered, 7% Endangered and 7% Vulnerable). In addition at least 16 irreplaceable species are already extinct, including some endemics such as the Hula Painted Frog Discoglossus nigriventer, the Canary Islands Oystercatcher Haematopus meadewaldoi and the Sardinian Pika Prolagus sardus.

2. DIRECT AND INDIRECT DRIVERS OF BIODIVERSITY LOSS IN THE MEDITERRANEAN REGION

According to the findings of the Millennium Ecosystem Assessment (2005), "changes in biodiversity due to human activities were more rapid in the past 50 years than at any time in human history, and the drivers of change that cause biodiversity loss and lead to changes in ecosystem services are either steady, show no evidence of declining over time, or are increasing in intensity". The Living Planet Report (WWF, 2010) and its findings, clearly demonstrate that the unprecedented drive for wealth and well-being of the past 40 years is putting unsustainable pressures on our planet. Specifically, one of the longest-running measures of the trends in the state of global biodiversity, the Living Planet Index (LPI)-which provides information on trends in the abundance of the world's vertebrates- shows a global decline of almost 30% between 1970 and 2007. The Ecological Footprint –which tracks the area of biologically productive land and water required to provide the renewable resources people use, and includes the space needed for infrastructure and vegetation to absorb waste carbon dioxide (CO_2)- shows also a consistent trend: one

of continuous growth. In 2007 the Footprint exceeded the Earth's biocapacity — the area actually available to produce renewable resources and absorb CO_2 — by 50 per cent. Overall, humanity's Ecological Footprint shows a doubling of our demands on the natural world since the 1960s. The Water Footprint of Production -which provides a measure of human demand on renewable resources- shows that 71 countries are currently experiencing some stress on blue water sources.

Human actions are fundamentally and to a significant extent irreversibly responsible for the changes caused to the diversity of life on Earth. The most important indirect drivers of biodiversity loss and ecosystem service changes in the Mediterranean region include overpopulation, urbanization, littorilisation and unsustainable modes of consumption, trade, tourism, etc. while the direct ones are marine, freshwater and terrestrial habitat fragmentation and destruction caused by overexploitation of natural resources, rapid and large scale land use changes, physical modification of and water withdrawal from rivers, damage to sea floors due to dredging, drilling and trawling, various types of pollution including biological/microbial pollution, introduction of non indigenous species, and unsustainable use/removal of wild living resources (hunting, fishing, etc.).

Of particular significance for Mediterranean biodiversity are climate change impacts since the region is predicted to become one of the most severely affected regions. Climate change models indicate that the Mediterranean region will experience decreasing rainfall, increasing land and sea temperatures as well as progressive desertification which will have an impact on both the distribution and survival of species (Bates, et al 2008). The poleward shift of flora and fauna induced by temperature rise will pose particularly dramatic problems for the Mediterranean's many islands, whilst also threatening the future prospects for the continued cultivation of many traditional staple crops and trees. Their eventual and progressive adaptation and/or replacement by other strains or cultivars are key coping strategies which are only beginning to be addressed in some countries.

3. THE MAIN LEGAL BIODIVERSITY RELATED INSTRUMENTS FOR THE MEDITERRANEAN REGION

Mediterranean countries have recognized the imperative need for biodiversity preservation and ecosystems balance, in order to avoid the severe consequences of biodiversity loss. This is clearly reflected in the fact that most countries within the Mediterranean region are contracting parties to major international/regional conventions, agreements and legislative frameworks that deal with or are closely related to biodiversity issues.

These legal instruments are presented in the table below.

Table B. Main legal instruments for the Mediterranean region aiming at the conservation of biodiversity

International Level	he UN Convention on Biological Diversity (CBD) and the CBD Cartagena Protocol on Biosafety; the Ramsar Convention on Wetlands of International Importance; the Convention on International Trade in Endangered Species of Wild Fauna and Flora; the Bonn Convention on the Conservation of Migratory Species of Wild Animals, including several Agreements (binding instruments) and Memoranda of Understanding (not binding) to conserve particular species relevant to the Mediterranean Region e.g. a special agreement under the Bonn Convention was made in 1996 for the Conservation of Small Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic area (ACCOBAMS).
Mediterranean Level	the Barcelona Convention for the Protection of The Mediterranean Sea Against Pollution (1976) and its relevant protocols such as the Protocol Concerning Specially Protected Areas and Biological Diversity (SPA/BD) in the Mediterranean (adopted in 1995); the Protocol on Integrated Coastal Zone Management (adopted in 2008).
European Level	the EU Birds Directive 79/409/EEC and the Habitats Directive 92/43/EEC establishing respectively Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs). The Natura 2000 network, an EU wide network of nature protection areas includes both SPAs and SACs; the Bern Convention on the Conservation of European Wildlife and Natural Habitats; the EU Marine Strategy Framework Directive; the EU Water Framework Directive; the European Landscape Convention; The Pan-European Biological; Landscape Diversity Strategy.

4. PROPOSED ACTIONS TO ADDRESS BIODIVERSITY LOSS IN THE MEDITERRANEAN REGION

In order to achieve greater progress towards biodiversity conservation and avert the accelerating, catastrophic loss of the variety of life forms in the Mediterranean region there is an urgent need for a set of actions and responses closely linked with ambitious short- and long-term post-2010 targets, aiming to tackle sufficiently and effectively the indirect and direct drivers of biodiversity loss in the Mediterranean region.

The initial step should be the setting of ambitious but realistic and measurable short-, medium and long-term targets. These targets should be based on current scientific evidence, taking into account related existing and emerging challenges and opportunities, while actively engaging all stakeholders.

The post-2010 overarching goal towards the protection of biodiversity in the Mediterranean should be coherent with commitments made by the Contracting Parties to the UN Convention on Biological Diversity at their 10th session (Nagoya, Japan 18-29 October 2010), while going beyond halting the loss of regional biodiversity by also including actions towards restoring its integrity and variety -thus ensuring the continued provision of goods and services related to it- and the considerable expansion of protected areas in the region.

The new Strategic Plan for Biodiversity for the period 2011-2020 "Living in harmony with Nature" may serve as a good basis for facilitating the mainstreaming of biodiversity into broader national and global agendas and by promoting actions at multiple entry points towards achieving the overall vision of the plan according to which "By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."

Herewith are listed MIO-ECSDE's general recommendations as well as those specific to the different fields of action:

4.1. General Recommendations

Increased efforts should be made towards the protection of terrestrial, freshwater and marine habitats and species by: tackling the major sources of pollution (solid waste, waste water, industrial emissions) including contamination and all forms of biological destruction by preventing the introduction of non-indigenous species; eliminating unsustainable fishing practices; stopping overharvesting of species; avoiding unsustainable agriculture, aquaculture and forestry practices, avoiding soil degradation activities, etc.

The current scope and effectiveness of existing legal instruments under the Barcelona Convention should be critically reviewed in this light and if necessary amended by the Contracting Parties to ensure effective protection.

In this respect, biodiversity protection concerns should be mainstreamed into all relevant national level sector policies and development plans.

In view of the looming threat of climate change, mitigation and adaptation responses should urgently be implemented. Healthy ecosystems can contribute in many ways to climate change mitigation, e.g. providing protection against natural hazards aggravated by climate change, limiting atmospheric greenhouse gas concentrations through terrestrial carbon storage, etc. In this context, Mediterranean peatlands and forests (above all those comprising mixed indigenous species, whose carbon storage potential much exceeds monostand plantations) should be recognized as important carbon sinks and increased efforts should be undertaken towards their protection and restoration.

The major potential contribution of soil carbon storage should be thoroughly reviewed and translated into a modification of current agricultural and land management practices. Full use should be made of research and project activities developed within existing institutions, international organizations and programmes. Wetlands and forests are also among the most useful systems for appropriate adaptation to climate change, reducing run-off, erosion and floods that will result from the expected increased frequency of extreme events (such as heavy rainfalls, melt of mountain ices caps, etc.). Plant cover, forests in particular, and wetlands are closely connected with the water cycle and the improvement of the quality and quantity of water, which is most vulnerable to climate change.

The prevention of fires and the promotion of sustainable grazing management are essential to achieve the effective conservation of forests as well as prevent the exacerbation of soil degradation and erosion in the region.

In addition there is also an apparent need to identify priority sites for biodiversity protection in the Mediterranean region and increase the number of protected habitats and the quality of protection in underrepresented Mediterranean areas and habitats of special ecological importance.

Reflecting the highlighted importance of biodiversity and the growing political commitment to halt its decline, increased governmental and EU funding needs to be earmarked for the establishment of a considerable number of new protected areas (core protected areas, buffers, corridors) in the region, while further biodiversity-related research, conservation, and uninterrupted management of established protected areas is needed, including systematic education and awareness raising activities.

4.2. Recommendations on policy/governance issues

There is a growing recognition that effective policies and concrete measures for biodiversity conservation need to be urgently undertaken with focus on the reduction of socio-economic pressures on biodiversity, either directly or through modification of their underlying driving forces.

4.2.1. *Synergies among existing policies, strategies and other instruments relevant to the Mediterranean region/ countries, as well as management and implementation tools need to be developed/forged ensuring to the extent possible the necessary coherence and greater alignment with the identified biodiversity related priorities.* In this sense, for example:

- the establishment of a network of marine conservation areas under EU's Natura 2000 aiming to halt the loss of biodiversity in the EU but also to enhance marine conservation and sustainable use objectives should be further strengthened by the timely implementation of the new EU Marine Strategy Framework Directive, calling for close cooperation among all countries sharing a marine region to achieve a good environmental status by 2020.
- the implementation of the MedPartnership's activities through the Mediterranean Marine Protected Area network (MedMPAnet) aiming to enhance the effective conservation of regionally important coastal and marine biodiversity features in areas under countries' national jurisdiction through the creation of an ecologically coherent MPA network in the Mediterranean region (as required by the SPA/BD Protocol), should be actively supported.
- the EU "Guidelines for the establishment of the Natura 2000 network in the marine environment" (2007) covering both the inshore and offshore marine environments should be considered in connection with ongoing regional strategies set through the Barcelona Convention's SPA/BD Protocol and its Protocol on Integrated Coastal Zone Management (ICZM) adopted in 2008.
- elements of the Natura 2000 Network should also be used as a source of inspiration for the systematic protection of terrestrial habitats and species in the South Mediterranean countries, eventually through an expansion of the SPA/BD Protocol to cover terrestrial biodiversity.
- The development and restoration of ecological corridors which provide connectivity among protected areas, as well as the establishment of transboundary protected areas/biosphere reserves should be actively promoted in the Mediterranean region.

4.2.2. *Biodiversity protection concerns and measures should be mainstreamed in all relevant sectoral policies and development plans.*
Although some progress can be identified in this direction, for example at the EU level through the integration of biodiversity concerns into community policies and instruments such as the Common Agricultural Policy, the Water Framework Directive, the Marine Strategy Framework Directive, and at the wider Euro - Mediterranean level (UfM) through the implementation of de-pollution Initiatives such as the "Horizon 2020" initiative and the preparation of a Strategy on Water in the Mediterranean, increased political will is needed to enhance synergies and translate agreements into practice.

4.2.3. *New instruments/strategies should be put in place to reinforce biodiversity conservation, where relevant.*
Although there are many legal tools and instruments already in place aiming at the conservation of biodiversity in different policy areas there are still "gaps" in the regulatory framework that need to be addressed.

For example, at EU level, it seems very important to immediately advance (under the current EU Belgian Presidency) the discussion on the adoption of a Soil Framework Directive and achieve a compromise with the countries opposing its adoption. In order to achieve EU biodiversity targets it is vital to set out common principles for protecting soils across the EU. Non EU countries should also be encouraged to apply the same principles for a comprehensive regional approach to soil protection.

On the wider Mediterranean level a common strategy by governments of the region and competent international organisations (UN bodies, EC, etc.) to prevent and abate forest fires should be established. This recommendation has been proposed along with others more than 20 years ago within the framework of the Athens Declaration on forest fires (1987) and still remains very topical and urgent in view of the annual loss of Mediterranean forests and their biodiversity due to fires.

The EU Forest Action Plan (2007–2011) and its proposals for action, together with those outlined in the Declaration and the five Resolutions of the Fourth Ministerial Conference on the Protection of Forests (2003), represent a good example which could inspire a system of joint sustainable forest management in the Mediterranean, also in line with the CBD Expanded Programme of Work on Forest Biological Diversity and other global forest-related commitments.

4.2.4. *Adequate assistance in terms of financial and capacity building support should be provided to countries in the region for the implementation of biodiversity conservation measures.*
Additional support should be provided to the developing countries of the region for revising NBSAPs to include the integration of biodiversity targets into sectoral planning and policies. It is important to ensure that greater emphasis be given to environmental mainstreaming and to policy and institutional changes rather than projects.

4.2.5. *Every environmental policy in the Mediterranean countries should be developed in such a way to ensure the implementation of the Ecosystem Approach (ECAP).*
This approach was adopted by the Contracting Parties to the Barcelona Convention at their conference in Almeria in 2008 and aims at improving the way human activities are managed for the protection of the marine environment. This could be a starting point for a larger scale implementation of the ECAP towards the integrated management of land, water and living resources promoting conservation and sustainable use in an equitable way whilst progressively incorporating measures relating to climate change mitigation and adaptation.

The primary value of the Ecosystem Approach is that it puts people and their natural resource use practices squarely at the centre of decision-making. Because of this, the Ecosystem Approach can be used to seek an appropriate balance between the conservation and use of biological diversity in areas where there are both multiple resource users and important natural values.

4.2.6. *Communication, coordination and cooperation within the Mediterranean region on protected areas should be enhanced.*
Regional and sub-regional cooperation and networking in the fields of protected areas management should be promoted and facilitated, especially in the North African and Middle East countries, where most programmes are entirely country driven and there is lack of effective mechanisms for sharing experiences and knowledge, while trans-boundary cooperation and coordination is minimal.

4.3. Recommendations on awareness raising, education & communication

One of the key issues that need to be effectively addressed in the Mediterranean is the lack of awareness of the wider public and stakeholders about the role of biodiversity in relation to the survival and well-being of the people of the region. A recent EC report on the "Attitudes of Europeans towards biodiversity» confirms this need which is very obvious for the EU Mediterranean countries – expected to reflect also the rest of the region - and reveals that communication and outreach activities should become a high priority.

In this respect, combination of the United Nations Decade of Education for Sustainable Development (UNDESD) with the International Year of Biodiversity offers a unique opportunity and can be used to draw public attention to the value of biodiversity and the need to conserve it, as well as on the opportunities derived from its conservation and sustainable use. Biodiversity has been identified as one of the key areas of Education for Sustainable Development (ESD) in the framework of the ongoing UN Decade (2005-2014) on ESD, where MIO-ECSDE through its MEdIES programme is very active.

4.3.1. *The wider public should be fully informed about the real implications of biodiversity losses for their daily lives and should be encouraged to commit themselves towards the conservation of biodiversity through various activities.*
In this context, MIO-ECSDE will continue its long-standing efforts to enhance awareness raising on biodiversity issues through education (formal, informal and non formal), communication and capacity building actions.

4.4. Recommendations on research and monitoring

Scientific information on biodiversity, its value, functioning, status and trends, and the consequences of its loss is constantly being improved but there still are major gaps and deficiencies in the existing knowledge.

4.4.1. Mediterranean region research needs to focus on the assessment of the status and the underlying trends of threatened ecosystems which underpin conservation planning at regional and national level.
This will lead to the strengthening of the science - policy interface and the identification of emerging issues and will contribute substantially to effectively addressing biodiversity threats and driving forces.

4.4.2. Reliable, well-validated, easy to apply and robust tools (since the Mediterranean countries have limited human and financial resources) to measure the different components of biodiversity should be developed to achieve efficient assessment and monitoring.
It must be emphasized that the lack of scientific data or the existence of fragmented knowledge should not be used as an argument for inaction when it comes to the conservation, protection or management of habitats and species. As many Mediterranean countries cannot afford to carry out comprehensive research for all habitats and species a different pragmatic and effective approach is needed and therefore this should be thoroughly explored and addressed.
In 2008 the European Union published "The biodiversity action plan: Halting the loss of biodiversity by 2010 – and beyond" aiming to assist Members States in halting the loss of biodiversity. In this action plan are highlighted the main biodiversity related gaps in knowledge and research need and a set of very useful recommendations are being proposed which can be revisited and implemented for both EU and non-EU Mediterranean countries.

4.4.3. Research approaches should be broadened to ensure the integration of social sciences and economics with biodiversity research.
As in many other cases, the understanding of the link between socio-economic and cultural drivers and biodiversity pressures and impacts is incomplete and the related information is very scattered. An effort to connect marine biodiversity and ecosystem services with their economic value in order to highlight their importance for the sustainable development of the Mediterranean riparian countries was made by UNEP/MAP's Blue Plan in its report on "The economic value of sustainable benefits from the Mediterranean Marine Ecosystems". Such research needs to be enhanced and deepened.

MIO-ECSDE AT THE TENTH MEETING OF THE CONFERENCE OF PARTIES (COP-10) TO THE CONVENTION ON BIOLOGICAL DIVERSITY, 18-29 OCTOBER, NAGOYA, JAPAN.

MIO-ECSDE represented by its Senior Adviser Ms. Vanya Walker-Leigh (Nature Trust Malta) participated at the 10th Meeting of the Conference of Parties (COP-10) to the UN Convention on Biological Diversity, held on 18-29 October, in Nagoya, Japan. Ms. Walker-Leigh not only disseminated MIO-ECSDE's recently developed position paper on "Biodiversity in the Mediterranean region», but participated in the work of the NGO network - the CBD Alliance - as well as of the Women's caucus, and attended conference sessions, side events and press briefings. Moreover, MIO-ECSDE was one of the 20 NGOs selected by the Alliance to take part as observers at the 3-day High Level Segment (27-29 October) attended by 122 ministers of the environment and five heads of state. This group of NGOs was also invited to the four official receptions organized during the Segment by the Government of Japan.

A report on the outcomes of this conference and their implications for biodiversity policies in the Mediterranean will be published in the next issue of Sustainable Mediterranean.

MIO-ECSDE Profile

The Mediterranean Information Office for Environment, Culture and Sustainable Development, is a Federation of Mediterranean Non-Governmental Organizations (NGOs) for the Environment and Development. MIO-ECSDE acts as a technical and political platform for the intervention of NGOs in the Mediterranean scene. In cooperation with Governments, International Organizations and other socio-economic partners, MIO-ECSDE plays an active role for the protection of the environment and the sustainable development of the Mediterranean Region.

Background

MIO-ECSDE became a federation of Mediterranean NGOs in March 1996. Its roots go back to the early 80s, when the expanding Mediterranean membership of the European Community encouraged the European Environmental Bureau (EEB) to form its Mediterranean Committee supported by Elliniki Etairia (The Hellenic Society for the Protection of the Environment and the Cultural Heritage). The Mediterranean Information Office (MIO) was established in 1990 as a network of NGOs, under a joint project of EEB and Elliniki Etairia and in close collaboration with the Arab Network of Environment and Development (RAED). The continuous expansion of MIO-ECSDE's Mediterranean NGO network and the increasing request for their representation in Mediterranean and International Fora, led to the transformation of MIO-ECSDE to its current NGO Federation status. Today it has a membership of 112 NGOs from 26 Mediterranean countries.

Our Mission

Our mission is to protect the Natural Environment (flora and fauna, biotopes, forests, coasts, natural resources, climate) and the Cultural Heritage (archaeological monuments, and traditional settlements, cities, etc.) of the Mediterranean Region. The ultimate goal of MIO-ECSDE is to promote Sustainable Development in a peaceful Mediterranean.

Major tools and methods

Major tools and methods used by MIO-ECSDE in order to achieve its objectives are the following:

- Promotion of the understanding and collaboration among the people of the Mediterranean, especially through their NGOs, between NGOs and Governments, Parliaments, Local Authorities, International Organizations and socio-economic actors of the Mediterranean Region.
- Assistance for the establishment, strengthening, co-operation and co-ordination of Mediterranean NGOs and facilitation of their efforts by ensuring the flow of information among relevant bodies.
- Promotion of education, research and study on Mediterranean issues, by facilitating collaboration between NGOs and Scientific and Academic Institutions.
- Raising of public awareness on crucial Mediterranean environmental issues, through campaigns, publications, exhibitions, public presentations, etc.

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