# 1STCIBZH-2014

1st INTERNATIONAL CONGRESS ON BIODIVERSITY AND WETLAND

Web : www.univ-eltarf.dz
To Contact us : 1stCIBZH@gmail.com
(BP 73, SNV. El-Tarf 36000)

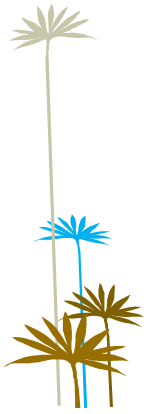
1stCIBZH

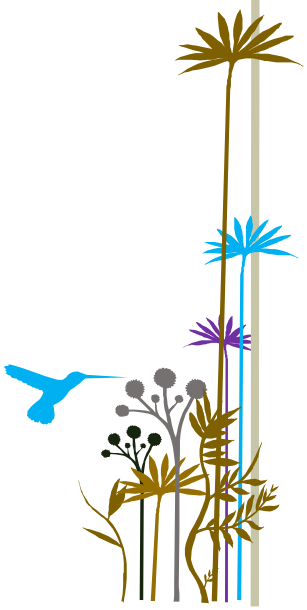
# 1st INTERNATIONAL CONGRESS ON BIODIVERSITY AND WETLAND

Knowledge, development, and health management

UNIVERSITY EL-TARF

ALGERIA





# CONTEXT

The concept of biodiversity, "the man who threatens, the man who covets the man who depends for a sustainable development of its societies " "Robert Barbault. 1943-2013"

Protect and preserve biodiversity is a moral duty cultural heritage interest, dentity and history of our country, the instrumental values, related to resources and useful services that biodiversity provides to human societies.

The University of El-Tarf, organizes the Ist International Congress on Biodiversity and wetlands, to raise awareness, meet and exchange among researchers and students, complementarity between research management and conservation.

These doors open days for all young researchers interested in these issues, an opportunity to present their latest results and  and provide managers.

Objective :

- Scientic awareness on the importance of safeguarding biodiversity as well as the threats to it.
- Consider the action plans for the conservation of biodiversity.
- This conference will allow us to share and discuss issues addressed by Algerian and foreign scientists, tried to answer the call of May 22, Biodiversity Day, a major concern for years in Algeria and throughout the periphery Euro-Mediterranean.

Habitat conversion, invasive foreign species, overex-ploitation, climate change and pollution and anthro-pogenic pressures all orders are all threats to the health of wetlands and therefore their biodiversity "

The National Park of El Kala is internationally recognized, classified RAMSAR zone, is an undeniable wealth in flora and fauna, Linked to the Mediterranean by its watersheds, his conservation is the preoccupation of many scientists algerian and foreign partners. After the declaration '2010 International Year of Biodiversity ' by the General Assembly of the United Nations, a convention on biological diversity and ambitious goals.

At the summit in Rio in 1992, more than 150 governments have signed agreements devoted to the maintenance and sustainable use of biodiversity.

The Convention's three objectives.

- To concerve the biodiversity.
- Use of biological diversity in a sustainable manner.
- Share the benefits of biological diversity fairly and equitably

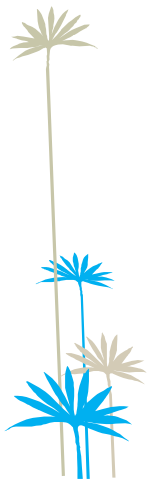
Topics Include :

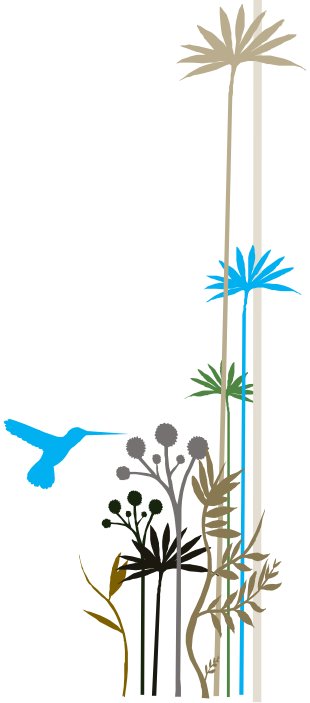
Workshop I: biodiversity: functioning, management and conservation.. Biodiversity and sustainability.

-Exchange of experiences on the management and enhancement of biodiversity, implementation actions for adaptation or mitigation of climate change. What are the actions that have been con-sidered successes or failures? Populations can they cope with climate change? How to manage the risks of climate change?

- Impacts of climate change on flora and fauna.
- Issues of sustainable management of marine ecosystems and in interaction with terrestrial ecosystems.

Workshop II: WETLAND (Pollution, Protection and Management).





Laboratoire de Recherche sur la Biodiversité
et la Pollution des Ecosystèmes

**MSciD**

**MATERIEL SCIENTIFIQUE ET DIDACTIQUE**
**Produits et Réactifs de Laboratoire**

**ISGA Institut Supérieur de Gestion Annaba**

**ETS/PROMECH ANNABA**
**ETS/URBAIN ANNABA**

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# 1stCIBZH-27, 28 & 29th May-E-Tarf-University

**Organizing Committee:**

A. B MAMMERIA (Conference Chair 1st CIBZH)

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M. BELDI
N. BENRACHOU
S. BESSATI
R. BOUKHRIS
Z. BOUDJADI
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# *Scientific Committee*

PRESIDENTS :

*Rutger DE WIT & Wilia KHATI.*

Professeur. Montpelier II University. France
Dr. University of El-Tarf. Algeria

FRANCE :

*René LAFONT (editor of the journal SZF. Paris)*
*Pierre ELIE (Directeur de recherche. Bordeaux).*
*Patrice FRANCOUR (Professeur. Nice University)*
*Jean-Michel BERENGER (URMITE- Marseille)*
*Saber KHELAIFIA (Dr. URMITE- Marseille)*
*Louis BRIGAND (Pr. Brest).*
*Alain SALVI (Dr. Univ. Loraine. I'IUT de Thionville).*
*Patrick TRIPLET (Dr. Abbeville OMPO/Syndicat Mixte Baie de Somme).*

*BELGIQUE :*

*Sylvie GOBERT (PhD. Univ. Liège).*

*ITALIE :*

*Alberto BASSET (Pr. Univ. Solento, editor of Transitional Water Bulletin-Italie)*

*GRECE:*

*Christos ARVANITIDIS (Dr. Hellenic Centre for Marine Research).*

*SUISSE :*

*Marc HUFTY (Pr. Genève).*

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*Fatiha BAKARIA (Dr. University El-Tarf)*
*Zehaira BOUDJADI (Dr. University El-Tarf)*
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*Ahmed KERFOUF (Professor. Oran University)*
*Boualem MAYACHE (Dr. Univ. Jijel)*
*Riadh MOULAI (Professor. Bejaia University)*
*Moussa HOUHAMDI (Professor. Guelma University)*
*Abdelkrim SIBACHIR (Professor. Batna University)*
*Zihed BOUSLAMA (Profesorr. University Annaba)*
*Feriel BOUKHROUFA (Dr. University Annaba)*
*Idir BITAM (Dr. Boumerdes University. Alger)*
*Mohamed Cherif MAAZI (Dr. Univ. Souk-Ahras)*
*Menouar SAHEB (Dr. Univ. Oum El-Bouaghi)*
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*Wahid REFES (ESSMAL. Algiers)*
*Menouar SAHEB (Dr. Univ. Oum El-Bouaghi)*
*Abdelkrim SIBACHIR (Professor. Univ. Batna)*

TUNISIE :

*Raouf BESBES (ATS mer. Tunisia)*
*Djamila BENSOUISSI (Tunis)*

MAROC :

*Mohamed RAMDHANI (Professor. Maroc)*

# DE WIT Rutger

Directeur de recherche
CNRS

Institute: UMR 5119
“Ecologie des Systèmes marins côtiers (Ecosym)”.

Université Montpellier 2, CNRS, IRD, Ifremer, Université Montpellier 1

Date place of birth: 16 June 1958, Amsterdam, Netherlands

Nationality: Dutch

Email: rutger.de-wit@univ-montp2.fr

EQUIPE : BENTHOS ET SES INTERACTIONS AVEC LE PELAGOS (BIP)

LABORATOIRE "ECOLOGIE DES SYSTEMES MARINS COTIERS". UNITE DE RECHERCHE UMR 5119. CC093 BATIMENT 24.

*Rutger de Wit was recruited by the CNRS in 1993 as a researcher and was nominated Directeur de Recherche in 2007.*

*He is seconded to the Ecosym laboratory, which is working on the ecology of coastal marine systems at the University of Montpellier.*

*In this laboratory he coordinates the team working on the Benthos and their interactions with the Pelagos. Rutger de Wit has been trained as a specialist of the microbial ecology and biogeochemistry of benthic systems.*

*He has focused his research on photosynthetic benthic biofilms and on the interactions among micro-organisms and seagrasses in coastal lagoon systems. Progressively, he has widened the scope of his collaborative research on the ecology of coastal lagoon systems, which he has studied as socio-ecosystems. He also contributes to the science-management interface and works in close collaboration with coastal lagoon managers in South France. He has coordinated various European and national multidisciplinary research projects including ROBUST (1996-2000), Liteau Bassin d’Arcachon (2000-2003) et PNEC-chantier lagunes (2007-2009).*

*He has served as an editor on the boards of Aquatic Microbial Ecology, Transitional waters Bulletin and Microbiology (SGM, UK from 1997-2004). He is member of several scientific advisory boards of coastal lagoon reserves in South France. At the university of Montpellier he holds the responsibility for the Master teaching modules on microbial ecology and ecology of coastal lagoon systems.*

hhttp://www.ecosym.univ-montp2.fr/

# Alberto BASSET

Full Professor of Ecology at University of Lecce - ITALY

*Birth date: 24 February 1956 Rome. Italy*

*Address: Department of Biological and Environmental Sc Ecotekne Center. University of Lecce , 73100 Lecce - ITALY*

Tél +39-0832298600;
fax +39-0832298722;
e.mail: alberto.basset@unile.i

Prof. Alberto Basset has been Professor of Ecology since 2004 in the Department of Life Sciences and Biological and Environmental Technologies of the University of Salento.

His main research interests are:

*Structure and function of ecosystems: organization and biodiversity structures and functionality of the processes. Competition intra-and inter-specific and relations of competitive coexistence.*

*Processes of decomposition of organic detritus in aquatic environments and their interconnections with the streets of grazing.*

*Ecological implications of body size measures: theoretical aspects and applications to bio-monitoring of health status of aquatic freshwater and marine systems.*

*Mechanisms of organization of phytoplankton communities of coastal marine and transitional ecosystems: the role of the mechanisms of coexistence related to individual body size.*

*His studies on aquatic ecosystems with functional and evolutionary approach, have produced more than 100 scientific publications, some of which the most 'prestigious international journals in ecology, as Aquatic Conservation, Ecology, Ecological modeling, Estuarine Coastal and Shelf Science, Evolution, Functional Ecology; Hydrobiologia, Oecologia, Oikos.*

*In the past year review of work performed for the following international journals: Ecology Letter, Marine Ecology Progress Series, Oikos, Aquatic Conservation, Hydrobiologia. It 'Editor-in-Chief of the journals Transitional Transitional Water and Water Bulletin Monographs.*

Institutional Activities

*President of the Observatory on Ecology and Health of Mediterranean Ecosystems*

*Director of the Museum on Ecology of the Mediterranean Ecosystems*

*Coordinator of the PhD Programme in Ecology and Climate Change of the University of Salento*

*Vice President of the Ecological European Federation*

*President of the Italian Society of Ecology*

Transitional Waters Bulletin

# *Christos ARVANTIDIS*

Institute of Marine Biology and Genetics, Hellenic Centre for Marine Research, Thalassokosmos, Former US Base at Gournes,

Heraklion, 71003, Crete, Greece.

Nationality: Greek
Date of birth: 04/03/1966

Tél : (30-2810) 337748
Fax : (30-2810) 337870

links:
http://www.marbef.org
www.e-taxonomy.eu
www.alter-net.info
my webpage: www.hcmr.gr

*Christos ARVANITIDIS is senior researcher at the HCMR. Institute of Marine Biology and Genetics*

*Hellenic Centre for Marine Research.*

He is marine biologist and he is specialist of Polychaete Annelids. He has published more than 100 publications of which 39 publications in international peer review journals. He has participated in 45 conference and workshop publications (EU and international level) and 4 training guides. The total impact factor of his publications reaches 40.57 and his H-index is at 10. He maintains 3 marine biodiversity web sites and organized 17 conferences and workshops. He taught undergraduate Courses (Zoology and Marine Biology lab courses) and the Department of Zoology of the Aristotelian University of Thessaloniki, and participated in several postgraduate seminars between 1994 and 2010 in the fields of Biological geography ; Multivariate techniques in community ecology ; Marine Biodiversity ; Community analyses.

He raised 4 educational grants (EU funding), collaborated in 35 projects of which 3 were educational projects, and coordinates 5 of them. He is scientific responsible (for HCMR) in 15 projects.

# *Michel Métais*

LPO Ligue pour la Protection des Oiseaux

Fonderies Royales

BP 90263

F-17305 ROCHEFORT CEDEX

Universitaire, titulaire d'un DEA de biologie animale à l'Université de Poitiers

Ornithologue, spécialiste de la gestion des milieux naturels, écologie terrestre et littorale

## Profession

Directeur général de la LPO Ligue pour la Protection des Oiseaux (46100 adhérents, 166 salariés), représentant en France de BirdLife International

Responsable de la gestion de l'association dans les aspects administratifs, financiers et sociaux et de la vie courante

Expérience dans l'organisation de manifestations, colloques de niveau national et régional (exemple : colloque « Agriculture et Biodiversité », séminaires RAMSAR…)

Expérience dans la conduite de la politique de conservation de la nature de l'association :

Montage de dossiers d'acquisition foncière

Initiateur de la création d'espaces naturels protégés (réserves naturelles nationales et régionales, RAMSAR…)

Montage de programmes européens

Participation a des colloques et conférences sur les accords internationaux en tant qu'ONG

## Responsabilités et représentations

Président de l'ATEN, Atelier Technique des Espaces Naturels

Fondateur et secrétaire de l'association « RAMSAR France »

Administrateur de l'Office National de la Chasse et de la Faune Sauvage

Représentant LPO au Conseil National de Protection de la Nature (CNPN)

Tél. : +33546821234 / +33608171677

e-mail : michel.metais@lpo.fr

# *René LAFONT*


René Lafont

Professeur émérite à l'Université Paris 6

UPMC, Laboratorie BIOSIPE, Case 29, 7 Quai Saint Bernard, 75005 PARIS, France

Directeur des Publications et vice-président de la revue (SZF) Institute: Paris University

Email:

lafont.rene@wanadoo.fr

ZOOLOGIE - EVOLUTION - BIODIVERSITE. ZOOLOGY - EVOLUTION - BIODIVERSITY.

FONDEE EN 1876

SIEGE SOCIAL : institut océanographique. 195, Rue Saint-Jacques - 75005 Paris

(C.C.P. : Paris 1021-83 Z).

EXPÉRIENCE

*Responsabilités administratives et scientifiques*

*Edition de revues scientifiques :*

## *Comité Scientifique*

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D. ANXOLABEHERE (Paris, France)
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J. CHALINE (Dijon, France)
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R. STRATHMANN (Friday Harbor, U.S.A.)
P. TONGIORGI (Modena, Italie)

RAPPEL HISTORIQUE

*La Société Zoologique de France fut fondée en 1876 par un groupe d'amateurs réunis chez un chasseur de fauves, quai des Grands Augustins à Paris, dans le but de publier et de faire connaître les travaux spécialisés de ses membres. La Société Zoologique de France a fêté, il y a environ 30 ans, son centenaire en réunissant, également à Paris, à l'Institut Océanographique, à l'Ecole Normale Supérieure et au Laboratoire d'Evolution des Etres Organisés, la quasi totalité des Zoologistes Français autour de plusieurs centaines de démonstrations, conférences, exposés synthétiques et tables rondes.*

# *Patrick TRIPLET*

OMPO/Syndicat Mixte
Baie de Somme

1, place de l'Amiral
Courbet 80100
Abbeville

Docteur en écologie animale (Université Paris VI) : 1989

## Orientations générales du parcours professionnel

Appliquer les résultats de recherches scientifiques de haut niveau à la gestion des aires protégées
Aider les responsables de sites naturels des pays en voie de développement à mieux gérer leurs parcs nationaux, en les initiant aux méthodes modernes de gestion et en leur apprenant à accueillir le public et ainsi à augmenter le revenu des populations locales.

## Profession actuelle

Ingénieur en chef et directeur scientifique au Syndicat Mixte Baie de Somme, Grand Littoral Picard

Directeur de la réserve naturelle de la Baie de Somme, de la réserve d'avifaune du Hâble d'Ault et de la Maison Ramsar de la Baie de Somme.

*Missions d'expertises et de conseil*

*Coordinateur du réseau Spatule d'Eurosite (2003-2012)*
Consultant auprès de l'Association Oiseaux Migrateurs du Paléarctique Occidental depuis 1995
***Consultant auprès de l'UNESCO (Centre du Patrimoine Mondial)***
Consultant auprès de la Convention de Ramsar
Conseiller permanent de la Direction des Parcs Nationaux du Sénégal
Expert auprès de la Direction des Parcs Nationaux de Tunisie

Tél. : +33676722934
Fax :
e-mail : patrick.triplet1@orange.fr

# SPEAKERS 1ST DAY (TUESDAY, 27TH MAY, 2014)

8.00-9.00 Registration and welcome to Participants

9.00-9.20 Opening 9.00-9.20

**Chairman Patrick Triplet**

9.20-9.40

1. **Issues biodiversity coastal lagoons wetlands and their peripherals**

Pr. Rutger de Wit
Directeur de recherche CNRS
UMR 5119. "Ecologie des Systèmes marins côtiers (Ecosym)". University Montpellier 2, CNRS, IRD, Ifremer, University Montpellier 1, Montpellier, France

9.40-10.00

2. **Ecosystem property determinants of biodiversity organisation in lagoon ecosystems**

Pr. Alberto Basset
Department of Biological and Environmental Sciences and Technologies, University of the Salento, Lecce, Italy

10.00-10.20

3. **Bacterial diversity in a Mediterranean lagoonal complex deduced by 16S rDNA next generation sequencing: providing metagenetics data for the ecological description, biogeography and environmental assessment of the habitat**

Dr. Christos Arvanitidis
Institute of Marine Biology, Biotechnology and Aquaculture, Hellenic Centre for Marine Research, Thalassocosmos, 71003 Heraklion, Crete, Greece
Biology Department, University of Crete, Voutes University Campus, 70013 Heraklion, Crete, Greece
Department of Biology, University of Patras, 26504, Rio, Patras, Greece.

10.20-10.40

4. **Which interest to create an association of Ramsar sites in the country?**

Michel Metais
General Manager
Ligue pour la Protection des Oiseaux LPO

Debate - Break

**Chairman Rutger De Wet**

11.00-11.20

5. **Designing and implementing protected areas for waterfowl**

Dr. Patrick Triplet
OMPO/Syndicat Mixte Baie de Somme
1, place de l'Amiral Courbet 80100 Abbeville. France

11.20-11.40

6. **Stress, hormesis and adaptogenic substances**

Pr. René Lafont
Sorbonne University s, UPMC, IBPS-BIOSIPE, Case 29, 7 Quai Saint Bernard, 75005 PARIS, France

11.40-12.00

7. **Welands and their biodiversity in Morocco: Status and prospects of preserving endangered species and landscapes**

Pr. Mohammed Ramdani
University Mohamed V Agdal, Institut Scientifique, Department of Zoology & Animal Ecology, Rabat, Maroc

12-00-12.30 : Debate - Break

**Chairman René Lafont**

14.20-14.40

8. **Application of remote sensing for the Mediterranean wetlands monitoring: experience from the GlobWetland II project.**

Dr. Anis Guelmami
Research centre for the conservation of Mediterranean wetlands www.tourduvalat.org. Mediterranean Wetlands Observatory. Tour du Valat http://www.medwetlands-obs.org/ Tour du Valat Research Centre, Le Sambuc, 13200 Arles, France

14.40-15.00

9. **The rebirth of culture in microbiology and the environment**

Dr. Saber Khelaifia
Research Unit on Emerging Infectious and Tropical Diseases (URMITE) CNRS UMR 6236 - IRD 198
Faculty of Medicine. 27, boulevard Jean Moulin. 13385 Marseille Cedex 5. FRANCE

15.00-15.20

10. **Current situation of aquaculture in the Bizerta lagoon**

Meher Bellakhal, Mouna Fertouna Bellakhal, Jamel Ksouri.
Unity of de Research: Inst Sup of Bizerte. B.P. 15, Errimel, 7080 Bizerte, Tunisia.

15.20-16.00

11. **The Mediterranean Sea is empty of its fish or how it will be directed to an irreversible collapse of terrestrial ecosystems.**

Pr. Djebar Abdallah Borhane.
Laboratory of Ecobiology of Marine and Coastal Zones. Department of Marine Sciences,
Faculty of Sciences, University of Badji Mokhtar - Annaba. Algeria.
djebarborhane2000@yahoo.fr

16.00-16.20-Debate
Break

**Chairman Mahieddine Boumendjel**

17.00-17.20

12. **Biodiversity of the macro-invertebrates of the west Algerien wetlands.**

Kerfouf. A, Boukhari. Benamara. M, Koudache. F, Toumi. F
Univ-Sidi Bel Abbès - Faculty of science and nature - Department of sciences and environment - Algeria.

17.20-17.40

13. **Valeurs ornithologiques des zones humides urbaines et péri-urbaines de l'Algérie.**

Houhamdi Moussa, Boudraa Wahiba, Aberkane Meriem, Chettibi Farah, Bakhouche Badis, Draidi Khalil, Mammeria Aicha Beya, Bouslama Zihad.
Laboratory of Biology, Water & Environnement LB2E, Department SNV, Faculty SNV-STU, University 8th may 1945 - Guelma (Algeria).

17.40-18.00

14. **Le développement social en contexte de conservation de la biodiversité : à la fois une approche pour le renforcement de l'appropriation des populations et une finalité**

Serge SOLO
WWF Madagascar and Western Indian Ocean Programme Office / ssolo@wwf.mg / www.wwf.mg
www.panda.org

18.00-18.20-Debate

# TPIC 2ND DAY (28TH MAI 2014) Amphi A

## WETLAND : Pollution, Protection and Gestion: Oral

### CLIMATIC Change

**Chairlady Wilia Khati**

09.00-09.20

**1. Impacts of water management and climate change on the ecosystem of the Oued Seybouse (NE Algeria).**

L.Djabri, A.Hani.
Laboratoiry Ressource in water and Dev. Durable. Department of Geology. University of Annaba.
Email : djabri_larbi@yahoo.fr

09.20-09.40

**2. Variability and Evolution decennial temperatures and surface salinity in the Mediterranean**

Nacef Lamri, Bachari N.E.Islam, Boubnia Riad, Bouda Abderrahmane.
L.O.B.E.M., Faculty of Biological Sciences, University of Science and Technology Houari Boumediene (USTHB), El-Alia, POBox32, Algiers, Algeria.
E-mail : Nacef_l@yahoo.fr

09.40-09.50

**3. Blooms of toxic Cyanobacteriai in freshwater in East of Algeria**

Hichem Nasri, Noureddine Bouaïcha, Amira Abdesselam
Laboratory of Biodiversity and pollution of Ecosystems, Institute of Biology, University of El Tarf, El Tarf, Algeria.
E-mail : Nasri_cyanobacteria@yahoo.fr

09.50-10.00

**4. Cross-community scaling of benthic macroinvertebrate guilds: a functional approach to community organisation in inland waters of Southern Italy.**

V. Gjoni*, G. Marini, L. Mazzotta, M. Pinna, A. Basset
Department of Biological and Environmental Sciences and Technologies, University of the Salento, Lecce, Italy
E-mail: gjoni.vojsava@unisalento.it

10.00-10.10

**5. Quantitative study of the phytoplankton of the Bizerte lagoon**

Mouna Fertouna Bellakhal, Meher Bellakhal, Jamel Ksouri, Hechmi Missaoui.
Unit Research: Higher Institute of Fisheries and Aquaculture of Bizerte. B.P. 15 Errimel, 7080 Bizerte, Tunisia.
E-mail: meher2976@yahoo.fr

10.10-10.20

**6. Contribution to the study of macrozoobenthiques communities associated with Zostera noltii on the mudflats of Kneiss (Gulf of Gabes, Tunisia) Islands**

Mosbahi Nawfel, Neifar Lassad.
Laboratory of Biodiversity and Aquatic Ecosystems, Department of Life Sciences, Faculty of Sciences of Sfax, University of Sfax BP 11713038 Sfax, Tunisia
E-mail : nawfelmosbahi@hotmail.fr

10.20-10.30

**7. Inventory of molluscs trawling the Algerian coast**

Refes Wahid, Hacherouf Khaled, Mansouri Louanes, Semahi Nadia
National School of Marine Sciences and Coastal Management - University Campus Dély Ibrahim - BP 19 Bois des Cars - Dély Ibrahim - Algiers.
E-mail : wrefes@hotmail.com

Debate

**Chairman Hichem Nasri**

**11.20-11.30**

**8. Physical chemistry and trophic levels of two water level of the wetland complex of El Kala Tonga and Oubeira**

Djabourabi Aicha, Sehili Nadira, Boussadia Meriem Imen, Bensouilah Mourad.
University of El-Tarf/Laboratory Ecobiology Environments Marine and Coastal Areas. Faculty of Sciences; Badji Mokhtar University of Annaba BP 12 Annaba (Algeria)
E-mail : djabourabiaicha@yahoo.fr

**11.30-11.40**

**9. Contribution to the analysis of the spatial distribution of phytoplankton in brackish water. the Case of Lake El Mellah (El Kala National Park, Algeria).**

Faouzi Samar, Nedjma Samar, Rebbah Abdedaouf Chouaib.
University of El-tarf, 36000. Algeria
E-mail : nedjma_sam@yahoo.fr

**11.40-11.50**

**10. Evaluation of physic-chemical and bacteriological pollution of water from Lake Birds (Ramsar Site, Wilaya of El-Tarf, North-East of Algeria)**

Toumi Abir, Houhamdi Moussa, Alayat Hacéne.
Laboratory of agriculture and fonctionnement of ecosystem, University of El-Tarf, 36000. Algeria
E-mail : tabirdz25@gmail.com

**11.50-12.00**

**11. Impact of the creation of the new city of Boughzoul on habitats and populations of vertebrate in lake and the dam.**

Djaidja H, Cherief A, Mailbi A., Bouchenafa O, Boutera N,
Department of Biology, University of M'sila
E-mail :hassiba.ge@yahoo.fr

**Debata**

**Break**

# TOPIC WETLAND : CLIMATIC CHANGE

## Oral :

Chairman Idir Bitam

14.00-14.10

**12. Socio-economic and perception management in arid zones wet Issues: Case chott Melghir and Merouane**

Demnati F, Allache F, Ernoul L, Samraoui B.
Department of Agricultural Sciences. Mohamed Khider University-Biskra.
E-mail : fat_demnati@yahoo.fr

14.10-14.20

**13. Contribution to the study of the distribution and settlement of Raja asterias (Delaroche, 1809) (the starry line) along the Algerian coast.**

Damir N., Abdelaziz A. O. Enssmal.
Campus universitaire de Dély Ibrahim. BP 19 Bois des cars, Dély-Ibrahim, Alger-Algérie
E-mail : damirnaoual@gmail.com

14.20-14.30

**14. Study of wastewater treatment by natural process and aerated lagoon.**

Djennane A, Mahroug S, Hamza N.
Laboratory of Plant Biodiversity "conservation & recovery 'Faculty of Science. Djillali Liabes University of Sidi Bel Abbes. Algeria
E-mail : djennane-asmadoct@hotmail.fr

14.30-14.40

**15. Growth of common carp *Cyprinus carpio* (Linnaeus, 1758) dam Dahmouni (W. Tiaret).**

Bensahla Talet Lotfi, Kerfouf Ahmed, Bensahla Talet Ahmed.
Univ Sidi Bel Abbes, Department of Biology, BP89 -22000 Sidi-Bel Abbès-Algeria.
E.mail : btlotfi77@hotmail.fr

14.40-14.50

**16. Helminths of two sympatric species of the genus Meriones (Rodentia: Gerbillinae) from eastern Tunisia: Diversity of species and zoonotic implications**

Jamel Jrijer, Lassad Neifar
Laboratory of Biodiversity and Aquatic Ecosystems, Faculty of Science / Sfax, BP 1171, Sfax 3000, Tunisia.
E-mail : jamel_jrijer@hotmail.fr

14.50-15.00

**17. Study of parameters of the biology of reproduction : *Squilla mantis mantis* caught in three Tunisian gulfs: Tunis, Hammamet and Gabes**

Mili Sami, Ennouri Rym, Jarboui Othman, Missaoui Hechmi.
Exploitation Unit Aquatic Environments. Higher Institute of Fisheries and Aquaculture, Bizerte, BP 15, 7080 Menzel Jemil, Tunisia.
E-mail : sami_mili@yahoo.fr

15.00-15.10

**18. Fauna and hydrobiological quality streams of the wetland "and Moghrar Maryam" (wilaya Naâma).**

Sekhi Samira, Lounaci Abdelkader
Mouloud Mammeri University of Tizi-Ouzou. Algeria
E-mail : sambiose@yahoo.fr

**Debate -Break**

# TOPIC WETLAND : ECOLOGY OF VECTORS

## Oral :

**Chairman Chadli Aissaoui**

**16.00-16.10**

**19. Variations epidemiological evidence of ectoparasites capriscus Balistes the Gulf of Gabes (Tunisia)**

Hichem Kacem, Lassad Neifa
Faculty of Sciences of Sfax, 3018 Sfax, Tunisia.
E-mail : hichemkacem2007@yahoo.fr

**16.10-16.20.**

**20. Diversity of Digenean parasites of needlefishes (Pisces, Belonidae) from Tunisian coast**

Châari Manel, Neifar Lassâd
Laboratory of Biodiversity and Aquatic Ecosystems. Department of Life Sciences, Faculty of Sciences of Sfax, BP 1171, 3000 Sfax, Tunisia.
E-mail : htchaari.m@gmail.com

**Debate**

# TOPIC 2ND DAY (28TH MAI 2014) AMPHIB

## TOPIC BIODIVERSITY

### Oral :

**Chairlady Fatiha Bakaria**

9.00-9.20

1. **Fauniqtique diversity of continental aquatic environments of Algeria**

Pr. Lounaci Abdelkader.
Faculty of Biological Sciences and Agricultural Sciences. Mouloud Mammeri University of Tizi- Ouzou.
E-mail : lounaci@yahoo.fr

9.20-9.40

2. **Trophic ecology of the Dipper (*Cinclus cinclus*) in streams of Western Babors (Bejaia, Algeria)**

Riadh Moulaï, Safia Ait Habib, Lynda Boudjemaa, Abdelazize Franck Bougaham.
Laboratoiry of Zoology Applied and Animal Ecophysiology, Faculty of Natural Sciences and Life, University of Bejaia, 06000 Bejaia, Algeria.
E-mail : moulai741@hotmail.com

9.40-10.00

3. **The social development in context of biodiversity conservation: both an approach for the strengthening of the 86 appropriation of the populations and an objective**

Serge Solo
WWF Madagascar and Western Indian Ocean Programme Office
E-mail : ssolo@wwf.mg URL (web site) : www.wwf.mg, www.panda.org

10.00-10.20

4. **Biodiversity of Macrophytes in the hydraulic basin of Sebou (Moroocco)**

Benamar Saad, Maissour Abdellah*, Hmamouchi Mohamed Jad
Urban and Plant Environmental Sciences Laboratory; Sidi Mohamed Ben Abdellah University of Fez
E-mail : sciencemaiss@live.fr / saad.benamar@usmba.ac.ma

10.20-10.30

5. **Human disturbance affecting sensitive components (waterbirds) of wetlands; a case study on waterbirds in Libyan Ramsar sites.**

Etayeb K, Bourass E, Berbash A, Bashimam W, Essghaier M.F.
Tripoli University, Department of Zoology, Tripoli University. P.O.Box: 13227. Libya
Environment General Authority, (EGA-Libya).
Libyan Society for Birds (LSB).
E-mail: khaledetayeb@yahoo.com

Debate

Break

**Chairlady Nacera Hanouni**

11.20-11.30

**6. Wetland complex of Oum El- Bouaghi region**

Saheb Menouar, Nouidjem Yacine, Bensaci Ettayib, Bouzegag Abdellaziz, Houhamdi Moussa.
Laboratory research: Natural Resources and Development Environments Sensitive.
E-mail: saheb_tahar@yahoo.fr

11.30-11.40

**7. Avian biodiversity and water quality in the wet area Dhayat Morsli Oran, Algeria**

Ahmed Belguermi, Akram Bilal Benlagra.
University of Oran.
E-mail : Ahmed.belguermi@gmail.com

11.40-11.50

**8. Ecology and polymorphism killifish Aphanius fasciatus Nardo (Cyprinodontidae) in the Blue Lake (West Algeria)**

Boumendjel Mahieddine, Taibi Faiza, Samar Mohamed Faouzi, Hennouni Nacera, Slimane Bouzid, Abdesselem Amira, Djouadi Hadjer, Menam Anissa, Alloui Brahim.
Laboratory for Research on Biodiversity and Ecosystem Pollution. El-Tarf University. Algeria
E-Mail: mahieddine@yahoo.com

11.50-12.00

**9. Contribution to the study of the spatial distribution pattern of some species of waterfowl in the conditions of Lake Tonga (El Kala National Park, North East of Algeria)**

Samar Mohamed Faouzi, Rizi Hadia, Touati Sara.
El-tarf University Faculty of nature and life
E-mail: moho23dz@yahoo.com

12.00-12.10

**10. Impact of Colonies of Yellow-legged Gulls on Diversity and the Organization of phytocenoses Islanders area Bejaia (Bejaia, Algeria)**

Hani Bouyahmed, Riadh Moulaï.
Laboratory of Applied Zoology and Animal Ecophysiology, Faculty of nature and life. University A. MIRA Bejaia, 06000 Bejaia, Algeria.
E-mail: hanibouyahmed@gmail.com

12.10-12.20

**11. Ornithological value of wetlands of high plains of Constantine, for Lake Timerganine**

Maazi Mohamed Cherif, Guellati Kaouthar, Benradia Mouna, Menaa Mohcene, Houhamdi Moussa. Laboratory terrestrial systems ecology and aquatic, Department of biology, Faculty SNV, University Mohamed Cherif Messaadia Souk Ahras. Algeria
E-mail :Cherifmaazi@yahoo.fr

**Debate**

**Break**

**Chairman Maazi Mohamed Cherif**

**14.00-14.10**

**12. First data on the breeding ecology of Dipper, *Cinclus cinclus* in Algeria**

Abdelazize Franck Bougaham, Riadh Moulaï.
Laboratory of Applied Zoology and Animal Ecophysiology, Faculty of Natural Sciences and Life, University of Bejaia, 06000 Bejaia, Algeria.
E-mails: abdellazizbougaham@yahoo.fr

**14.10-14.20**

**13. Ferruginous duck Aythya nyroca in the wetlands of the Algerian North-East (case of the Complex of Guerbes-Sanhadja - Skikda)**

Merzoug Seyf Eddine, Abdi Soumia, Abdellioui Sana, Belhamra Mohamed, Houhamdi Moussa.
Department of Agronomy, Faculty of Sciences and the Natural and Life Sciences, University of Mohamed Khider- Biskra (Algeria).
E-mail : thebiologiste_boy@hotmail.com

**14.20-14.30**

**14. Diurnal activity budget and breeding ecology of the White-headed Duck Oxyura leucocephala at Lake Tonga (North-East Algeria)**

Farah Chettibi, Meriem Aberkane, Zihad Bouslama, Moussa Houhamdi. Département de Biologie, Department of Biology, University of Annaba. Algeria
E-mail : chettibi_farah@hotmail.com

**14.30-14.40**

**15. Diurnal activity budget and breeding ecology of the White-headed Duck Oxyura leucocephala at Lake Tonga (North-East Algeria)**

Meriem Aberkane, Farah Chettibi, Mohamed-Chérif Maazi, Zihad Bouslama, Moussa Houhamdi.
Department of Biology, University of Annaba. Algeria
E-mail : aberkane.meriem@yahoo.fr

**14.40-14.50**

**16. Postural adjustment and distribution of a colonial waterbird Ardeola ralloides, wetland complex of El Kala (Northeast Alegria)**

Bentrad Samiha, Chalabi-Belhadj Ghania.
Department of agronomy. El-Tarf University
E-mail : s_bentrad@yahoo.fr,

**Debate**

# TOPIC BIODIVERSITY Climatic Change

## Oral :

**Chairman Ali Slimani**

**15.20-15.40**

**17. Changing of the diversity and status of waterbirds of Lac Boughzoul: Impacts of habitat changes and human activities**

Ettayib Bensaci, Nacera Boutera, Hassiba Djaidja, Abdelkader Cherief, Asma Zoubiri, Moussa Houhamdi
Department SNV, University of M'sila. Algeria.
E-mail : bensacitayeb@univ-msila.dz

**15.40-16.00**

**18. The National Park of Djurdjura as a wetland and center of biodiversity**

Alileche Ahmed.
Conservator Parc National of Djurdjura
E-mail: alileche_scout@yahoo.fr

**16.00-16.10**

**19. Analysis of the diversity of aquatic birds chotts senior Algerian plateaus related to global change.**

Derradji Nawel, Moulaï Riadh
Laboratory of Applied Zoology and Animal Ecophysiology, Faculty of Natural Sciences and Life, University of Bejaia.
E-mail : derradji_nawel@hotmail.com

**Debate**

**Break**

# (28TH MAI 2014) AMPHI B

## Topic Biodiversity :Ecology Vectors

### Oral :

**Chairman Moussa Houhamdi**

16.50-17.00

**20. Wildlife, Parasites, Health and Environment**

Pr Zihad Bouslama
Laboratory « ECOSTAQ». University Badji Mokhtar. Annaba.
E-mail : zihadb@yahoo.fr

17.00-17.10

**21. Directory vector pathogens in wetlands Algeria**

Idir Bitam, Arab Karim, Kernif Tahar, Boutellis Amina, Zeroual Fayçal, Lafri Ismail, Baziz-Nefah Fadhila, Mammeria Aicha Beya, Belnakhla Ahmed.
VALCORE Laboratory, BOUMERDES University. Algeria
E-mail : Idirbitam@gmail.com

17.10-17.20

**22. Effects of ectoparasites on reproductive performance, parental feeding and nestling growth of the Atlas Flycatcher Ficedula speculigera in Algeria**

Khaled Boudeffa, Mehdi El Aïchar, Zahra Brahmia, Slim Benyacoub
Laboratory of Ecosystem Aquatic and Terrestrial, Biology Department, Badji Mokhtar University, Annaba 23000, Algeria.
E-mail: kh.boud@hotmail.com

17.20-17.30

**23. Mosquitoes Diptera, Culicidae of Algeria: inventory and risk of infection**

Lafri Ismail, Beneldjouzi Assia, Leulmi Hamza, Bitam Idir.
National School of Veterinary Algiers. Algeria
E-mail : idirbitam@gmail.com

17.30-17.40

**24. Identification and seasonal dynamics of ticks in wild boar Sus scrofa in the extreme North-Eastern Algeria.**

Zeroual Faycal, Bitam Idir, Ouchene Nassim, Miguini Mohamed Nadir, Benakhla Ahmed.
Department of Veterinary Science, University of El Tarf 36000 El Tarf, BP 73. Algeria
E-mail : zerfay@hotmail.com

17.40-17.50

**25. Ectoparasites in nests of the white stork *Ciconia ciconia* in wetland of El-Tarf (Algeria).**

Aicha Beya Mammeria, Idir Bitam, Moussa Houhamdi.
El-Tarf University, Department of biology, Bp.73, El-Traf.36000.Algeria.
E-mail : Beya023@yahoo.fr

Debata

Closing the two sessions

# Posters list:

## Topic BIODIVERSITY

1. **The Oualidia lagoon and the lagoon Merja Zerga Comparative reptiles Moroccan Atlantic agoons inventory.**
   Kaoutar Mouhajir, Mohammed Fekhaoui, Abdelaziz Benhoussa, Abderrahmane Mataam.
2. **Distribution of the Eurasian Spoonbill Platalea leucorodia wintering in the Gulf of Gabès, Tunisia** Foued Hamza, Salaheddine Selmi.
3. **Inventory depolluting plants in the blue lake (El Kala National Parc)**
   Boudechiche Lamia, Mebirouk Azeddine, Boudechiche Lyes.
4. **Comparative study of stands plants Depolluting in National Park of El Kala (Oubeira and El Mellah Lakes)**
   Boudechiche Lamia, Djeribi Ahlem, Djeribi Rachida.
5. **Floristic diversity and vegetation mapping of the Sebkhet of Bazer-Sakra (Setif, Algeria).** Djarboua Sabrina, Djerdali Sofia, Si Bachir Abdelkrim.
6. **The main toxic plants in the wilaya of El tarf as wetland**
   Ghanam Bilal, Ghanam Houssem Eddin, Morsli Amirouche, Boufaida Asnoune Zahida, Benchaib Khoudja Fatima, Ghalal Mustapha.
7. **Status of current knowledge on fauna of El-Kala wet lands (El-Tarf)**
   Hannani H ; Bouzebda Z ; Bouzebda A ; Hannani A.
8. **El-Kala wetlands: remarkable avian and ecologic diversity to preserve** Hannani H, Bouzebda Z, Bouzebda A, Hannani A.
9. **Waterfowl population in the wetlands complex of Souk Ahras : present state, patrimonial interest.**
   Guellati Kaouthar, Benradia Mouna, Menaa Mohcene, Maazi Mohamed Cherif, Houhamdi Moussa.
10. **Knowledge of biology and ecology of freshwater fish in eastern algeria**
    Marfoua Mehdi, Souffi Ismail, Chaibi Rachid*, Sibachir Abdelkrim
11. **Ecology and phenological status of water marsh Tamelaht (Bejaia) birds.**
    Melaaz Kebbi, Riadh Moulaï.
12. **Socio-economic study for the establishment of a marine protected area in Cape custody, Annaba**
    Seridi A., Djebar A.B
13. **Contribution to the study of the diet of adult Coot Fulica atra (Aves, Rallidae) in the nature reserve of Lake Réghaïa (Algiers, Algeria)**
    Metna F, Lardjane-Hamiti A, Boukhemza-Zemmouri N, Merabet S, Abba R, Boukhemza M.
14. **Study of the distribution of Chironomidae (Insecta: Diptera) of Charef Wadi, the North-Eastern of Algeria.**
    Zinette Bensakhri, Karima Zerguine, Dalila Bendjeddou.
15. **Biosystematic and ecological study of Caraboïdea harvested in marshes of Réghaia**
    Arab Karim, Bouchenak Ouahiba, Yahiaoui Karima
16. **Approach on the functioning of two algerian high plateaus chotts, zehrez chergui and zehrez gherbi on the basis of their avifaunistic wealth.**
    Derradji Nawel, Moulaï Riadh.
17. **Characterization and pollen prospecting, case of the saltysoil of the lake Fetzara (Annaba, Nord-Est algérien)**
    Djamai Zahra, Kahit Fatim-Zahra, Benslama Mohamed
18. **Phenology of reproduction of duk Mallard Anas plathyhrnchos at Tonga lake (Norteast of Algeria)**
    Labbaci Ridha, Bourbia Said, Bouslama Zihad.
19. **Biogeography aspects of Insular Birds In district of Jijel (Algeria)**
    Lyes Aissat, Hani Bouyahmed, Riadh Moulaï
20. **Trophic ecology of the green frog Pelophylax saharicus Lake Tonga (El Kala National Park).**
    Bayoud Imène, Kadeche Assia, Ziane Nadia, Rouag Rachid.
21. **The status of the Anatidae family wintering in wetlands of high plains of eastern Algeria.**
    Chentouh sana, Boulkhssaim mouloud, Hammoudi naouel, Djabaili hind.
22. **Phenology and Diurnal Behavior of Grebes in Garaet Hadj Tahar (Wetland Complex, Skikda, Northeast of Algeria)**
    Abdellioui Sana, Merzoug Seyfeddine, Houhamdi Moussa.
23. **Diet variation of the Short-Eared Owl *Asio flammeus* (Pontoppidan, 1763) in the area of El-Golea (the Sahara, Algeria)**
    Sekour M, Djilali K, Souttou K, Guezoul O, Ababsa L, Beddiaf R, Kherbouche Y, Manaa A.
24. **Raw data on the diversity and status of aquatic birds of the Chott El-Hodna (central High Plains-Algeria).**
    El-Yamine Guergueb, Ettayib Bensaci, Yacine Nouidjem, Ahmed Kerfouf, Moussa Houhamdi.
25. **Ecological value of the Oued dam Charef (Wilaya de Souk Ahras)**
    Messabhia Sarah, Kaf Asma, Merzoug Seyf eddine, Hafid Hinda et Saheb Menouar.
26. **New distribution of the Mediterranean Killifish *Aphanius fasciatus Valenciennes*, 1821 (Pisces: Cyprinodontidae) and biometrics of individuals captured in the Northern Sahara of Algeria**
    Rachid Chaibi, Abdelkrim Si Bachir, Haroune Chenchouni.

27. **The Marsh Boussedra is located near the town of El - Bouni (wilaya of Annaba, North –East of Algeria), a much polluted site; it receives all the wastewater from this city.**
    Wahiba Boudraa, Zihad Bouslama, Moussa Houhamdi.
28. **Breeding ecology of the Purple *Swamphen Porphyrio porphyrio* at Boussedra marsh and Lake Tonga (North-east Algeria)**
    Farah Chettibi, Meriem Aberkane, Zihad Bouslama, Moussa Houhamdi.
29. **Oil Spills in Coastal Wetlands Hydrocarbon Discharges in the Coastal Wetlands**
    Benyahia Mohamed, Kerfouf Ahmed.
30. **The effect of urbanization on the breeding ecology of the Common moorhen *Gallinula chloropus* in the Northeast of Algeria**
    Zediri Hassiba, Belabed Adnène Ibrahim, Bouslama Zihad.
31. **Ecological interest of Garaet Hadj Tahar for the water-birds of Guerbes-Sanhadja (Northeast of Algeria)**
    Bara Mouslim, Bouslama Zihad, Houhamdi Moussa.
32. **Distribution of white stork Ciconia ciconia in the north- east of Algeria.**
    Mammeria Aicha Beya, Idir Bitam, Moussa Houhamdi

## Poster : BIODIVERSITY

### Ecology vectors:

33. **Ectoparasitic Ecology of the Hedgehog Atelerix algirus in the forest of Edough (Seraidi)**
    Sakraoui Walid, Boukheroufa Feriel, Bouslama Zihad
34. **Carios capensis (Acari: Argasidae) in the nests of gulls leucophé (Larus michahellis) in the Aguili island to Réghaia, Algeria**
    Fadhila Baziz–Neffah, Tahar Kernif, Assia Beneljouzi, Amina Boutellis, Jean-Michel Berenger, Zoubir Harrat, Salaheddine Doumandji, Idir Bitam.
35. **Identification and inventory of ectoparasites adults and nestlings Barn Swallow Hirundo rustica rustica in two localities in eastern Algeria**
    Dadci Walid, Sakraoui Rym, Manaa Sara, Diaf Amina, Tahar Ali
36. **Diet of the Barn Owl (Tyto alba) in three types of environments in the North Eastern Algeria**
    Sakraoui Rym, Dadci Walid, Boukheroufa Mehdi, Semmouk Amir, Boukheroufa Feriel
37. **Relationship between ectoparasitic intensity and immune response in the Algerian Hedgehog Atelerix algirus (Insectivora, Mammalia)**
    Sakraoui Feriel, Boukheroufa Mehdi, Telailia Nafissa, Bengrid Asma.
38. **Comparative ectoparasitic Ecology of Algerian Hedgehog Atelerix algirus between rural and peri-urban in the National Park of El Kala**
    Boukheroufa Mehdi, Sakraoui Feriel, Benyacoub Slim.

## Poster : BIODIVERSITY

### Climatic change

39. **GIS and Remote Sensing Assessment of changes in the periphery and the surface of wetlands. Case of Gareat Taref and its satellite sites. (Ramsar site, South Constantine_Algeria)**
    Boukaba Rima, Si Bachir Abdelkrim.
40. **Effects of climate changes on the benthic population: the case of watershed Summam**
    Fatah Zouggaghe, Mourad Tafer, Lotfi Mouni.
41. **Biological and physiological study of a gastropod Helixe aspersa exposed to multiple pollution (oil case)**
    Zouaghi mohamed fateh, Berrebbah Houria.
42. **The expansion of the Cattle Egret in Algeria it is affected by climate change?**
    Setbel Samira, Doumandji Salaheddine, Voisin Claire.
43. **Contribution to the iron deposit mine Ouenza impact study on the environment**
    Narsis Souad, Benslama Mohamed.
44. **Effect of restraint stress on the behaviour of male rat wistar: repair by immunosuppressive ; cyclosporin**
    Metai A, Faci H, Frih H, Guedri K, Chettoum A, Boukhris N, Tahraoui A, Touafchia L.
45. **Valorization of aromatic and medicinal plants of the flora of Algeria in the food and pharmaceutical industries.**
    Ziani Borhane, Eddine Cherif, Hazzit Mohamed.

# POSTERS list

## Topic Wetland

1. **Study of the microscopic parameters of the biology of reproduction in *Squilla mantis mantis* Tunisian waters**
   Mili Sami, Ennouri Rym, Jarboui Othman, Missaoui Hechmi.
2. **Assessment of Nutrients from Four Tunisian fish farms**
   Rym Ennouri, Sami Mili.
3. **Assessment of the nutritional quality of red mullet *Mullus barbatus* from Tunis Gulf (Mediterranean Sea, Northern Tunisia).**
   Rym Ennouri *, Sami Mili, Lassaad Chouba
4. **Study of the live food of bivalves at a shellfish farm in Bizerta lagoon**
   Wiem Boussellàa, Hela Derbel, Lassâd Neifar.
5. **Study of the live food of bivalves at a shellfish farm in Bizerta lagoon**
   Meher Bellakhal, Mouna Fertouna Bellakhal
6. **Impact of the ballast waters in the dispersal of the toxic phytoplankton in the Bizerta lagoon**
   Mouna Fartouna Bellakhal, Meher Bellakahal, Souad Turki, Lotfi Aleya.
7. **Production and spawning time of *Scorpaena scrofa* Linnaeus, 1758 in the western part of the Libyan coast Tripoli**
   Salwa Shahrani, Esmail Shakman*
8. **Status of artisanal fisheries in Libya.**
   Esmail Shakman*, Khaled Etyab, Ibraheim Taboni, Mohamed Et-wail, Abdallah Ben Abdallah.
9. **Gender Lagocephalus (Tetraodontidae - Fish) along the Algerian coast: Distribution and diagnosis**
   Refes Wahid, Semahi Nadia
10. **Morphometrie of the tow color morphs of sea bass *Serranus cabrilla* (serranidae) of the gulf of Annaba, Algeria**
    Rachedi Mounira, Derbal Farid, Kara M. Hichem.
11. **Morphometrie of the serran kids *Serranus cabrilla* (serranidae) of the gulf of Annaba, Algeria**
    Rachedi Mounira, Derbal Farid, Kara M. Hichem.
12. **Study of the diversity of sponges porifera: Demospongiae, of the southern shore of the mediterranean**
    Bensafia N, Khati W, Derbal F.
13. **Contribution to the histological study halophyte Salicornia europaea of National Park El Kala**
    Nasri H, Allouche D, Zegrit R, Benabdallah A, Boumendjel M.
14. **Bacteriological quality of some wetlands of Guerbes-Sanhadja complex (Skikda, Northeast Algeria)**
    Bara Mouslim, Houhamdi Moussa.
15. **Contribution to the palynological study of wet sediment temporary pools of El Frin complex, Eastern Numidia (North-eastern Algeria)**
    Ghit karima, Daroui atika, Kahit Fatima Zohra, Benslama Mohamed
16. **Environmental diagnosis of Lake Sidi m'hamed benali "establishment of geographical information systems (GIS)"**
    Mami Anas, Bennabi Farid, Kerfouf Ahmed.
17. **Island Rachgoun: a site of ecological interest to protect the coastline west Algeria**
    Benallal Mahmoud Adnane, Univ-Sidi Bel Abbès. Algeria
18. **Contribution to the identification and analysis of the spatial distribution of phytoplankton diversity parameters brackish waters (Case of El Mellah lagoon-PNEK-Region of El-Tarf)**
    Rebbah Abderraouf Chouaib, Youbi Nadir
19. **Hydrological, ecological characterization and sustainable development of wetlands; case Garaàt Timerganine.**
    Boumaiza Imene, Houha Belgacem, Moudjari Zoubeir, Bougandoura Zakaria, Boumaiza Sarah.
20. **Pollution degree determination of the Black Lake waters (Region Bordj Ali Bey, Bouteldja).**
    Haied Nadjib, Chaab Salah, Bougherira Nabil, Foufou Atif, Khadri Samira.
21. **Modeling the impact of an aquifer recharge in a wetland from a lake (Case of the Bouteldja unconfined dune aquifer and the Black Lake).**
    Haied Nadjib, Chaab Salah, Bougherira Nabil, Foufou Atif, Khadri Samira.

22. **Study the biological denitrification: application on wetland of Khenchela.**
    Kheddouma Asma, Yakhlef Wahiba, Arhab Rabah.
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# SPEAKERS 1ST DAY:

### 1. Enjeux de biodiversité des lagunes côtières et leurs zones humides périphériques

Pr. Rutger de Wit

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Résumé
Les écosystèmes lagunaires occupent environ 13 % du littoral au niveau mondial. Leur superficie est extrêmement variable : de moins de 1 km2 jusqu'à 10 000 km2 (Lagoa dos Patos, Brésil). En Europe, elles occupent 5,3 % du littoral et sont essentiellement localisées sur les rives des mers semi fermées, la mer Baltique, la mer Noire et la Méditerranée. Les lagunes des deux dernières régions sont référencées sur le site : www.circlemednet.unisalento.it. La lagune Curonienne (Russie, Lituanie) sur les rives sud de la mer Baltique est la plus grande lagune d'Europe (1,584 km2), en grande partie eau douce avec une zone de transition vers la salinité de la mer adjacente (7). En France, ces écosystèmes sont particulièrement communs sur le littoral de la Méditerranée où dans le Golfe de Lion ils occupent environ 50 % du littoral et forment un véritable chapelet de lagunes ou la salinité varie entre saumâtre, euhaline et hyperhaline.
Les lagunes côtières présentent plusieurs écotones, en conditions naturelles, les deux principaux étant (i) le transect avant côte, plage, systèmes dunaires du lido, zones humides dans la transition entre l'affleurement de la lentille d'eau douce et le plan d'eau lagunaire, et (ii) le transect entre le plan d'eau lagunaire avec herbiers de phanérogames marines (Magnoliophyta), zones humides périphériques et les écosystèmes terrestres (forêts et garrigues) et leurs cours d'eau. Ainsi, les zones humides périphériques du lido et de l'intérieur présentent un gradient de salinité. Cependant, depuis les temps médiévaux ces gradients ont été modifiés par l'homme, notamment par la création de marais salants (salins). La désaffectation progressive des salins par la compagnie Salins (anciennement Salins du Midi) dans le sud de la France depuis les années 1960 pose la question de quelle gestion mettre en place pour ces salins ? Je discuterai des différentes options qui ont été adoptées comme (i) la gestion des basins pour l'avifaune, (ii) la remise en état de l'exploitation salinière pour des raisons patrimoniales avec recherche des nouveaux marchés, et (iii) la destruction des structures et remise en place des processus géomorphologiques naturelles. Je discuterai des impacts sur la biodiversité de ces zones humides en transition.

Les lagunes côtières sont le réceptacle des alluvions (limons, vases et sables) acheminés par les fleuves, les courants et les intrusions marines où elles vont sédimenter dans des conditions hydrodynamiques plus calmes. Ainsi, les lagunes ont une tendance à se combler et subissent naturellement une progressive conversion en zones marécageuses (nouvelles zones humides) et finalement en écosystèmes terrestres. En revanche, pendant les périodes de transgression le lido et l'ensemble de la lagune subit une forte érosion. Ce phénomène est particulièrement important dans les zones de subsidence et est actuellement renforcé par le changement climatique. S'il y a la place dans la plaine du littoral et quand on laisse libre jeu aux processus naturels, il est possible que l'épicentre de la lagune et le lido se déplace progressivement vers l'intérieur des terres. Alternativement, la lagune a une tendance à s'ouvrir vers la mer et devenir une baie. La construction des systèmes en durs et notamment l'urbanisation du lido et du littoral intérieur des lagunes présentent un fort frein aux processus naturels et favorisent ainsi le « coastal squeeze » pendant la montée du niveau de la mer avec une perte importante de zones humides périphériques.

Les lagunes côtières sont également le réceptacle des sels nutritifs acheminés par les cours d'eau depuis leurs bassins versants. L'activité humaine induit ainsi des phénomènes d'eutrophisation. Elle stimule la croissance du phytoplancton et des végétaux. L'augmentation de la turbidité par le phytoplancton et la croissance accrue de macroalgues est très défavorable aux phanérogames marines (Magnoliophyta). Les prairies de phanérogames marines ont régressés ainsi que leurs cortèges d'animaux et micro-organismes associés, ce qui représente un changement de régime avec une importante perte de biodiversité. A cause de la croissance des algues les teneurs en oxygène dans la colonne d'eau varient énormément. Dans les lagunes Méditerranéennes les biomasses d'algues peuvent augmenter au-delà d'un kg m-2 et donnent lieu à des crises dystrophiques (malaigues en Occitan) qui se caractérisent par une chute brutale de la teneur d'oxygène dans l'eau et la formation de sulfure d'hydrogène par des bactéries respirant les sulfates. Pour le maintien de la biodiversité il est très important de maîtriser les apports de sels nutritifs vers les écosystèmes lagunaires. Dans le sud de la France d'importantes avancées ont permis de réduire les rejets de phosphate, azote et de matière organique et d'engager la reconquête de leur bon état écologique. Cependant, les lagunes ont une certaine inertie et la trajectoire de cette reconquête sera plus ou moins longue en fonction de leur historique d'eutrophisation.

## 2. Ecosystem property determinants of biodiversity organisation in lagoon ecosystems

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ABSTRACT

Patterns of biodiversity in transitional waters have been addressed considering physical gradients, spatial patchiness, energy constraints and, clearly, anthropogenic-based perturbations.
Lagoons particularly tend to be characterised by low local diversity, with few dominant species; the harshness of the physical environment has been considered a main determinant of these observations. On the other hand, by enlarging the scale of observation, both with and between ecosystems up to the eco-regional scale a role of lagoons as biodiversity hotspot is commonly claimed, supported both by the evidences of high $\beta$ and $\gamma$ diversity and by the observations of island or nursery role of lagoons for many flagship or keystone species.
Conceptual links between biodiversity patterns in lagoons and ecosystem properties have been recently proposed but not yet fully explored. Here, I am addressing the actual relevance of key ecosystem properties, as capacity, resilience and parsimony, on biodiversity patterns and organisation. Data are from data resources (i.e., Transitional Water Platform and Phytoplankton Data Platform) from LifeWatch.ita covering mainly macro-invertebrate and phytoplankton guilds from different eco-regional areas.
Capacity and resilience play key roles in determining biodiversity organisation in lagoon ecosystem, while they differ in the characteristic scale of influence. A hierarchical organisation of ecosystem property, with capacity at higher level than resilience, seems to be generalizable to guilds differentially using lagoon ecosystems.

### 3. Bacterial diversity in a Mediterranean lagoonal complex deduced by 16S rDNA next generation sequencing: providing metagenetics data for the ecological description, biogeography and environmental assessment of the habitat

Dr. Christos Arvanitidis

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ABSTRACT
Lagoons are naturally enriched habitats, with unstable environmental conditions caused by their confinement from the sea and their shallow depth. The frequent fluctuations of the abiotic parameters cause severe changes in the abundance and distribution of organisms. This relationship has been studied extensively in macrofaunal communities, but not sufficiently in the bacterial ones.
The aim of the present study was to examine whether the bacterial community multivariate pattern is an efficient descriptor of the lagoonal habitat and what extend this multivariate pattern is associated with biogeographic and environmental factors.
For this purpose, sediment samples were collected from five lagoons located in the Amvrakikos Gulf (*Ionian Sea*, Western Greece), a Special Protection Area according to the Natura 2000 Network and the international convention of Ramsar. In each lagoon, two sampling stations were chosen, with different connectivity degree with the sea. A number of abiotic parameters were measured for every station. Microbial DNA was extracted from the sediment upper layer (0-2cm) and was further processed through deep sequencing of the V5-V6 region of the 16S rDNA gene.
The results of this study suggest that, in the studied lagoonal ecosystem, salinity is the abiotic parameter which best explains the bacterial community diversity pattern, and more specifically, it differentiates the community of the brackish lagoons from the one of the brackish-marine one. In addition, this study provides support to the aspect of the use of the microbial communities as bioindicators of the ecological status of the lagoonal ecosystems, an advantage largely owed to their larger taxonomic and functional diversity but also to the relevance of their multivariate spatial
Keywords: Amvrakikos, Lagoon, Pyrosequencing, Bacteria, Sediment, 16S

### 4. Quel intérêt de créer une association regroupant les sites Ramsar dans un pays ?

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Résumé
La convention de Ramsar, adoptée en 1971, est l'une des plus anciennes et des plus « populaires » conventions internationales ratifiée par 158 nations qui s'engageaient à tout mettre en œuvre pour stopper la perte et la dégradation des zones humides partout dans le monde.
Les critères de sélection des sites Ramsar reposaient à l'origine sur le seul indicateur de présence d'oiseaux d'eau. Ils se sont étendus au gré des années à la faune piscicole et halieutique, à la flore, aux récifs coralliens, aux glaciers et aux sources, aux océans, aux mers intérieures et aux lacs. Milieux drainés pour la culture céréalière ou l'urbanisation, les zones humides sont encore à ce jour menacé. Face à ce constat, Les gestionnaires et animateurs de sites Ramsar en France (au nombre de 36) ont décidé de créer une association dont les objectifs sont :

- faire connaître et promouvoir le label Ramsar en France ;
- créer les conditions d'échange et de partage de connaissances et d'expériences à l'échelle nationale et internationale dans les domaines de la conservation, la protection, la mise en valeur, l'animation et la gestion du patrimoine des zones humides et améliorer la gestion des sites ;
- être force de proposition et de réflexion dans les domaines cités ci-dessus auprès des acteurs des zones humides en France et à l'international
- Promouvoir les sites Ramsar français désignés sur la liste du patrimoine mondial auprès du public et des opérateurs touristiques.

C'est le seul exemple de regroupement au niveau d'un pays signataire de la convention de Ramsar. L'objet de cette association vise aussi à encourager d'autres pays à suivre son exemple dans le but de concrétiser la gestion des patrimoines inclus dans les sites désignés Ramsar.

ABSTRACT

The Ramsar convention was adopted in 1971. This makes it one of the oldest and most "popular" international conventions ratified by 158 countries which agree to make every effort to stop the loss and degradation of wetlands around the world.
The Ramsar site selection criteria was originally based on one indicator, that of the presence of waterbirds. With time, the number of indicators has been extended to fish species, plants, coral reefs, glaciers and springs, oceans, interior seas and lakes. Whether by drainage for cereal production or urbanization, wetlands are still under threat. Given this situation, the managers of Ramsar sites in France (36) have decided to create a NGO with the following objectives:

- promote the value of the Ramsar nomination in France ;
- create the conditions for exchange and sharing of knowledge and experience at a national and international level in the following areas of work: conservation, promotion of the site, wetland management and its improvement;
- to be proactive with respect to the above points towards wetland stakeholders at a national and international level;
- to promote designated French Ramsar sites as sites of world heritage to the general public and also tourist agencies.

This NGO is the first of its kind to bring together Ramsar site managers at the national level of country which has signed up to the Ramsar convention. This NGO also hopes to encourage other countries to follow this example with the aim of improving the management of the wetlands within their national Ramsar sites.

### 5. Définir et mettre en place des aires protégées pour les oiseaux d'eau

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Résumé
De nombreuses aires protégées à travers le monde ont été créées sur des espaces qui ne présentaient pas une valeur économique et sociale importante plutôt que selon des critères écologiques. Pour les oiseaux d'eau, un réseau d'aires protégées existe déjà et peut nécessiter d'être renforcé. Cette communication montre que différents critères doivent être pris en compte pour définir ces sites : les espèces que l'on souhaite protéger, leur écologie (modalités de la recherche alimentaire, aires d'alimentation/aires de repos), les activités humaines sur et à proximité du site et les moyens de mettre en œuvre une gestion performante et appropriée.

### Designing and implementing protected areas for waterfowl

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ABSTRACT
A lot of protected areas have been created on a global scale in places without any economic or social value instead of according ecological criteria. For waterbirds, there is already a protected area network that needs to be reinforced. This talk shows that different criteria must be taken into account to designed these sites: the targeted species, they ecology (feeding behaviour aspects, feeding areas/resting areas), human activities on and closed to the proposed sites and the means to implement an efficient and appropriate management.

## 6. Stress, hormèse et substances adaptogènes

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Résumé
Le mot "stress" désigne à la fois l'ensemble des perturbations biologiques et psychologiques et les réponses complexes (immédiates et à plus long terme) qu'elles engendrent chez les organismes agressés (Cannon, 1935; Selye, 1936, 1956). Il a donc un sens double, correspondant à la fois aux causes et à leurs conséquences. Les êtres vivants sont soumis en permanence à toutes sortes de stress extrinsèques (physiques, chimiques, biologiques) et intrinsèques. Ces stress, en fonction de leur nature, de leur intensité et de leur durée, peuvent avoir selon les cas des effets bénéfiques ou dommageables pour l'organisme. En effet, des stress de faible intensité stimulent les défenses de l'organisme, ce qui lui permet ensuite de mieux faire face aux contraintes de son environnement. En fait, ces faibles stress seraient même indispensables à la survie des organismes, car ils maintiennent à un niveau suffisant les mécanismes de la défense immédiate. Ces concepts seront illustrés par divers exemples pris chez les animaux et les végétaux, les problèmes rencontrés étant très comparables.
L'hormèse est un phénomène dont la description remonte à la fin du 19è siècle, mais qui a été remis d'actualité par Calabrese (2004). On peut l'illustrer par l'observation que de faibles doses d'une substance (toxique par exemple) peuvent avoir des effets opposés à ceux des fortes doses. Cela se traduit par des courbes dose-réponse non linéaires (ou sigmoïdes), mais en "U", en "J", voire encore plus complexes, et ceci peut apparemment s'appliquer aux rayonnements ionisants, aux métaux lourds ou à divers polluants de l'environnement (comme les perturbateurs endocriniens). De ce fait, dans certains cas, les faibles doses de toxiques peuvent avoir des effets bénéfiques. Ces observations doivent en tout cas nous inciter à beaucoup de prudence dans l'extrapolation des résultats obtenus avec quelques doses. Ici encore, ce concept sera illustré par divers exemples.
Les substances dites "adaptogènes" (Lazarev, 1947) sont représentées par de nombreux métabolites secondaires des plantes, dont l'absorption par les animaux déclenche tout un ensemble d'effets, souvent peu spécifiques, mais qui leur procurent au final une meilleure résistance aux stress. Elles sont à la base de l'utilisation de ces plantes adaptogènes dans les pharmacopées traditionnelles, ou actuellement les compléments alimentaires, comme par exemple le ginseng ou le curcuma. Leurs effets bénéfiques semblent liés à l'induction d'un faible niveau de stress tel que discuté précédemment, et agissent sur un grand nombre de cibles dans l'organisme.
Ces divers concepts peuvent encore se complexifier dans le cadre de la "xénohormèse", un concept récemment défini par Howitz & Sinclair (2008). Selon cette hypothèse, les hétérotrophes pourraient retirer un bénéfice de l'ingestion de plantes "stressées", dont la composition serait modifiée, ce qui leur procurerait un effet bénéfique particulier.

### Stress, hormesis and adaptogenic substances

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In french language, the word "stress" is used both to describe the set of biological and psychological disturbances and the reactions (immediate or long-term) they evoke in target organisms (Cannon, 1935; Selye 1936, 1956).It has therefore a double significance, as it corresponds both to the causes and their consequences. Living organisms are constantly subjected to all kinds (physical, chemical, biological) of extrinsic and intrinsic stress. These stresses, according with their nature, intensity and duration, may have either beneficial or detrimental effects to the organism. Indeed, low-intensity stress stimulate the body's defenses, which then allows it to better cope with the constraints of their environment. In fact, these low stress would even be indispensable to the survival of organisms, because they maintain a sufficient level of the immediate defense mechanisms. These concepts will be illustrated by examples taken from various animals and plants, as the problems are very similar in both kingdoms.
Hormesis is a phenomenon whose description goes back to the late 19th century, but was re-introduced recently by Calabrese (2004). It can be examplified by the observation that low doses of a substance (eg toxic) may have opposite effects to those of high-doses. This results in dose-response curves which are neither linear or sigmoid), but instead are U-shaped, J-shaped, or even more complex, and this can apply to ionizing radiations, heavy metals or other environment pollutants (such as endocrine disruptors). As a consequence, low doses of toxins can be beneficial in some cases. These observations should in any case to be prudent when extrapolating results obtained with a few doses only. Again, this concept will be illustrated by various examples.

Substances termed "adaptogens" (Lazarev, 1947) are represented by many secondary plant metabolites, the absorption of which by animals triggers a non-specific set of effects, but which result in an improved resistance to stress. This effect is the basis for the use of such adaptogenic plants (e.g. ginseng or turmeric) in traditional pharmacopoeias or in food supplements. Their beneficial effects appear to be related to the induction of a low stress level as discussed above, and they operate on a large number of target organs in the body.
These various concepts can even become more complex in the context of "xenohormesis", a newly introduced concept by Howitz & Sinclair (2008). According with this assumption, heterotrophic organisms might derive a profit from the ingestion of "stressed" plants, whose composition would have been modified, thus prodiding a particular (increased) benefit.

**7. Wetlands and their biodiversity in Morocco: Status and prospects of preserving endangered species and landscapes**

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Résumé

Les zones humides au Maroc et leur biodiversité : Etat des lieux et perspectives de la préservation des espèces et des paysages menacés
La Convention Ramsar compte 133 parties contractantes, qui ont inscrit ~1200 sites sur la liste des zones humides d'importance internationale, avec une superficie totale dépassant 105 millions d'hectares. Les sites marocains les plus importants représentent une surface de 350000 hectares et incluent des zones humides variées (continentales et côtières).
Les sites incluant le Complexe du bas Loukkos, les embouchures des Oueds Dr'a, Moulouya, Chbeyka-Al Wa'er et les zones humides de l'Oued El Maleh, sont composés de marécages salés qui jouent un rôle important pour le refuge, le repos et l'hivernage des oiseaux migrateurs, dont de nombreuses espèces menacées (Sarcelle marbrée, Tadorne casarca, Fuligule nyroca et Goéland d'Audouin).
Les deux Aguelmams Sidi Ali-Tifounassine et lacs Isly-Tislite, représentent un complexe de lacs de montagne parmi lesquels on trouve deux des lacs les plus hauts d'Afrique du Nord (altitude de plus de 2000 m dans le Haut Atlas).
Les sites côtiers : Cap des Trois Fourches, Archipel et dunes d'Essaouira, Baie d'Ad-Dakhla, Marais et côte du Plateau de Rmel et Sebkha Bou Areg, incluent des lagunes marines, Merja Zerga et lagune de Khnifiss, falaises maritimes, des plages sableuses et des côtes rocheuses avec une grande valeur esthétique. Ils abritent une importante flore et faune de mollusques, de plancton et de mammifères ainsi que des espèces charismatiques : Phoque moine, Ibis chauve et Faucon d'Eléonore.
Parmi les zones humides artificielles (lacs de barrage, oasis associés à plantations de palmiers irriguées, salines) dont le rôle est prépondérant pour assurer l'approvisionnement en eau et en électricité aux populations. Ces sites incluent le Barrage Al Massira et le Barrage Mohammed V.
De nombreuses menaces pèsent sur ces zones et incluent une utilisation abusive des ressources en eau, en particulier pour l'agriculture et le développement touristique, ainsi qu'une importante pollution liées aux industries et à l'agriculture.
Les sites désignés et classés Ramsar sont évidemment à préserver des zones humides clés au Maroc, et il est important de pouvoir garantir la bonne gestion de leurs ressources biologiques en veillant sur la qualité de l'eau et l'esthétique paysagère.

**Wetlands and their biodiversity in Morocco: Status and prospects of preserving endangered species and landscapes**

Abstract:
The Ramsar Convention has 133 Contracting Parties, who scored more than 1200 sites on the List of Wetlands of International Importance, with a total area in excess of 105 million hectares. The most important Moroccan sites represent an area of ~300,000 hectares and include various wetlands (inland, marine and coastal).
Sites including the Complex of low Loukkos, the mouths of wadis Dr'a , Moulouya Chbeyka -Al Wa'er and wetlands of the Oued El Maleh, are composed of salt marshes that play an important role for the shelter, resting and wintering of migratory birds, including many endangered species (marbled Duck , Ruddy Shelduck , Ferruginous Duck and Audouin gull) .
Both Aguelmams Sidi Ali Tifounassine and Isly - Tislite lakes represent a complex of mountain lakes which include two of the highest in North Africa lakes (altitude of over 2,000 m in the High Atlas ) .
Coastal sites: Cape Three Forks, Archipelago and dunes of Essaouira, Ad- Dakhla bay, saline and coast Plateau Rmel and Sebkha Bou Areg include marine lagoons and lagoon Merja Zerga Khnifiss , sea cliffs , sandy beaches and rocky coasts with high aesthetic value . They are to a significant flora and fauna of mollusks, plankton and mammals and charismatic species : monk seal, bald ibis and Eleonora's Falcon .
Among the artificial wetlands (reservoirs, oasis associated with palm plantations irrigated saline) whose role is paramount to ensure the supply of water and electricity. These sites include Al Massira and Mohammed V Dams. Many threats to these areas and include misuse of water resources, particularly agriculture and tourism development, as well as a major pollution -related industries and agriculture.
Designated and Ramsar sites listed are obviously key to preserving wetlands in Morocco, and it is important to ensure the proper management of biological resources in ensuring the quality of water and landscape aesthetics.

**8. Application des techniques d'observation de la Terre pour le suivi-évaluation des zones humides méditerranéennes : retour d'expérience du projet GlobWetland-II**

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Résumé
GlobWetland-II (GW-II) est un projet pilote régional initié par la Convention Ramsar sur les Zones Humides et financé par l'Agence Spatiale Européenne (ESA). L'objectif principal du projet est de facilité l'intégration des techniques d'observation de la Terre afin de mieux gérer et de mieux conserver les milieux humides dans les pays méditerranéens. Pour cela, un système de suivi-évaluation (S&E), basé sur la cartographie de l'occupation du sol à partir des images satellites et le calcul des indicateurs spatiaux de son évolution entre 1975 et 2005, a été développé sur un ensemble de 300 zones humides côtières réparties entre 24 pays du bassin méditerranéen (du Maroc au Portugal). Dans ce contexte, l'Observatoires des Zones Humides Méditerranéennes (OZHM), qui est basé au Centre de Recherche pour la Conservation des Zones Humide Méditerranéennes de la Tour du Valat, constitue un partenaire clef dans le processus de développement et de mise en place des systèmes de S&E du projet GW-II. De plus, les indicateurs spatiaux de suivi de l'état des zones humides méditerranéennes développés et calculés au cours de ce projet, permettront d'alimenter directement la base de données de l'OZHM, qui intègre aussi d'autres types d'indicateurs (biodiversité, eau, socio-économiques, services écologiques,...etc.) répondant tous à la stratégie globale de l'Observatoire basée sur un modèle DPSIR (Force motrice - Pression - Etat - Impact - Réponse) et qui vise à mieux protéger les milieux humides dans les pays du bassin méditerranéens en leur offrant une meilleure place dans les agendas politiques aux échelles locales, nationales et régionale. L'approche GW-II est basée sur 3 composantes : une première composante télédétection pour le prétraitement des images satellitaires, la classification du couvert végétal et de l'occupation du sol et la détection des changements.
Une seconde composante SIG pour le calcul des indicateurs spatiaux (surface totale des habitats humides, évolution dans le temps, surfaces inondées, pressions anthropiques,...etc.).
Et une troisième composante Web-GIS qui permettra un accès permanent aux cartes et aux informations produites pendant et après la durée du projet ou fourni

**Application of remote sensing for the Mediterranean wetlands monitoring: experience from the GlobWetland II project**

ABSTRACT
GlobWetland II (GW-II) is a regional pilot project of the Ramsar Convention on Wetlands, funded through the European Space Agency. The primary objective of GW-II is to facilitate the integration of remote sensing into the conservation and management of Mediterranean wetlands. It aims to develop a monitoring system of the main coastal wetlands in 24 Mediterranean countries, from Morocco to Portugal, mainly based on mapping and indicators development. The Mediterranean Wetlands Observatory (MWO), based at Tour du Valat, is involved as a key partner to develop, operate and use the GW-II approach. As far as the MWO is concerned, the GW-II project incorporates the valuation of four of its indicators in all the 300 analyzed wetlands, including trends measurement between 1975 and 2005. The system consists of maps and system software. To the GW-II system software will belong 3 components, a remote sensing component for tasks like satellite image pre-processing, land use/land cover classification and change detection, a GIS component for the indicator computation and a Web-GIS component for the permanent access to the maps and information data that have been produced during the live time of the project or provided by users and partners. GW-II system recorded the state of 300 Mediterranean wetlands and their ecosystem components in terms of land mapping (land use/land cover and water cycle regime); and monitoring indicators (change in wetland, flooded areas, conversion of wetlands into agriculture and urbanization areas and threats on wetlands). The first results were analyzed for 214 sites and were presented to different Ramsar focal points of the Mediterranean countries during a participative workshop for the GW-Africa project lunching, opening discussion for possible improvements. The results interpretation methodology was then modified by incorporating additional data including status of protected areas in order to take into account the difference on land use change rates between natural protected and unprotected areas. And also the integration into the calculation of the total wetland surface evolution indicator the distinction between natural and artificial wetlands. Finally, the GW-II results will directly feed both the MWO and the Global Observation Wetlands System (G-WOS) databases in term of maps and spatial indicators for the monitoring and the conservation of Mediterranean wetlands.

Keywords: Mediterranean wetlands, remote sensing, maps, spatial indicators, GlobWetland II project, Mediterranean We

**9. La renaissance de la culture en microbiologie et l'environnement**

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Résumé
Le microbiote intestinal humain est un écosystème complexe composé d'une grande diversité, y compris les bactéries, les archaea et les procaryotes unicellulaires comme les amibes et ciliés. Cette diversité microbienne contribue à la maturation du système immunitaire et fournit une barrière directe contre la colonisation par des agents pathogènes. Son implication possible dans les maladies de la société moderne telle que l'obésité, qui a une prévalence croissante, a été décrite. Certaines bactéries et archaea méthanogènes ont été impliquées dans cette pathologie. Cependant, en dépit de la grande diversité démontrée par la biologie moléculaire, la diversité des bactéries et archaea cultivées dans le tube digestif humain est resté très peu étudiée.
L'environnement est une source possible de l'acquisition de la flore intestinale par l'homme; néanmoins, leurs niches écologiques précises, les voies d'acquisition et leur rôle potentiel dans les pathologies humaines demeurent inconnus. Le développement de nouvelles méthodes d'identification et de culture de ces organismes particuliers et exigeants à partir d'échantillons cliniques est donc nécessaire. Cela permettra d'isoler de nouvelles espèces pour les caractériser phénotypiquement, d'explorer leur génome par séquençage et d'étudier la dynamique des populations notamment au cours des pathologies pour préciser leur rôle exact au sein des flores complexes associées aux muqueuses de l'homme.

**The rebirth of culture in microbiology and the environment**

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ABSTRACT
The human intestinal microbiota is a complex ecosystem consisting of a wide diversity including bacteria, archaea and unicellular prokaryotes as amoebas and ciliates. This microbial diversity contributes to the maturation of the immune system and provides a direct barrier against colonization by pathogens. Its possible involvement in diseases of modern society such as obesity, which has an increasing prevalence, has been described. Some bacteria and methanogenic archaea have been implicated in this pathology. However, despite the high diversity demonstrated by molecular biology, the diversity of cultivated bacteria and archaea in the human gut remained very poorly studied.
The environment is a possible source of acquisition of the intestinal flora by human; however, their specific ecological niches, acquisition ways and their potential role in human disease remain unknown. The development of new methods for the identification and cultivation of these organisms from clinical samples remained necessary. This will help to isolate new species to characterize them phenotypically, explore their genome by sequencing and studying population dynamics especially during human disease to clarify their exact role in the complex flora associated with human mucosa.

**10. Situation actuelle de l'aquaculture dans la lagune de Bizerte**

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Résumé

La lagune de Bizerte est située à l'extrême Nord de la Tunisie entre les latitudes 37°8' et 37°14' et entre les longitudes 9°46' et 9°56' et s'étend sur une superficie de l'ordre de 120 km2. L'activité aquacole dans cette lagune, basée essentiellement sur la conchyliculture avec l'élevage des moules (Mytilus galloprovincialis) et des huîtres (Crassostrea gigas) et le reparcage de palourde (Ruditapes decussatus), a débuté en 1963 avec une expérience étatique réduite qui s'est poursuit pendant 30 ans. La privatisation de ce secteur à la fin des années 1990 a permis un développement plus rapide de ces activités, notamment l'adoption de nouvelles techniques, comme les filières flottantes (longues lignes) qui ont remplacé les tables fixes et ont permis un choix de site plus grand pour l'installation des fermes aquacoles. Néanmoins, l'absence de captage naturel de naissains d'huître, la présence de biotoxines via les algues marines nuisibles, la pollution organique et chimique à partir d'effluents urbains et industriels et l'obstruction de l'export des bivalves sont de graves problèmes qui entravent le développement de ce secteur. Plusieurs actions telles que la production artificielle de naissains en écloserie, la limitation de la contamination en arrêtant les rejets polluants et une bonne stratégie visant l'organisation et la cohabitation des différentes activités, sont des solutions à adopter pour un meilleur développement socioéconomique et une gestion durable de cet écosystème côtier.

Mots-clés : Aquaculture, lagune de Bizerte, conchyliculture, filières flottantes, écloserie

**Current situation of aquaculture in the Bizerta lagoon**

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ABSTRACT

Bizerta Lagoon is located in the far north of Tunisia between latitudes 37° 8' and 37° 14' and between longitudes 9° 46' and 9° 56' and extends over an area of the order of 12O km2. Aquaculture in this lagoon, based mainly on shellfish with farming of mussels (Mytilus galloprovincialis) and oysters (Crassostrea gigas) and clam (Ruditapes decussatus), began in 1963 with reduced state experience that has continued for 30 years. The privatization of this sector at the end of the 1990s allowed faster development of these activities, including the adoption of new techniques, like floating long lines which replaced the fixed tables and allowed a largest choice of sites for installation of the aquaculture farms. Nevertheless, the absence of natural Oyster spat collection and the presence of biotoxins via harmful marine algae and organic and chemical pollution from urban and industrial effluents and the obstruction of the export of bivalves are serious problems hindering the development of this sector. Several actions such as the artificial production of spat in hatchery and limitation of contamination by stopping pollutant release and a good policy for the organization and the cohabitation of the various activities are solutions to approve for a better socio-economic development and a sustainable management of this coastal ecosystem.

Keywords: Aquaculture, Bizerta lagoon, shellfish, floating long lines, hatchery

**11. La mer Méditerranée se vide de ses poissons ou comment on se dirige vers un effondrement irréversible des écosystèmes terrestres.**

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Résumé
En se basant sur des théories scientifiques, des modélisations d'écosystèmes et des preuves paléontologiques, une équipe chercheurs de la Simon Fraser University (SFU, Vancouver), prédit que les écosystèmes de la Terre vont faire face à un effondrement imminent et irréversible.
Anthropocène est un terme créé et utilisé pour désigner une nouvelle époque géologique qui aurait débuté à la fin du XVIIIe siècle avec la révolution industrielle, période à partir de laquelle l'influence de l'homme sur le système terrestre serait devenue prédominante. Le terme popularisé par Paul Crutzen, prix Nobel de chimie (1995), est aujourd'hui utilisé par une partie de la communauté scientifique. Ainsi, des cycles d'effondrements et de renaissances se sont enchainés durant des siècles à des rythmes variables. Mais ce qui est aujourd'hui clair, c'est que l'impact des sociétés humaines est resté relativement confiné à des échelles régionales jusqu'au 19ème siècle.
Prenons le cas de la mer Méditerranée, mer tempérée considérée comme un "hotspot" de biodiversité vu qu'elle présente une très grande diversité d'espèces. Elle contient environ 7 % des espèces de poissons dans le monde avec une large gamme d'espèces tempérées et tropicales. Selon une étude réalisée pour la Liste rouge de l'UICN plus de 40 espèces de poissons marins présentes actuellement dans la Méditerranée pourraient disparaître dans les quelques prochaines années. Près de la moitié des espèces de requins et de raies (poissons cartilagineux) et au moins 12 espèces de poissons osseux sont menacées d'extinction en raison de la surpêche, la dégradation des habitats marins, la pollution, les prises accessoires et des pêches illicites et les déchets principalement le plastique.
Mot-clés: biodiversité, poissons, mer, pollution, écologie.

**The Mediterranean Sea is empty of its fish or how it will be directed to an irreversible collapse of terrestrial ecosystems.**

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ABSTRACT

Based on scientific theories, the modeling of ecosystems and paleontological evidence, a team of researchers at Simon Fraser University (SFU Vancouver), predicted that the Earth's ecosystems will face an imminent and irreversible collapse.
Anthropocene is a term created and used to indicate a new geological time which would have begun at the end of the 18th century with the industrial revolution, period as from which the influence of the man on the terrestrial system would have become prevalent.
The term popularized by Paul Crutzen, Nobel Prize of chemistry (1995), is used today by part of the scientific community. Thus, cycles of collapses and rebirths were connected during centuries at variable intervals. But what is clear today, it is that the impact of the human societies remained relatively confined with regional scales until the 19th century.
Let us take the case of the Mediterranean temperate sea considered as a "hotspot" of biodiversity as it includes a great diversity of Species Sea. It contains approximately 7% of the fish species in the world with a wide range of temperate and tropical species. According to a study carried out for the red List of the UICN more than 40 fish species sailors present currently in the Mediterranean could disappear in the few next years. Nearly half of the species of sharks and rays (cartilaginous fishes) and at least 12 fish species osseous are threatened with extinction due to overfishing, degradation of the marine habitats, pollution, by-catches, illicit peaches and mainly plastic waste.
Keyword: biodiversity, fishes, sea, pollution, ecology.

**12. Biodiversité des macro-invertébrés des Zones Humides côtières de l'ouest Algérien : Etat des lieux et des connaissances.**

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Résumé
Les zones humides côtières de l'ouest algérien n'ont fait l'objet que de très peu de travaux bionomiques. Les travaux relatifs aux macro-invertébrés benthiques des côtes algériennes sont en général rares, fragmentaires et s'intéressent, pour la plupart des cas, à l'étude d'une seule espèce.
Ainsi, de nombreuses campagnes de prospection dans plusieurs sites côtiers par de nombreux auteurs sont menées, afin de recenser les espèces de macro-invertébrés des fonds côtiers du plateau continental du littoral oranais. Les individus inventoriés, sont déterminés jusqu'à l'espèce. Les résultats obtenus au cours de ces travaux ont permis d'estimer la diversité des invertébrés benthiques et de caractériser les principales communautés. Les Annélides polychètes dominent les principaux groupes zoologiques identifiés, suivis des Crustacés, des Mollusques et des Echinodermes. Toutes ces informations peuvent être structurées dans une base de données à partir de laquelle il deviendra possible d'entreprendre un suivi régulier de cette faune benthique. L'objectif de ce travail est de donner une vision globale des peuplements macrobenthiques des zones humides côtières oranaises, et doit être poursuivie et complétée par une connaissance de la dynamique des populations et des peuplements de cette zone, des fluctuations saisonnières des paramètres physico-chimiques du milieu, afin d'évaluer la capacité de réaction de la vie benthique à de possibles perturbations. Dans ce contexte, l'apport des systèmes d'informations géographiques (SIG) est considérable pour structurer, gérer et exploiter toutes ces données tels que l'information faunistique et sédimentaire, les caractéristiques du milieu (granulométrie, courants) et les résultats des analyses chimiques et microbiologiques. Ainsi, l'analyse des fluctuations, le suivi, la mise à jour sera facilement opérable pour des prises de décision et le contrôle de la dégradation des écosystèmes côtiers.
Mots clés : Macro-invertébrés, zones humides, faune benthique, zones côtières, littoral oranais, Ouest algérien.

**Biodiversity of the macro-invertebrates of the west Algerien wetlands.**

ABSTRACT

The coastal west Algerian wetlands were the object only very few bionomic work. Work relating to the benthic macro-invertebrates of the Algerian coasts is in general rare, fragmentary and is interested, for the majority of the cases, being studied of only one species.
The many prospection campaigns in several coastal sites by many authors are carried out, in order to count the species of macro-invertebrates of the coastal funds of the west Algerian continental shelf. The inventoried individuals are determined until the species. The results obtained during this work made it possible to estimate the diversity of the benthic invertebrates and to characterize the principal communities. Annelids polychètes dominate the principal identified zoological groups, followed crustaceans, Mollusks and Echinodermata. All this information can be structured in a data base from which it will become possible to undertake a regular follow-up of this benthic fauna.
This work whose objective was to give a global vision of the benthic macro-invertebrates of coastal wetlands, must be continued and supplemented by a knowledge of the dynamics of the populations of this area, seasonal fluctuations of the physicochemical parameters, in order to evaluate the capacity of reaction of the benthic life to possible disturbances. In this context, the contribution of the geographical information systems (GIS) is considerable to structure, manage and exploit all data bases as faunistic and sedimentary information, the characteristics of the wetlands (granulometry, currents) and the results of the chemical analyses and microbiological. Thus, the analysis of the fluctuations, the follow-up, and the update will be easily operable for decision-makings and the control of the degradation of the coastal ecosystems.
Key words: Macro-invertebrates - wetlands - benthic fauna coastal zones - Western Algerian.

**13. Valeurs ornithologiques des zones humides urbaines et péri-urbaines de l'Algérie**

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Résumé

De nombreuses zones humides reçoivent directement les rejets des eaux usées des villes et des communes avoisinantes. Ces plans d'eau, bien qu'ils sont souvent très pollués, exhibent une diversité avienne très importante. Parmi ces milieux, nous citerons le Marais de Boussedra (El-Bouni, Annaba), la mare d'Echatt (Chatt, ElTarf), le Lac des Oiseaux (site Ramsar (El-Tarf)), la Dayet El-Ferd (Oran), la Garaet de Sbikha (Tamlouka)….

Dans notre étude étalée sur trois cycles annuels (de septembre 2010 à août 2013), nous avons inventorié tous les mois à raison d'une sortie par quinzaine (soit 36 normalement cela fait 72 ???? sorties) tous les oiseaux d'eau fréquentant ces plans d'eau. Au total 56 espèces appartenant à 17 familles ont été recensés. Ce peuplement est composé principalement d'Anatidés et de Rallidés (43%), de Limicoles (37%), de Scolopacidés (13%), de Phœnicoptéridés et de Laridés (07%). La majorité de ces espèces sont observées durant la période hivernale (oiseaux hivernants 61%, estivants 18%, de passage 13% et considérés rares 08%). Ces espèces utilisent ces hydrosystèmes de différentes manières ; un grand nombre se concentre au centre des plans d'eau alors que de faibles effectifs en quête de nourriture s'observent sur les secteurs vaseux et les zones de balancement des eaux

Nous projetons dans cette présentation de donner dans un premier lieu une check-list plus ou moins détaillée de toutes les espèces d'oiseaux d'eau observées dans les zones humides urbaines et périurbaines de quelques agglomérations algériennes, tout en mentionnant leurs statuts dans le site et en Algérie, puis d'exposer les variations des effectifs totaux des principales familles, tout en indiquant leurs modalités d'occupation spatiale du plan d'eau.

Mots clés: Oiseaux d'eau, biodiversité, statut phénologique, reproduction, zone humide urbaine

**14. Le développement social en contexte de conservation de la biodiversité : à la fois une approche pour le renforcement de l'appropriation des populations et une finalité**

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Résumé
La question de développement social et de conservation de la biodiversité ne cesse pas d'alimenter des débats, tant au niveau des théoriciens que des professionnels. Tellement les conceptions sur les liens développement social/conservation sont nombreuses qu'il est difficile de mettre en place une méthodologie et une approche consensuelles.
En fait, il y a ceux qui soutiennent que c'est essentiellement la gestion durable des ressources naturelles qui pourrait engendrer un développement social. Par contre, il existe également ceux qui voient l'inverse, c'est-à-dire que sans développement social il serait impossible de réussir la conservation de la biodiversité. Ces derniers revendiquent plutôt la centralité de l'homme sur son environnement.
Au regard de ce contexte, il semble important de proposer un point de vue qui pourra élucider ou apporter une nouvelle idée sur cette question.
Le développement social constitue un outil méthodologique et pragmatique qui pourra renforcer la participation et l'implication des populations dans le processus de conservation, notamment en leur qualité à la fois de source de menaces pour l'intégrité de la biodiversité, mais également d'actrices directes de la sauvegarde de la nature.
Ce projet de communication aura ainsi l'ambition de construire un regard pragmatique sur la logique des populations riveraines, leurs rapports avec la nature et la problématique de développement social en contexte de conservation.
Mots-clés : développement social, regard pragmatique, sauvegarde de la nature, centralité de l'homme

**The social development in context of biodiversity conservation: both an approach for the strengthening of the appropriation of the populations and an objective**

ABSTRACT

The question of social development and conservation of the biodiversity does not stop feeding debates, both at the level of the theorists and the professionals. So much the conceptions on the links development social/conservation are numerous that it is difficult to set up a consensual methodology and approach. In fact, there are those who support that it is essentially the sustainable management of the natural resources that could engender a social development.
On the other hand, there are also those who see the opposite, that is to say without social development it would be impossible to make a success of the preservation of the biodiversity. These latters claim rather the centrality of the human on its environment. In this context, it seems important to propose a point of view which can clarify or bring a new idea on this question.
The social development constitutes a methodological and pragmatic tool which can strengthen the participation and the implication of the populations in the process of conservation, in particular in their quality at the same time source of threats for the integrity of the biodiversity, but also in direct actresses of the protection of the nature. This project of communication will so have the ambition to build a pragmatic view on the logic of the local populations, their relationships with the nature and the problem of social development in the context of conservation.

Keywords: social development, pragmatic view, protection of the nature, centrality of the human

Biodiversity

**Oral :**

**Fauniqtique diversity of continental aquatic environments of Algeria**

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ABSTRACT

The largest ecological values of continental ecosystems are expressed through their biological components. In Algeria, these ecosystems are considered primarily for their socio-economic values, this both by policy makers, managers and the public. Ecological functions and biodiversity remained neglected. This study is an update of knowledge of freshwater macroinvertebrates and currently known across the Algerian territory fish. The results from a synthesis of faunal and taxonomic data and our own observations indicate 982 species of invertebrates and 67 species of fish identified across Algeria. This faunal biodiversity varies quantitatively and qualitatively from one region to another. Large differences in distribution between different géographqiues areas appear at the end of the study, reflecting the efforts and sometimes gaps investigations in parts of Algeria. This fauna showed originality at several levels: a somewhat elevated rate of endemic (55 invertebrate species, fish species 6), relatively low compared to that specific variety of Mediterranean Europe and altitudinal distribution quite different from that of Europe .

Keywords : Diversity, inland waters, invertebrates, fish, Algeria

**Trophic ecology of the Dipper (*Cinclus cinclus*) in streams of Western Babors (Bejaia, Algeria)**

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ABSTRACT

The Dipper is a rare bird in Algeria. It is beholden only to streams and mountain torrents. The trophic ecology of *Cinclus cinclus* is studied in the region of Western Babors which lies northeast of Bejaia. For the realization of this work, 45 droppings collected between April and June 2011 were analyzed. They contain 1,191 prey taxa which are divided into four classes, the most important is that of Insects (1128 individuals). Among these, Philopotamidae are best represented with 438 individuals (36.76 %). The most consumed by the Dipper prey taxa are Philipotamidae sp2 and Philipotamidae sp3 with a rate of 20.40% and 11.58% for each of the taxa. The analysis of the sizes of prey shows a preference for taxa of 15 mm which has 284 individuals (23.84 %). They are dominated by Philipotamidae sp2 (243 individuals) and sp3 (138 individuals). The diversity of ingested by the Dipper species is equal to 3.09 bits, and the equal distribution records a value of 0.71. The graphical representation (COSTELLO) diet showed that the Dipper Western Babors is general in its choice of prey.

Keywords: Dipper, diet, breeding period, Western Babors

**The social development in context of biodiversity conservation: both an approach for the strengthening of the 86 appropriation of the populations and an objective**

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ABSTRACT

The question of social development and conservation of the biodiversity does not stop feeding debates, both at the level of the theorists and the professionals. So much the conceptions on the links development social/conservation are numerous that it is difficult to set up a consensual methodology and approach. In fact, there are those who support that it is essentially the sustainable management of the natural resources that could engender a social development.
On the other hand, there are also those who see the opposite, that is to say without social development it would be impossible to make a success of the preservation of the biodiversity. These latters claim rather the centrality of the human on its environment. In this context, it seems important to propose a point of view which can clarify or bring a new idea on this question.
The social development constitutes a methodological and pragmatic tool which can strengthen the participation and the implication of the populations in the process of conservation, in particular in their quality at the same time source of threats for the integrity of the biodiversity, but also in direct actresses of the protection of the nature. This project of communication will so have the ambition to build a pragmatic view on the logic of the local populations, their relationships with the nature and the problem of social development in the context of conservation.

Keywords: social development, pragmatic view, protection of the nature, centrality of the human

**Biodiversity of Macrophytes in the hydraulic basin of Sebou (Moroocco)**

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ABSTRACT

The macrophytes represent excellent bioindicators of the wetlands ecological quality due to the key functions that they ensure in it as primary producers and as bio-habitats. The determination of the exhaustive list of the macrophytes of the hydraulic basin of Sebou (Morocco) is fundamental for botanical knowledge and essential to the calculation of the Biological Index Macrophytes Rivers.
The analysis of the literature data and the botanical determination of the macrophytes taken in 27 hydrological stations ecologically representative of the BHS, has led to an index of 166 taxa (species and sub-species) of which two thirds approximately are hemicryptophytes and therophytes. The list is dominated by seed-plants (79%), and presents only 18% of Bryophytes and 2% of Algae. Among the 56 inventoried families, most specifically diversified is that of Asteraceae followed by Poaceae and Lamiaceae. The common species are dominating (94%), but there exist very rare, rare and vulnerable species.

Key words : Macrophytes, wetlands, bioindication

**Human disturbance affecting sensitive components (waterbirds) of wetlands; a case study on waterbirds in Libyan Ramsar sites.**

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ABSTRACT

The impact of human disturbance on natural ecosystems and wildlife is a worldwide phenomenon and one that is increasing rapidly. Human disturbance is widely regarded as a cause of concern for many taxa, including birds. Disturbance can cause mortality, reduce productivity and affect the movement of individuals. This study investigated some kinds of disturbance that affect waterbirds at the two Libyan Ramsar sites (Ain Azzargha and Ain Ashaghigha) in the eastern part of Libya. The number of waterbirds was significantly negatively affected by the increase of sand collecting sites (habitat change) and trucks movement. Conversely, fishing and recreational activities have no significant effects on waterbirds in Ain Azzaiyana wetland. Habitat change and destruction are the key factors that cause losing of natural ecosystems components.

Key words: Human disturbance, waterbirds, Libyan Ramsar sites.

**Wetland complex of Oum El- Bouaghi region**

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ABSTRACT

The Oum El- Bouaghi region encompasses more than 15 wetlands cover a surface exceeding 16000 ha during the wet season. Among these wetlands, 8 are classified as Ramsar sites which are important wintering sites, staging posts and breeding grounds for Palearctic birds. More than 56 species of waterbirds are wintering and 23 species are breeding in this complex. These wetlands are surrounded by a wide variety of plants represented by 39 families and 117 species. The ecological value of this wetland complex resides in their plant and animal biodiversity. Among the avifauna species, two breeding species of Recurvirostridae whose nests installation dynamic was never been studied. What we propose to develop.

Keywords: Wetland, waterbirds, Recurvirostridae, Breeding, Dynamic.

**Avian biodiversity and water quality in the wet area Dhayat Morsli Oran, Algeria**

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ABSTRACT

Algerian wetlands are almost completely ignored, and they received very little conservation measures. Our study aim is to evaluate the quality of the wetland Dhayat Morsli by using two parameters:
The first is to study the diversity, distribution, status and abundance of bird species in the lake. The census revealed the presence of 21 species including 14 aquatic, among them two near-threatened species; Audouin's Gull Ichthyaetus audouinii and ferruginous duck Aythya nyroca, and vulnerable species; the Marbled Duck, Marmaronetta angustirostris. These birds are distributed according to the quality of the environment and ecology of the species.
The second parameter concerned water. We made study of the physical and chemical quality of the water, to evaluate an eventual pollution that can damage the functioning of the wetland. Three sampling areas were chosen in relation to the ecological niches occupied by the main species of waterbirds, (C) duck, (F) coot and (G) gulls. The results revealed an imminent threat of pollution of the area (C) and (G) and a possible threat to the area (F).
Keywords: Wetland Dhayat Morsli, water birds, biodiversity, water quality.

**Ecology and polymorphism killifish *Aphanius fasciatus Nardo* (Cyprinodontidae) in the Blue Lake (West Algeria)**

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ABSTRACT

Our study focused on the ecology and polymorphism of an endemic toothcarps population, the *Aphanius fasciatus Nardo*. The studied population comes from Lac Bleu in the Integral Reserve of Lake Mellah in the National Park of El-Kala (North East Algeria). This protected species is listed on the IUCN Red List and living in a RAMSAR Site.
We evaluated the morphological polymorphism of the species through the following key: total length, standard length, pre-dorsal length, pre-anal length, pre-pelvic length, pre-pectoral length, caudal base length dorsal base length, anal base length, caudal fin width, dorsal fin width, anal fin width, pectoral fin width, pelvic fin width, pre-orbital distance, post- orbital distance, inter-orbital distance, distance from the caudal peduncle, body thickness, vertical distance, vertical eye diameter, number of lateral lines, number of rows of dorsal fins, number of rows of fins pelvic fins number of lines caudal, the number of fin rays, number of scales in the lateral line and the number of vertebrae. Sexual dimorphism exists in our population.
Statistical analysis showed no significant difference in RNP, FTA, RND, RNA, ELL characters, between *Aphanius fasciatus* population collected at the Lac Bleu (Algeria) and the North Lake of Tunis (Tunisia).
A study of gastric content and monitoring of flora and microfauna of the lake were conducted to better define its diet. Comparing the speed of predation and predation rate of this species to those of an invasive species Gambusia holbrooki predict its ability to adapt to the introduction of this species in its environment. A monitoring of the Blue Lake has helped identify the main threats that suffered the species in its natural environment.
The *Aphanius fasciatus* should have a protection plan in view of the number of relics populations in Algeria to prevent its complete disappearance of the natural environment as it was the case of Aphanius apodus in Constantine (Northeast, Algeria).

Keywords : *Aphanius fasciatus*, polymorphism, diet, threats, Lac Bleu, Algeria.

**Contribution to the study of the spatial distribution pattern of some species of waterfowl in the conditions of Lake Tonga (El Kala National Park, North East of Algeria)**

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ABSTRACT

The problem that we have adopted is inserted through a contribution to the study of the pattern of spatial distribution of individuals in a waterbird population in their habitat space. Our study site is located at Lake Tonga (North -East of Algeria). This choice is motivated by the importance of this Ramsar site which attracting a lot of scientific and economic for the implementation of measures for the protection and conservation of its biodiversity. Our study focused on a population of waterbirds composed of summer and sedentary. The sampling protocol is based on sampling a set of points scattered on a grid plan. swabs are made according to several transect.

Some mesological measurements were performed to describe the medium. The prediction map describing the spatial distribution model are established using the principle of the method of stochastic interpolation (Ordinary kriging). The verification of the presence of a structure and a spatial organization is emphasized by using the auto-correlation test (I of Moran). The results indicate the absence of a random distribution in the organization of the most studied species. The distribution is structured in a logical that express the ecological sizes of the habitat.

Keywords: Spatial Analysis, Ordinary Kriging, Avifauna, Lac Tonga, Autocorrelation

**Impact of Colonies of Yellow-legged Gulls on Diversity and the Organization of phytocenoses Islanders area Bejaia (Bejaia, Algeria)**

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ABSTRACT

The nuisance caused by birds nesting on island flora of the southern Mediterranean shore is studied. This study is being conducted on the islands of the west coast of Béjaia. The organization of plant communities of the study sites was developed by searching the factors responsible for patterns phytocénotiques. The overall abundance-dominance analysis revealed a flora adapted to an often dissemination zoochore type accompanied by a high rate of therophytes to ruderal affinities sometimes invasive. Droppings of seabirds breeding cause a significant contribution of nitrogen and phosphorus derivatives , which enriches the soil by these compounds promotes and encourages the development of ruderal species , nitrophilous resistant to disturbance. The chemical analyzes of the fine fraction of soil showed acidic pH in some places. This modification of the substrate corresponds to an enrichment caused by Gull colonies that have unfavorable effect for xero - halophytic and favorable for halo - and nitrophilous.

Keyswords : biodiversity, phytocénoses, Yellow-legged Gull, impact, islands, Béjaia

**Ornithological value of wetlands of high plains of Constantine, for Lake Timerganine**

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ABSTRACT

Biodiversity of the Mediterranean region is exceptionally high due to its location between three continents, its geology, its varied climate and its rich habitats. One of these habitats is the complex of wetlands of high plains of Constantine, which contains twenty sites (chotts sebkhets and garaets) of varying sizes scattered over 150 km from east to west and mainly distributed between four (04) province (Wilaya) namely Setif, Khenchela, Batna and Oum El bouaghi. The latter has a wetland area which amounts to 160,000 ha, unfortunately remains poorly studied. We propose through this communication to review the wealth avifauna one of these environments namely lake Timerganine which was classified in 2010 as a wetland of international importance. Monitoring conducted over a period of three (03) winter seasons (2004/ 2005, 2006/2007 and 2007/ 2008) has allowed us to count 16 families represented by 51 species. The most dominant family is Anatidae that it has 13 species on the 16 recorded in Algeria including five (05) are protected that is, the ferruginous duck, shelduck, the ruddy shelduck, Marbled Teal and' white-headed Duck. Latter is observed there throughout the year with a maximum of 84 individuals recorded at the end of December. Contrary to popular belief, our study reveals the nesting of White-headed Duck in wetlands in the highlands of eastern Algeria. A total of sixty-seven nests were found including 44 in lake Timerganine which is the pincipal site of reproduction at the region. The number of broods recorded during this period was 58 with a number of chicks from 4 to 8 Individuals.

Keywords: wetland, high plains of Constantine, Avifauna, Anatidae, Monitoring, White-headed Duck, nesting.

**First data on the breeding ecology of Dipper, *Cinclus cinclus* in Algeria**

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ABSTRACT

In Algeria, the Dipper *Cinclus cinclus* breed along rivers mountains of Kabyl's Djurdjura and Babors (Ledant and *al*., 1981; Bellatreche, 1994). Observations collected during 3 years of study of the nesting behavior of the Dipper in Western Babors are presented. Breeding territories are occupied in mid-February. The date of first laying clutches varies from year to year. In 2010, the date of first egg laid is 26 March (85 days), but in 2011 the female had laid her first egg on April 11 (101 days). Thus in 2012, the breeding season is much later, when the female Dipper had laid her first egg on April 15 (106 days). Nests installed in the crevices of rocks contained an average of 4 eggs per nest. Breeding success recorded a rate of 3 chicks per nest hatching as well as flight. The number of plant species used for building nests varies from 10 to 12 species, where 9 plant species are often selected for building the nest.

Keywords: Dipper, breeding, laying date, hatching success, Bejaia

**Ferruginous duck *Aythya nyroca* in the wetlands of the Algerian North-East (case of the Complex of Guerbes-Sanhadja - Skikda)**

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ABSTRACT

The Numidia, located in the North-East of Algeria, is a famous for their wetlands which are divided into two great complexes separated by the Oued Seybouse: the eastern Numidia composed of Annaba complex and El-Kala, the western Numidia represented by the wetlands complex of Guerbes-Sanhadja.
The eco-complex of Guerbes-Sanhadja is composed of twenty wetlands with an international interest owing to the primordial role that they play in the maintain of the waterbirds biodiversity. They are thus so widely attended, from where Garaet Hadj-Tahar, Beni- Mhamed, Dahriya, Hawass, Messaoussa and Sidi-Makhlouf which each one hosts a different effective of waterbirds species. The Anatidea represented mainly by different species such as: the Ferruginous duck Aythya nyroca with a number of 605 individuals registered during the month of December 2012.
The study of diurnal behaviour activity showed that the sleeping holds 42.47% of total is the dominant activity, demonstrating the role of daytime delivery of this wetland. It was followed by swimming (20.63%), feeding (19.32%), grooming (9.37%) and flying (7.74%). Courtship activity has a very small part and it was observed at the end of the rainy season.
We propose in this communication to give an overview on the first data collected on the effective and the spatial distribution of this species in this wetland complex.
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Keywords : Wetlands, Guerbes-Sanhadja, Ferruginous duck, spatial dispersion.

**Diurnal activity budget and breeding ecology of the White-headed Duck *Oxyura leucocephala* at Lake Tonga (North-East Algeria)**

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ABSTRACT

The White-headed Duck *Oxyura leucocephala* is one of the most threatened duck species in the world. In the last decade ecology, behaviour and breeding biology of this species attracted considerable scientific interest across its geographic range. In order to fill some gaps in the knowledge of North African populations, diurnal and seasonal activity budget and breeding ecology of the species were investigated at Lake Tonga (Ramsar site), El Kala, Algeria. The species is resident at this site and its numbers were the highest in January. Throughout the year, ducks spent the following proportion of time on these activities daily: 62.41% resting, 18.50% locomotion, 11.04% feeding, 5.56% preening, 0.53% flying, 0.13% agonistic behaviour and 1.83% courting. Substantial differences were noted in the activity budget between wintering and breeding seasons. Resting and locomotion constituted 89% of all the activities in the wintering season, while resting, locomotion and feeding were dominant activities in the breeding season accounting for 86%. Throughout the year, resting peaked in the afternoon, while feeding reached its maximum at noon. As to the breeding ecology, ducks started laying eggs in early May and hatching in the middle of June. The mean clutch size was 9.41 ± 5.67 eggs, ranging between 1 and 11 eggs with a super clutch of 22 eggs giving the evidence of conspecific brood parasitism. Hatching success was low (55%) because of nest desertion, egg predation and egg infertility. The clutch size and hatching werepositively correlated to the nest depth, the mean of which was 7.92 ± 4.94 cm.

Keywords: breeding; daily activity budget, White-headed Duck, endangered, Algeria.

**Ecology and status of the Marbled Teal Marmaronetta angustirostris in high plains eastern Algeria.**

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ABSTRACT

For the management and conservation of birds and their habitats, which is nowadays a major priority for the preservation of ecosystems, a study on the phenology of Marbled Teal *Marmaronetta angustirostris*, was conducted during the period from September 2010 to June 2012 in the complex of high plains of eastern Algeria. The Marbled teal *Marmaronetta angustirostris* is a globally threatened species especially in Western Mediterranean whose status is currently in a decreasing trend. While population size and status are well surveyed in some areas of the species geographic range, others like Algerian wetlands are still not known. Population estimation and activity budget of the species were studied in high plains located in Northeast Algeria during two subsequent wintering seasons. The wintering population showed a significant decrease in numbers from the first to the second year with a peak of 763 and 270 individuals, respectively. This variation was probably due to the abrupt increase in the water level of the wetland and the scarcity of the vegetation cover in the second year. The time-activity budget was dominated by resting followed by locomotion and feeding. Preening, flight, and courting were rarely observed counting for less than 5% of all activities. The species preferred shallow parts of the wetland but used also terrestrial habitats near the shore.

Keywords: Marbled teal, *Marmaronetta angustirostris*, activity budget, high plains, Algeria.

**Postural adjustment and distribution of a colonial waterbird *Ardeola ralloides*, wetland complex of El Kala (Northeast Alegria)**

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ABSTRACT

The feeding strategy of Squacco heron (*Ardeola ralloides*) was studied at the Lake Tonga in 2011 during the period of reproduction. Monitoring the postural adjustment of the great colonial waders including Heron is made on trophic habitats.We noted at each trophic habitat size and composition of aggregations (group), postures used hunting, body movements adopted and the hunting success. trophic habitats Operated by the Squacco heron this site : wet meadows (50 %), the water (43 %) and the lake shore (7 %). The Squacco heron feeds much alone (58 %) than in group (42 %) using a variety of feeding techniques that allow him better use of food resources these include the lookout posture (26 %), upright posture (24 %), and the erect posture (22 %). To hunt, our study design did practice slow walking (100 %). Finally, its hunting success is 0.15 ± 0.06 prey/pecks/min.

Keywords : Habitats trophic, Hunting success, Postural adjustment, *Squacco heron*

TOPIC BIODIVERSITY Climatic Change

**Oral :**

**Changing of the diversity and status of waterbirds of Lac Boughzoul: Impacts of habitat changes and human activities**

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ABSTRACT

By its strategic situation in the center of the country, Lac Boughzoul plays a key role as wintering ground, stopover post and breeding area of many waterbirds. Our study aims to assess the diversity and status of aquatic birds with emphasis on changes in species composition and phenological status. The analyses of the avifauna biodiversity and their status reported by former studies and our monitoring carried out in the same region during the period 2010 to 2012 showed a decrease in the species diversity and changes of the phenological status of several species (*Gadwall Anas strepera, Shelduck Tadorna tadorna*) as response to the habitat modification and degradation. In addition, many other species have disappeared at the site (Black-necked Grebe *Podiceps nigrocollis*, Common *Pochard Aythya ferina*). However, other species have retained the same status with a decreasing or increasing in the abundance (Black-tailed Godwit *Limosa limosa*, Avocet *Recurvirostra avosetta*).

Analysis of the spatial evolution of natural habitats shows that there are several causes of degradation of their qualities such as: agricultural expansion, overgrazing, waste water disposal in the wetland and the work of planning in the context of the implementation of the new city of Boughzoul (new capital of Algeria). As perspective, it is urgent to understand the impacts of anthropogenic disturbance on the quality of habitats and the biodiversity of wetlands in Algeria and especially in arid regions which are highly sensitive.

Keywords: Biodiversity, Waterbirds, Wetland, Status, Habitat, Impact, Boughzoul, Algeria.

**The National Park of Djurdjura as a wetland and center of biodiversity**

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ABSTRACT

The national park of Djurdjura is a protected area which is classified as a biosphere reserve (MAB) in December 1997. Its particularity is the geological nature of its chain. It has a particular morpho-structure in Algeria and even in Africa. Effectively, the karstic nature of this alpine chaîne with calcareous roc permits the infiltration of water which resort like sources. That's why it's qualified as a perfored reservoir of water. This water permits the development of fauna and flora biodiversity. Because of its richness in many species of flora and fauna, especially endemic ones, it's considered as a key biodiversity area. The wetlands in Djurdjura are constituted by rivers, sources and prairies. The streams or rivers and the Goulmim Lake which is the lonely one in Algeria give life to many mammals, birds, plants, particularly in ripisylves. Unfortunately, this richness is threatened by human (Fire, pollution) and global warming. As consequences of these threats, some of these species can be extinct, endangered or will be vulnerable in a near future. .That's why, conservation measures must be taken if we really want to save it from desperation. Policy conservation is needed by an approach of monitoring and sustainable development.

Key-words: Biosphere, biodiversity, wetlands, karsts, sustainable development.

**Analysis of the diversity of aquatic birds chotts senior Algerian plateaus related to global change.**

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ABSTRACT

Wetlands are among the ecosystems that need to be managed to maintain their large variety of values and functions. Today, Algeria has 50 wetlands of international importance, on the list of the Ramsar Convention on the Conservation of Wetlands of international interest, especially as water birds habitat. Wealth of water birds in Algerian ecosystems, of high plateaus including chotts was analyzed on censuses during over 30 years; we observed a net decrease in both specific and individual wealth. The analysis of changes in temperature and precipitation in the central high plateau region, namely Djelfa, demonstrates a changing climate in semi-arid regional level in the 1930s to the arid early 21st century correlated with the variation of the diversity of birds. This region currently has relatively limited water resources, namely only the rise of groundwater in the rainy season.

Key-words: high plateaus, chotts, birds, diversity, climate change.

# Biodiversité :Ecology of vectors.

## Oral :

**Wildlife, Parasites, Health and Environment**

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ABSTRACT

Wetlands have very long been experienced by man as danger/risk area, diseases, outbreaks of «miasma " . Mediterranean wetlands, such as the North East Algeria (or southern Mediterranean), regions which present a particularly favorable context to the development of few human diseases due to high faunal biodiversity, (may be potential hosts amplifiers pathogenic), populations of mosquitoes and ticks very important, potential vectors of pathogens and human populations growing throughout the Mediterranean coastline. This poses both problem in public and animal health, in conservation of wildlife and in habitats.

The scientific approach of our work, based on the coupling of descriptive (in situ) and experimental (laboratory). Samples in several sites with different environments have been collected from natural populations "wildlife" from different phylogenetic levels (Reptiles, Birds and Mammals) to know the biodiversity of their parasites.

The originality of the results resides in interdisciplinarity (biodiversity, conservation biology, management of natural populations, Microbiology, Bioinformatics and Health) in order to rally the concept of the relation and the system "Biodiversity and Health".

Key Words: Wildlife, Biodiversity, Parasites, Health, Northeast of Algeria

**Directory vector pathogens in wetlands Algeria**

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ABSTRACT

Infectious agents vectorized in wetlands represent a real danger to public health by the existence of a diversity of various animal species and secondly by the presence of migratory birds transported vectors and infectious agents as well as bacterial, viral and parasitic.
Among the agents identified in Algeria in the wetland we note the presence of:
Lyme borreliosis, very dangerous zoonotic disease transmitted to humans by the bite of hard ticks Ixodes genus Rickettsial, bacterial disease transmitted by hard ticks of the genus Hyalomma, Rhipicephalus and Dermacentor.
Ehrlichia sp isolated from Ixodes ricinus
West Nile virus whose competent vector is Culex pipiens and natural reservoir is migratory birds
Virus Chikunguniya whose competent vector Aedes albopictus is found in places of high Kabylie
Phlébivirus with Toscana and Sissilian virus transmitted by Phlebotomus whose presence is located in the north of Algeria.
This paper describes a summary of the repertoire of infectious agents transmitted by vectors in moist areas of Algeria.

Keywords : Wetlands algeria, Agents of Infectious diseases, Vector borne infectious diseases, Ecology

**Effects of ectoparasites on reproductive performance, parental feeding and nestling growth of the Atlas Flycatcher Ficedula speculigera in Algeria**

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ABSTRACT

The effect of ectoparasites on the growth and survival of nestling Atlas Flycatcher Ficedula speculigera breeding in next boxes were studied during two breeding seasons (2011 - 2012) in the EL-Kala National Park in North-East Algeria. The results show that mites (Dermanyssus spp.) are the most abundant parasites and were found in 60.25% of all nests. Atlas Flycatchers chicks in infested nests were significantly smaller and fledged at an earlier age than chicks in nests where no mites were detected, indicating that ectoparasites can reduce the quality of host offspring. Despite this effect, fledged success and nestling mortality were not correlated with nest infestation. No significant differences between infested and uninfested nests in laying date, clutch size, egg size and the number of young hatched were observed. Neither did the laying date which may greatly affect precedent parameters. No significant relationships were found between ectoparasite loads and parental feeding rate or phenotypic characteristics. However, parents increased visiting rate without prey in infested nests. This indicated that Atlas Flycatcher did not compensate for higher parasite loads by increasing feeding but by increasing nest sanitation.

Keywords : Ficedula Speculigera, Ectoparasites, Nestling Growth, Nestling Mortality, Algeria.

**Mosquitoes Diptera, Culicidae of Algeria: inventory and risk of infection**

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ABSTRACT

This paper presents an inventory of the *Culicidae fauna* vector of arboviruses and other pathogens collected in almost 28 departments on the four corners of Algeria and those reviewed from the literature and providing an overview of the emerging diseases situation in this country. There were 3 families, 8 genus and 32 species collected including 3 new records; a larvae of Culex territens captured in 1750 m of altitude. Also the first entomological report of Aedes flavescens and the confirmation of the presence of *Aedes albopictus* (Dengue, Chikungunya and other arboviruses vector) in Algeria which is considered as a second capture in our country and widely in the Maghreb. During the Fall of the next year, an invasion mosquitoes was reported in the wetland of Reghaia whereas after entomological identification mosquitoes belonging to the ornitophilic species Culiseta litorea, Behavioral change has been linked to disturbance of these creatures in their natural habitat due to the sanitation works. The large ditribution of Anopheles multicolor in the south (Naama, Ghardaia, and Tamanrassat Tindouf) the dominance of this species push us to think in its role on the transmission of potential pathogens agents !!!!

Keywords: Mosquitoes, Culex, Anopheles, Aedes, Culiseta

**Identification and seasonal dynamics of ticks in wild boar *Sus scrofa* in the extreme north-eastern Algeria.**

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ABSTRACT

During a period of two years from April 2011 to March 2013 and for the first time in Algeria, a study was undertaken to identify ticks in wild boar in the extreme north - eastern Algeria. A total of 3266 ticks were collected and stored in the tubes containers of ethanol at 70 °. Thus, 111 wild boars were concerned by this study and, 80 were found infested with ticks giving an infestation rate of 72.07%. The highest rate of infestation was observed in summer and spring. The infestation of wild boar depends very significantly from the tick species, seasons and altitude (P<0.00001). The highest rate of infestation was observed for the species Rhipicephalus turanicus (62.16%) followed by the species Dermacentor martginatus (36.03%), Hyalomma marginatum marginatum (6.3%) and end Ixodes ricinus (3.6%). Taken together, these results contribute to the improvement of knowledge of wildlife Ixodidians Algeria to improve control methods.

Keywords: *Boar, Algeria, Rhipicephalus turanicus, Dermacentor martginatus, Hyalomma marginatum marginatum, Ixodes ricinus*.

**Ectoparasites in nests of the white stork *Ciconia ciconia* in wetland of El-Tarf (Algeria).**

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ABSTRACT

The nests of the white stork is a home to a multitude of small arthropods, especially during the hottest months of the arrival of the birds on their breeding. Particulary mites dispersed by dung beetles, including the family of 'Scarabaeidae' or manure during the construction of the nest. At the wetland of El- Tarf, on all twelve nests of white stork *Ciconia ciconia*, we collected between September and November, 150 soft tick and mite Mesostigmata, Uropodinae Polyaspididae representing 90 % of the majority of specimens collected.

We identified 2.66% of Ctenocephalides 1.33 % of Pseudoscorpions and 0.66% Mallophagae. Laemobothriidae. The rest are heads of ants, beetles Scarabaeidae Aphodiidae, Aphodiidae, Carabidae, Histeridae, Anthocoris Heteroptera, isopods woodlice. Nest of white stork, represent an ecological diversity, species are transmitted from the ground nests by different building materials it collects throughout his entire nesting.

Keywords: White Stork, *Ciconia ciconia* nest moth, Ctenocephalides, wetland El- Tarf, Algeria

## Atelier III : WETLAND (Pollution, Protection and Management) :

**Impacts of water management and climate change on the ecosystem of the Oued Seybouse (NE Algeria).**

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ABSTRACT

Seybouse drains a vast watershed of 6400 km2; it resulted from the confluence of the two wadis Charef and Bouhamdene. The first arises in Sellaoua by against the second comes from the mountains of South Guelma. These two rivers thrusted large amounts of water, thus explaining the high rates recorded at different gauging stations. In addition, the Oued Seybouse receives all wastewater agglomerations crossed by the river. These contributions are insignificant compared to record especially during the rainy season flows. However, in the early '80s, a dam is built at the Oued Bouhamdene, which result in the catchment to supply the Oued Seybouse, thus echoing through lower rates at the course of water.
This decrease in water intake amounted to 2.27m 3 / s (17%), of the overall flow rate Seybouse. Moreover, decrease rainfall and the contribution of wastewater accelerated the degradation of water quality. Note that after the impoundment of the dam, irrigation of agricultural perimeter Guelma is dropped from the water of the dam, these are dropped from the end of May to end of October but the face of declining rainfall, crops are irrigated from sewage carried by the Oued which explodes the population of the dangers, especially after consumption of products that do not require cooking.
Analyses showed the presence of contaminants such as iron, manganese, zinc, copper and nutrients at the level of the upstream zone (region Guelma) against by the downstream zone is marked by the presence of pollutants such as of chromium, lithium, iron, manganese and nutrients.
These pollutants for both organic metals indicate that the region is agro-industrial use. Apart from anthropogenic pollution in the region is also characterized by a natural pollution formations outcrop, they are rich in minerals such as salt-bearing calcite, aragonite and anhydride give the water a salinity increases in dry periods, marked by high evapotranspiration.

Keywords: Pollution, Upstream, Downstream and Climate Change, Agro-industrial

**Variability and Evolution decennial temperatures and surface salinity in the Mediterranean**

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ABSTRACT

Decadal variability and evolution of temperature and salinity in the Mediterranean Sea surface.
The objective of this study is to analyze the spatial and temporal variations of surface temperature SST and surface salinity SSS of the Mediterranean Sea. The analysis aims to research possible trend in both parameters during the decades until the seventy of the eighty ten years. Data is extracted from the database Med-Atlas 2002 data. From these data we returned SST and SSS using statistical tests namely the analysis of variance, regression and triangulation. The result is a complete set of data and continuously over the period 1955-1999 for the Mediterranean. The mean fields for the entire period calculated for the different areas showed that their variability are clearer in areas of forming deep waters than elsewhere. Previous areas are characterized by a very low TSM and the lowest SSS. The warmer surface water and saltier occupy the southern Mediterranean. Average seasonal variations in SST are 14 ° C and SSS are 3 psu. The western basin is characterized by an increase in SST during the period 1975-1990. SSS variable for the Mediterranean tends to increase during the period 1982-1995. This trend is explained by high evaporation and low rainfall for this region. Through this study we can conclude that the Mediterranean has been a strong trend in climate variability with drought during this period.

Keywords: Surface Mediterranean SST; SSS; variability; decadal Evolution.

**Blooms of toxic Cyanobacteriai in freshwater in East of Algeria**

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ABSTRACT

Since some years, the eutrophication in water reservoirs and rivers has for consequence the appearance of Cyanobacteria blooms. Several of which can produce two families of toxins: neurotoxins and hepatotoxins. Studies undertaken in dams and natural lakes, particularly in the lake Oubeira and the dam Cheffia (East-Algeria), showed that these media evolve quickly to eutrophication, following an increased productivity stimulated continuously by the fertilizer contributions and a change of increasingly dry climate. The appearance of toxic Cyanobacteria in water bodies used either as drinking water or for recreational purposes may present serious health risks for the human population. The biodiversity of toxic Cyanobacteria and their toxins, undertaken in the lake Oubeira and the dam Cheffia, showed that the Microcystis is the most implied genus in the formation of cyanobacterial blooms in these freshwater bodies. The concentrations of microcystins, estimated by the PP2A method, are very strong during the period of Cyanobacterial blooms in summer and at the beginning of autumn.

Keywords : Cyanobacteria, Lake Oubeira, Dam Cheffia, Algeria.

**Cross-community scaling of benthic macroinvertebrate guilds: a functional approach to community organisation in inland waters of Southern Italy**

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ABSTRACT

The search for simple and effective descriptors of biological ecosystem components is a major challenge of monitoring aquatic ecosystem health. There have been discussed the relevance of body-size-related descriptors of benthic invertebrate guilds in monitoring the health of aquatic ecosystems. The rationale is that macroinvertebrate body-size relates individual responses to disturbance pressures through individual energetic, population dynamics and species coexistence responses.
The mechanistic relevance of individual body-size on coexistence relationships still requires field and laboratory tests and community level scaling-up. The different proposed models of size abundance distributions offer promising approaches to scale-up and address the overall role of individual body size in community organisation.
One of the relationships between body-size and abundance in ecology is the cross-community scaling relationship (CCSR), which use ecological energetics to evaluate the overall body size based responses to actors affecting energy flow in ecosystems; external perturbations and pollution are main anthropogenic-based factors acting on energy flow.
Field experiments on freshwater and transitional water benthic macroinvertebrate guilds from perturbed and unperturbed ecosystems of Southern Italy (Apulia and Sardinia areas) were designed to test: i. the cross-community scaling relationship relevance of body-size-related constraints on the organization of detritus-based benthic guilds through the relationship between the average size of an individual in an assemblage and the total community density; ii. the sensibility of statistical CCSR descriptors to perturbed conditions, compared to unperturbed ones.

**Quantitative study of the phytoplankton of the Bizerte lagoon**

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ABSTRACT

Bizerta Lagoon is a salt water lake located in the South of the city of Bizerta, in the North of Tunisia. Communicating with the Mediterranean Sea by a channel of seven kilometers, it is connected to Lake Ichkeul (a fresh water lake) through the Wadi Tinja. The Lake stretches 120 km2 and has an average depth of seven meters up to fifteen meters. Many activities are related to this Lagoon: industry, aquaculture, fishing and marine traffic. The study of spatial and temporal fluctuations in the density of phytoplankton in four stations, located in this lagoon, revealed the existence of two important peaks. The first occurred at the beginning of September and reached 1650000 cells l-1 while the second occurred at the end of October and was about 1850000 cells l-1. Average phytoplankton densities ranged between 9000 and 560000 cells l-1. Five phytoplankton classes have been identified. The dominant species mainly belong to the class of diatoms and dinoflagellates.

Keywords: Bizerta lagoon; phytoplankton; Diatoms; dinoflagellates.

**Contribution to the study of macrozoobenthiques communities associated with *Zostera noltii* on the mudflats of Kneiss (Gulf of Gabes, Tunisia) Islands**

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ABSTRACT

The foreshore Kneiss islands are largely colonized by seagrass Zostera noltii. Leaves and rhizomes of this phanerogam are preferred substrates for benthic species that contribute to the primary production of the seagrass and are a direct source of food (herbivores, scavengers) and indirect (carnivores, deposit feeders, suspension feeders) for many animal species. This work aim to describe diversity of macrozoobenthic species associated with Zostera noltii in the mudflats of Kneiss islands. During this study, three sampling campaigns were carried out at low tide during the years 2012 and 2013. A total of 23 stations were sampled with a 0.0225 m2 corer. This investigation has in a first inventory 132 species of benthic macrofauna from several zoological groups including molluscs (38%), polychaetes (21%) and amphipods (14%) are the most dominant groups number of species. The Hierarchical Clustering (HAC) based on the abundance of the species showed the presence of four groups of stations with similar characteristics bionomic. The relatively high value of stress (0.11) shows a fairly good representation of the proximity between the different stations according to Kruskal (1964). Overall, station groups already defined by the hierarchical clustering can be distinguished in this analysis. This study shows an important diversity of macrozoobenthiques communities associated with Zostera noltii. In addition, the temporal variation of macrozoobenthiques communities resulted in an increased number of species during the summer compared to the winter season.

Keywords: Kneiss islands, mudflats, macrozoobenthic Communities, Zostera noltii, biodiversity.

**Inventory of molluscs trawling the Algerian coast**

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ABSTRACT

An analysis of catches by professional trawler fleet between 1999 and 2010, and a compilation of previous data taken between 1924 and 2004 show the presence on trawling funds of the Algerian coast 573 species representing 9 polyplacophora 290 gastropods 226 bivalves, 8 cephalopods and 4 scaphopods, which are divided into 157 families and 333 genera. It is noted that several genres and even more families are monospecific 61 families with a total of 36 families belong to gastropods, 18 bivalves, cephalopods 3 and 2 for each polyplacophorans and scaphopods. These 61 families represent only 10.65% of the overall diversity of molluscs from the Algerian coast. The Rissoidae (26 species), The Nassariidae (18 species), Muricidae (15 species) Trochidae (15 species), Naticidae (11 species), Mangeliidae (10 species), Collumbellidae (8 species), Fissurellidae (8 species), Buccinidae (7 species), Cerithiidae (7 species), Patellidae (7 species) and Pyramidellidae (7 species) are best represented in gastropods , bivalves : the Veneridae (29 species) the Mytilidae (21 species), Cardiidae (15 species), Pectinidae (14 species), Montacutidae (10 species), Tellinidae (9 species), Arcidae (8 species), Ostreidae (7 species ) the Astartidae (6 species) and Nuculidae (6 species) are best represented. In cephalopods, there are four main families: Sepiolidae (9 species), Octopodidae (9 species), Loliginidae (6 species) and Sepiidae (5 species), while the family Dentaliidae (6 species) is the only family that is best represented in scaphopods and family Chitonidae is the main family with 3 species. These 29 families represent 53.93 % of the total diversity of molluscs identified on the Algerian coast.

Keywords: Mollusks, trawling Fund, Algerian coast

**Physical chemistry and trophic levels of two water level of the wetland complex of El Kala Tonga and Oubeira**

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ABSTRACT

This study focuses on the determination of physico-chemical characteristics and assessing the level of eutrophication of freshwater 2 shots ( Oubeira and Tonga). The physico-chemical parameters are measured monthly temperature, pH, dissolved oxygen, nitrite, nitrates, ammonia nitrogen, orthophosphate, suspended matter and chlorophyll a. The content of the latter is used as a good indicator of the level of eutrophication. The results of measurements of physico-chemical water parameters show seasonal variations. The temperature is one of the parameters that responds to climate change, because the depth of the 3 bodies of water is low. With reference to the threshold values of the trophic state established on the basis of the levels of chlorophyll a, we can consider the waters of two water as eutrophic to hypertrophic according to season plans We note , in fact, one of hypereutrophie Oubeira waters in summer and spring period , the eutrophication of the lake Tonga is found only in autumn , as in other seasons they are hypertrophic .

Keywords : physicochemical, eutrophication, Oubeira, Tonga, El Kala.

**Contribution to the analysis of the spatial distribution of phytoplankton in brackish water. the Case of Lake El Mellah (El Kala National Park, Algeria).**

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ABSTRACT

Our study in spring 2013 at the El Mellah lagoon, in north-eastern of Algeria, focused on evaluating the richness of phytoplankton population and the analysis of spatial distribution on the horizontal plane based on a network 42 sampling points randomly distributed. A study of the spatial structure of some physico -chemical water parameters (temperature, pH, dissolved oxygen, redox, conductivity and turbidity potential) was performed simultaneously. The preparation of maps of prediction models parameters studied based on the principle of interpolation by kriging was used to determine the spatial organization model of population parameters. A random spatial variation was found for some descriptors physico -chemical (dissolved oxygen, redox potential and turbidity). The spatial distribution of pH, conductivity, temperature as well as the richness and diversity of phytoplankton including diatoms follow a distribution positive gradient from north to south of the lagoon. In terms of structure, the phytoplankton community is characterized by a higher number of taxa of Bacillariophyceae (62%) whose genres Coscinodiscus, Synedra, and Gyrosigma Bidulphia are the most abundant, followed by Dinophyceae (15 %) of Chlorophyceae (13 %) and Cyanobacteria (8 %). Streptophycophytes are the least represented (2%).

Keywords : El Mellah lagoon, phytoplankton, spatial distribution, physico- chemical parameters.

**Evaluation of physic-chemical and bacteriological pollution of water from Lake Birds (Ramsar Site, Wilaya of El-Tarf, North-East of Algeria)**

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Abstract

A policy of effective and coherent water must take into account the vulnerability of aquatic ecosystems and wetlands because their equilibrium is strongly influenced by the quality of runoff and discharges flowing into it. Eco- wetland complex of El -Kala region consists of ten shots a fresh international interest.
Lake Birds is one of the most diverse places in the region. The population explosion and economic growth have driven undoubtedly increased demand for more water far exceeds the resources available, and nothing indicates that the drought over the past two decades give way to abundant rainfall.
The water of this agroecosystem, despite its status as a Ramsar site and although it welcomes domestic waste throughout the municipality of Lake of birds is constantly used by residents for intensive irrigation in the surrounding vegetables.
The aim of this work is to determine the physic- chemical and microbiological quality of water trickling and releases that feed the wetland Algerian coastline is subsequently widely used in irrigation.
The physic-chemical point of view, a significant difference in rates and levels measured for each parameter studied. In most cases it exceeds required standards for surface waters. These concentrations indicate a source of organic pollution that should be followed.
Our results of microbiological analyzes expose us fecal contamination of the agroecosystem ; reported by high concentrations of fecal coliforms, fecal streptococci. Kind of perspective isolated amounts of germs and microorganisms, they exceed the required standards for surface water making it unfit for irrigation.

Keywords : pollution, bacteriology, Lake of birds, agrosystem, irrigation, Ramsar site.

**Impact of the creation of the new city of Boughzoul on habitats and populations of vertebrate in lake and the dam.**

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ABSTRACT

The complex of wetlands of lac of barrage of Boughzoul formed by a lac of barrage ; classified as a Ramsar site, dayet Elkerfa, dayet elkahla, dayet elkorfa, dayet elbagra and dayet elkissria. Constitutes a wetland in an arid steppe region, it's now subjected to a plane of management for the construction of the new city Boughezoul.
Our contribution is to study the impact of the project of the creation of the new city of Boughzoul which induces an imbalance within the entire ecosystem, namely in natural habitats that are characterized by an interesting flora belonging to a different strata, tree, shrubs and herbaceous. In flora, as well as the water quality.
To do so, we have produced thematic maps by the Map info software for an identification and distribution of these habitats and these different plant and animal groups,
Our results showed, after a comparison between the produced maps and the final map of the project, a conversion of natural habitats to halophyte vegetation in areas of reforestation (olive trees), which is the loss on the scene of a vegetation considered by (Ozenda, 2004) very rare in Africa as Atriplex halimus, Suaeda fruticosa, Salsola siebere, Halocnemum strobilaceum and the disappearance of certain species of birds , especially breeding species.

Keywords : Boughzoul, GIS, thematic map, distribution, natural habitat.

**Socio-economic and perception management in arid zones wet Issues: Case chott Melghir and Merouane**

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ABSTARCT

Several studies have been made on the value of wetlands in wet environment, and their disappearance due to their overuse by humans. However, little works were directed towards salt lakes. Chott Merouane and Melghir are among the largest protected salt lakes in Algeria. The objective of this work is to understand the interactions between the different socio-professional sectors and company-Chott in order to determine the socio-economic stakes, and what effects can have in long-term in the environment especially on biodiversity. A socioeconomic survey was adopted to do this work. The results showed that there are three economic stakes near to the wetland, agriculture, livestock, and salt production; the three activities are of great interest to the local population and even national. Each activity tended to use the area to their own way, this situation has created a conflict between the multi-users. The surveyed populations as well as the users of the zone are aware of the importance which provides the wetland and the current situation could cause threat to wetlands and even to the region. This approach is a tool to create an integrated management plan for better conservation of wetlands in an arid environment.

Keywords: Wetlands, arid zone, Chott, biodiversity, socio-economic stakes, protected area, conservation, integrated management.

**Contribution to the study of the distribution and settlement of *Raja asterias* (Delaroche, 1809) (the starry line) along the Algerian coast.**

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ABSTRACT

Rajidae Family considered as certain fisheries resource. *Raja asterias* captured regularly and very known of fisheries professionals in Algeria but it has not been the subject of extensive studies. To compensate for this shortcoming, ecological study has been carried out based on the data collected during the campaign of exploration of the seabed Algerians during the period September- October 1982, by the oceanographic vessel (N/O) Thalassa (ISTPM, 1982). The study of the horizontal distribution of the starry ray has shown that it is present in almost all regions of the coast of Algeria with variations in frequencies of density and biomass will be introduce according to the region. For the vertical distribution, the level the more productive by region corresponds to the first section of bathymetric range 50-100 and 100-200 m. for the nature of the substance, *R. asterias* does not exist on all funds, in effect; she attended the funds sandy and muddy bottom in a general way. The specific richness, diversity specific and fairness have been determined for the population in the East and the West. The results obtained have allowed us to highlight a juvenile system, characterized by a low fairness whose energy resources are surplus to the needs. The study of the fauna associated with *R. asterias* highlights the preferential prey, represented mainly by the fish

(Horse marckerel, Common Pandora, and red mullet) and to a lesser degree by the crustaceans (prawns).

Keywords: *Raja asterias*. Ecology. Associated fauna. Starry ray. Algerian coastline.

**Study of wastewater treatment by natural process and aerated lagoon.**

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ABSTRACT

Pollution etymologically means: defilement, desecration (describes what is to dirty, polluted). The water pollution is one of the major contemporary issues. Pollution is a set of nuisance caused by contamination of the elements necessary to the life of humans, animals and plants. The pollution resulting from the introduction into a medium, of substances leading to the deterioration of the concept is fundamental alteration of the medium. In effect, a rejection wills by definition if pollutant causes an alteration, that is to say degradation. The lagoon is a very common method of treatment, which has large areas of land. There are two types of lagoons: the natural lagoon or treatment occurs naturally by passing the water through a succession of three basins generally, which are present in algae, bacteria and microorganisms, where ventilation is natural. Aerated lagoon, which is an efficient system economically very favorable biomechanical wastewater produced in rural areas. We made the physico-chemical analyzes of water before and after treatment in the study sites. Based on our analytical results, we found that the aerated lagoon is more effective than the natural lagoon.

Keywords : Pollution, sewage, contamination, station lagoon, treatment.

**Growth of common carp *Cyprinus carpio* (Linnaeus, 1758) dam Dahmouni (W. Tiaret).**

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ABSTRACT

In this study some population characteristics of the common carp *Cyprinus carpio* (Linnaeus, 1758) were targeted, the specimens were caught in Dahmouni dam (W. Tiaret) between April and June 2013. The individual weight ranged between 40.9 and 1275.2 g while the total length ranged between 13.8 cm and 47.8 cm. For all individuals (n = 120) of the common carp, the relationship between total length and fork length was: Lt = 1.266 Lf 0.9612 (r2 = 0.9980) and the relationship between the total length and weight total was: Wt = 0.0197 Lt 2.8704 (r2 = 0.9936), condition factor K was estimated at 1.2905. The equation of Von Bertalanffy growth was: Lt = 49.35 [1-e-0.3 (t + 0.24)]. Natural total mortality (Z), (M) and fishing (F) were as follows: Z = 1.508, M = 0.438, F = 1.07.

Key words: Common carp, *Cyprinus carpio*, Dahmouni dam, Growth, Mortality.

**Helminths of two sympatric species of the genus Meriones (Rodentia: Gerbillinae) from eastern Tunisia: Diversity of species and zoonotic implications**

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ABSTRACT

The helminths of two sympatric species of rodents, the Shaw's jird Meriones shawi Duvernoy and the Lybian jird Meriones lybicus Lishtenstein from Tunisia were studied to determine whether there are similarities in the composition of the helminth fauna among two closely related host species whose distributions overlap geographically. A total of seven species of helminths was identified in these rodent populations, including four species of Nematoda: Gongylonema neoplasticum Fibiger and Ditlevsen, 1914, Syphacia muris Yamaguti 1941, Dipetalonema weissi Seurat, 1914 and *Trichuris sp*.; two species of Cestoda: *Raillietina sp.* and *Meggittina sp*., and one species of Acanthocephala, *Moniliformis moniliformis* (Bremser, 1811). In M. shawi, G. neoplasticum was the most prevalent helminths (45%), but Trichuris sp. was the species with the highest mean intensity (6.2). In contrast, Meggittina sp. dominated the M. lybicus helminth fauna with the highest prevalence (33%). Both rodent populations harboured three common helminth species, although the individual species richness was higher in *M. shawi* than in *M. lybicus*. Among different helminth species identified, some had zoonotic importance such as M. moniliformis and S. muris. Therefore, the potential risk for human helminthiasis of these species needs to be considered to prevent infectivity of both, Humans and domesticated animals.

Keywords Helminths, Meriones shawi, *Meriones lybicus*, zoonotic, eastern Tunisia.

**Study of parameters of the biology of reproduction : *Squilla mantis mantis* caught in three Tunisian gulfs: Tunis, Hammamet and Gabes**

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ABSTRACT

The Spot-tail Mantis Shrimp, *Squilla mantis* (L., 1758) is found in the Tunisian coasts especially in the Gulfs of Gabes, Hammamet and Tunis. S. mantis is a species which has little economic importance in the Tunisian market and it is considered as a by-catch, but its abundance in this area makes it a relatively important species for fisheries. This study aims to contribute to the study of the reproductive biology of the mantis shrimps S. mantis in the Tunisian waters. The study of reproductive biology shows that the sex-ratio of S. mantis is variable with time and area and the proportion of females was significantly lower than that of males. Sizes at first sexual maturity (Lm50) for females ranged between 145.64, 150.63, and 155.25 mm for the mantis shrimp respectively captured from the gulfs of Tunis, Hammamet and Gabes when considering maturity by the gonads and cement glands development. The sexual cycle of this species can be split in to three phases: maturation from December to April, spawning from April to August, retrieval and sexual rest between September and November. S. mantis is a single spawning species, the fecundity of the female's increases proportionally less than to the cube of the total length ant it was significantly different between the three gulfs of Tunisia.

Keywords: Reproduction, *Squilla mantis*, Size at first sexual maturity, fecundity, Tunisian waters.

**Fauna and hydrobiological quality streams of the wetland "and Moghrar Maryam" (wilaya Naâma).**

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ABSTRACT

Our main aim, is the establishment of faunistic lists of benthic invertebrates and to seek the relations between the characteristics of the habitat and its fauna of the rivers Tiout, Hadjadj and Moghrar Tahtani, which were to date the subject of no hydrobiologic study. These rivers are more or less permanent. They are subjected to a broad range of variability environmental, including the floods and the drynesses. Last nine stations spreading out between 820 and 1030 m altitude, were selected for this study. Five stations are selected on the Tiout wadi, two on the Hadjadj wadi and the two last on the wadi Moghrar Tahtani. In the benthic, 42377 individuals divided into 81 let us tax were listed, they belong to 56 families and 60 kinds. The Diptera are dominant with 51,22 % of total fauna (14 families) follow the Naididae Worms with 24 %, then Ephemeroptera with 12,46 % (7 kind), the Coleoptera with 5,29 % (26 kinds), Heteroptera with 5,05% (11 kinds), Trichoptera with 0,91% (10 kinds), others let us tax are slightly represented. The application of method I.B.G.N shows that for water quality, the stations of study belong to four classes good, average, poor and bed. .

Keywords: Algeria, Tiout, Hadjadj, Moghrar macro-invertebrate benthic, faunistic, ecology, hydrobiological quality.

## TOPIC WETLAND : ECOLOGY OF VECTORS

## Oral :

**Variations epidemiological evidence of ectoparasites capriscus Balistes the Gulf of Gabes (Tunisia)**

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ABSTRACT

Ectoparasites of marine fish belong to several taxonomic groups. Monogeneans and copepods, are causing major economic problems. Until now, several works has been conducted on the B. capriscus parasites of the Atlantic Ocean but nothing has been reported on the parasites of the Mediterranean B. capriscus. Therefore, the present study aims to analyze the variations of the epidemiological index of B. Capriscus ectoparasites.
The investigation of parasites was performed on 419 specimens of B. Capriscus. For each parasite species, prevalence and mean abundance were calculated. The variation depending on the size, age, sex, seasons of these two parameters were tested.
Three parasites species were collected from the gills, namely a species of Monogenea Ancyrocephalus balisticus and two species of Copepoda: Taeniacanthus balistae and Naobranchia variabilis. Analysis of the prevalence and abundance indicates that the ectoparasite infestation is not related to the sex of the host, but rather to its size. This study showed that the minimum values of the ectoparasites prevalence are recorded during winter and the maximum values during the summer ($p < 0.001$). This may suggest that winter temperatures are not conducive to the transmission of these parasites.

Keywords : *Balistes capriscus*, epidemiologic indice, ectoparasites, gulf of Gabès, Tunisia

**Diversity of Digenean parasites of needlefishes (Pisces, Belonidae) from Tunisian coast**

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ABSTRACT

The digeneans (Platyhelminthes) mesoparasites marine fish (Teleosts). Used as bioindicators of diversity of species and food chains. In this context, we have initiated a study on diversity of Digenea parasites of belonids from Tunisian coast.
Between 2004 and 2009, 451, 45 and 124 individuals of *B. b. gracilis, B. svetovidovi* and *T. a. imperialis* from different localities in Tunisian coast were respectively examined for parasites.
Four Digenea were identified from *B. b. gracilis* and *B. svetovidovi*: *Lecithostaphylus retroflexus* (Molin, 1859), *Tergestia acantocephala* (Stossich, 1887) Stossich, 1899, *Aponurus laguncula Looss*, 1907 in the intestine and metacercaria Condylocotyla pilodora Pearson and Prevot, 1985 in the pericardial sac. From needlefish *T. a. imperialis.* Four Digenea were collected: *Lecithostaphylus tylosuri* (Châari and *al*. 2013) and *Tetrochetus* coryphaenae Yamaguti, 1934 from the intestine; Oesophagotrema mediterranea Châari, and al. 2011 in the *esophagus* and vomer teeth and *Sclerodistomoides sp*. in the gallbladder.
This study showed a diversity of Digenea of belonids which can be related to a diversified diet of hosts. *B. b. gracilis* and *B. svetovidovi* hosted the same species of Digenea which reflected a similar diet of fishes. Presence of other species of Digenea in the needlefish could be explained by different feeding behavior of this fish. Moreover, *T. a. imperialis* is a migratory fish that approach to the coast only between May and July to breed. This consequently induces a change in diet by varying the intermediate hosts ingested.

Keywords: Diversity, Digenea, Parasite, Belonidae, Mediterranean Sea, Tunisian coast.

# List of Posters :

## BIODIVERSITY

**Comparative inventory reptiles lagoons Moroccan Atlantic: Oualidia lagoon and the lagoon Merja Zerga**

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ABSTRACT

The Morocco presents a very important biological richness, and reptilian fauna is considered among the richest and most varied of all the countries of North Africa. This fauna is regarded today as an excellent sentinel of the environment being indicators of ecological integrity. The objective of this study is to carry out a comparative inventory of the reptiles in the lagoon of Oualidia and Merja zerga. These two lagoons are part of moroccan wetlands the most interesting and wich are registered as international importance of RAMSAR sites. In addition to their bio-ecological importance, the latter also have very important socio-economic functions.

Our observations helped to highlight the presence of 3 chalcides mionecton trifasciatus( seps mionecton) endemic to the Morocco and found in sandy areas or slightly damp soil, 2 trogonophis wiegmanni, its natural habitats are forests, shrub vegetation, meadows, farmland and pastures, of 1 chalcides polylepis polylepis (the seps at many scals) endemic to the Morocco and it lies under the rocks and stones and in the groves of dense vegetation and 5 Acanthodactylus lineomaculatus( the acanthodactyle lined) endemic to the Morocco, its likes habitat type shrubby vegetation dry lowland prairies, sandy beaches, arable land and pastures.

Keyword: Herpetofauna, Morocco, Reptiles, Inventory, Oualidia lagoon, Merja zerga lagoon

**Distribution of the Eurasian Spoonbill *Platalea leucorodia* wintering in the Gulf of Gabès, Tunisia**

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ABSTRACT

The Gulf of Gabès, in south-eastern Tunisia, is one of the most important Mediterranean wintering areas for the Eurasian Spoonbill (Platalea leucorodia). However, information on the ecological factors shaping the distribution of this species in this wintering area are lacking. During the winter of 2012-2013, we conducted repeated counts of spoonbills in fifty sites in the central part of the Gulf of Gabès. Using a capture-recapture-like approach, the collected data were used to investigate the relationships between habitat parameters and spoonbill occurrence while accounting for factors affecting detection probability. Our results show that the occurrence probability of spoonbills was positively related to mudflat extent. Spoonbills seem to preferably occur in large mudflats where the relatively long exposure period during low tides offers more time for foraging. Further investigations of habitat use are nonetheless needed to more profoundly understand the wintering ecology of this species in this particular wintering area, as well as for conservation purposes.

Keywords : Distribution, *Platalea leucorodia*, Gulf of Gabès, Tunisia.

**Inventory depolluting plants in the blue lake (El Kala National Parc)**

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ABSTRACT

The study was conducted for an identification and implementation of a botanical inventory of terrestrial and aquatic species Depolluting, whicha are a part of the plant heritage of blue lake at the El Kala National Park (PNEK). It consisted of outputs on field work carried out in the spring period conducive to the recognition of plant species because of their flowering. The site is characterized by two layers: a surrounding consisting of trees and shrubs, the other a vegetation belt lying around and within the lake itself. The study method was to note the existing species in each stratum vertically relative to the slope to identify them. A total of 09 terrestrial species belonging to 08 botanical families and 04 aquatic species belonging to 04 botanical families have been noted in the lake. These results allow us to see and to say that it has a rich and important plant biodiversity in these plants located in different strata.

Keywords : Lake blue, Depolluting plants, inventory.

**Comparative study of stands plants Depolluting in National Park of El Kala (Oubeira and El Mellah Lakes)**

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ABSTRACT

Lakes of El Kala National Park (PNEK) have been the subject of many studies, they were, as such prospected by both agronomists, biologists soil scientists, but few studies have examined on the identification and establishment of a botanical inventory of depolluting plants that could be there. This study was carried in this direction and involved two lakes Oubeira and El Mellah. It consisted, first, in identification of depolluting species plants, and secondly, an assessment of their abundance. For this, we made use of phytosociological methods, the transect method was applied at Lake El Mellah and the method of quadras at the lake Oubeira (Braun – Blanquet, 1953). In total, 27 species belonging to 20 botanical families were identified in the two sites: 9 species belonging to 8 families for Lake El Mellah and 18 species belonging to 12 families for Oubeira lake. Therefore the richness into these plants is more pronounced for the latter who recorded a biodiversity index stand 1.05. This study presents some ecological interest in the moment which it is established that these plants play a role in soil remediation and air by their detoxification ability.

Keywords : Lake Oubeira, lake El Mellah, Depolluting plants, counting, abundance.

**Floristic diversity and vegetation mapping of the Sebkhet of Bazer-Sakra (Setif, Algeria).**

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ABSTRACT

Sebkhet of Bazer-Sakra, a wetland of the large complex of the south-Constantine region has been exploited by a large vegetation inventory conducted in 9 stations during spring of 2013. The investigation methodology in the analysis of the vegetation was conducted according to the phytosociological method of Braun-Blanquet. Analysis of data is performed using "GIS" in order to develop the vegetation map of the site. 47 species belonging to 23 families are identified, with the dominance of the Amaranthaceae represented by Atriplex glauca, Suaeda fruticosa, Salicornia fruticosa and Salsola vermiculata, therefore halophilic taxa form the first and second belt of vegetation around this sebkhet.

Keywords : Sebkhet of Bazer-Sakra, vegetation, phytosociology, GIS, vegetation map.

**The main toxic plants in the wilaya of El tarf as wetland**

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ABSTRACT

Economic losses due to poisoning of domestic animals by toxic plants found in wetlands are not reflected only by the death of animals, but also by lower production parameters . Many plants commonly used in animal feed in the province of El Tarf , unrecognized as toxic Aristolochia clematitis , Hyoscyamus Niger , ... etc. can become dangerous in certain circumstances. Those implicated in cases of poisoning plants contain one or more chemical substances endowed with toxicological properties. Indices high morbidity and lethality indicators are a very poisonous plant. To establish the diagnosis of plant poisoning , the veterinarian must follow a rigorous diagnostic procedure and, if necessary , have recourse to supplementary examinations. Treatment depends on the toxicant , and the intervention must be early enough .

Keywords : plants, toxic deaths, animals, wetlands, El Tarf

**Status of current knowledge on fauna of El-Kala wet lands (El-Tarf)**

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ABSTRACT

Wet lands have a major role in the ecological functioning, they allow in a set of species to achieve their biological cycle. Where from the faunitic wealth which makes their reputation, and holds their use by a lot of not strictly aquatic species. Status of animals populations depends on the habitat quality and consequently on the general ecosystem functioning. Knowledge about the dynamic of population and the identification of ecologic and anthropic constraints may allow species and environment conservation and rational management. El-Kala wetlands shield important faunitic diversity. On the outwards of avian population which represent 1/3 about the total national, mammals of El-Kala wetlands count about 40 species from which 16 have a protected status in Algerian law. 24 reptile species with 07 amphibian species about 111 counted in Algeria. The inventories of insects aren't yet leaded and any exact number could be pronounced. Therefore, inventories and knowledge about species ecology are variable, but our faunitic one's are until partial and limited in species called "remarkable".

Keywords: wetlands- faunitic diversity- inventories- species- knowledge

**El-Kala wetlands: remarkable avian and ecologic diversity to preserve**

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ABSTRACT

The ecological importance of water birds is seen as a conservation tool that directly contributes to guiding conservation efforts and evaluation of wetlands status in the right direction. The results of The International Water-bird Census (IWC) from 2000 to 2013, by direct counting for the number of water-bird species and the number of individuals were analyzed and showed 295.580 water birds counted belonging to 52 species. Anatidae represents 80% of the total water-bird individuals, Wigeon *Anas Penelope*, Shoveler *Anas clypeata* and *Aythya ferina* are by far the most common, and widespread species represented. More than 95% of the total waterbird individuals counted belonging to 39 species at Tonga Lake, which is considered the most important site and the highest diversity in terms of the number of species recorded. It becomes a nidification site for the White-headed Duck *Oxyura leucocephala* and the Ferruginous Duck *Aythya nyroca*, mentioned on the IUCN Red List of Threatened Species. During the last decade, El-mellah Lake regain its importance, it's counted about 21% of the total water-birds on 2013.

Keywords: wetlands- diversity- importance- water-birds, IWC, census

**Waterfowl population in the wetlands complex of Souk Ahras : present state, patrimonial interest.**

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ABSTRACT

Given their location between two great wetlands complexes in Algeria in this case the wetlands El Kala and those high plateaus of Constantine, wetlands of the wilaya of Souk Ahras are very important sites to avifauna in their migratory movement. The enumeration of waterbirds done during two consecutive years (2011/2012 and 2012/2013) at three wetlands in this region show that this site harbours about 16 families wintering and /or migrating represented by 53 species. These families are mainly dominated by the family Anatidae, which includes 13 species and that of Scolopacidae with 9 species. Of the 53 species enumerated 14 were noted as breeding. The Tiffech1 site is the largest and most diversified wetland owing to the number of recorded waterbirds and its richness in species, it shelters 47 species. Many species found in these environments have an unfavorable conservation status on a national scale that international, it is the case as an example: of the white-headed duck, of ferruginous duck, of eurasian spoonbill, or of the greater flamingo; this denotes the importance of these wetlands which are used by these communities as places of wintering or nesting either as migratory stopovers.

Keywords: wetlands, high plateaus of Constantine, avifauna, Enumeration, wintering, nesting, migratory stopover.

**Knowledge of biology and ecology of freshwater fish in eastern algeria**

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ABSTRACT

This work focuses on the biology and ecology of a species of fish in a freshwater lake gender Pseudophoxunus in eastern Algeria ( Oued Mellah - M'sila ). Estimated for males and females of the genus Pseudophoxinus, such as the number of rays of the dorsal fin, anal and pectoral are identical to those described by Leberre (1989), respectively metric characters (D 10, A 11 and P14 ). In addition, metric characters are also identical in both sexes. The regressions for the various parameters measured in relation to total and / or cephalic length length are represented mainly by growth isometric guy with 75% of the regressions for males and 37.5% females. In addition, the maximum recorded in this study size (7.2 cm in males and 7.4 cm for females ) is far lower than that in the North of Algeria where there are reports 10.7 cm ( Leveque et al, 1984; Leberre, 1989). The study of the population structure of the genus Pseudophoxinus helped us out for 7 generations females and 4 males for generations, which explains the good longevity of females compared to males. The breeding season for this type is between the months of February and March. High fertility is noticed in the genus Pseudophoxinus el Oued Mellah (3800 eggs in a female 7.1 cm), which is a positive thing that can guarantee the preservation and sustainability of this fishery resource , if measures of efficient management are undertaken.

Key words : Algeria, Oued Mellah, Pseudophoxinus, growth, reproduction, population structur

**Ecology and phenological status of water marsh Tamelaht (Bejaia) birds.**

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ABSTRACT

Marsh Tamelaht is located 3 kilometers from the city of Bejaia. It is distant about 80 m from the sea north-east exposure. The water birds are one of the most remarkable fauna component of wetlands. Moreover, the vast majority of species is a beautiful illustration of the phenomenon of migration: each year, these birds perform periodic trips shorter or longer (up to several thousand kilometers) between their nesting areas and those wintering in search of the best climatic and trophic conditions. Numerous studies have shown that the distribution of waterbirds was structured in time and space. The results obtained during an annual cycle indicate that the marsh Tamelaht is much used by waterfowl as migration stopover and wintering site. Total marsh hosted 51 species distributed in 13 families. In terms of number of species; Anatidae represent 21 % of the total with 8 wintering 2 visitor passes and a breeding species Scolopacidae followed with 15 %, of which 7 species are visitors passing through, and determined as accidental Away. Shorebirds family is represented by two species, migratory breeding and other breeding sedentary.

Keyword : Marsh Tamelaht, waterbird, counts

**Socio-economic study for the establishment of a marine protected area in Cape custody, Annaba**

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ABSTRACT

Protecting environment is become main purpose for Environmentalists and governments during the few Last Years. In this study the major cause or although the main motivation to create a protected marine area in the west coast of Annaba (Cap de garde) which is an important space in the balance of the bird's life, and for a marine biological diversity in the eastern region of Algeria, it is the protection of key habitats affected, tells interest Case of seagrass beds As species called Posidonia oceanica Who is a vast habitat of Biodiversity and considerable important ecological role.

So the MPA Seems to Be The Best Tool In the protection and conservation of Biodiversity and Natural Resources With a congestion Submitted laws and national federal rules, tribal or local . But Before proceeding to start the project, we have to perform a socio -economic study which is a Primordial Step and Prior to the establishment of MPA Whose distinguished two types: Step 1 sociological investigation carried out on land in the form of questionnairy and semi- closed With Different users for interviews: Scientists, fishermen, tourists, Public Authorities and the National Marine who was in number of 1000, to study Knowledge and perception of Users on the marine environment. 2nd Step economic Survey is in the Harvest of a statistical series containing All about flottie, The Landings, the quantity of fish, The Number of sailors, gears and Tools for Fishing Uses, also the number of vacationers and tourists who frequents the area of study during the last decade, and this is what will Give us an encrypted economic value to the area and the marine environment. Finally, after Having Analyzed the different results obtained from our investigation, we reached the conclusion that the study area is the resource of a thousand of homes but also outlet it's the holydays area for all the citizens' vacationers and tourists who come as visitors enjoing landscape all the Length of Year.

Keyword: Socio-Economic Survey, Marine Protected Area, Annaba, Biodiversity.

**Contribution to the study of the diet of adult Coot *Fulica atra* (Aves, Rallidae) in the nature reserve of Lake Réghaïa (Algiers, Algeria)**

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ABSTRACT

This study focuses on adult diet of the Common Coot Fulica atra (Linnaeus, 1758) during the period from February to July 2010 in the nature reserve of Réghaïa Lake, east of Algiers, from the analysis of 150 faeces collected, 25 faeces for month. The food spectrum is mainly composed of plant species, animal species are very rare. A total of 28 plant species belonging to 14 different families and four animal species were identified. Among the plants, the Poacae family is the most consumed with a relative abundance of 78.6 %. The Typhacae and Cyperacae are respectively 4.4 and 3.8 %. Other families occupy a negligible portion. Animal fraction is 5.3%. Among these Poacae, three species are consumed, it is Paspalum distichum , Phragmites sp. and Hordeum murinum with respective rates of 33.9 , 22 and 8.5%. Other taxa are consumed to a lesser extent. Variations in the diet during the six-month study corresponded to availability and local species phenology .

Keywords: Coot, diet, monthly fluctuations, Réghaïa lake.

**Study of the distribution of Chironomidae (Insecta: Diptera) of Charef Wadi, the North-Eastern of Algeria.**

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ABSTRACT

In the North-Eastern Algeria, a study of the distribution of species of Chironomidae in a sub watershed Seybouse called the basin of Charef Wadi, was conducted during a year from May 2012 until April 2013, for whole of nine sampling stations located on the principal river and some affluents upstream and downstream of the Wadi. The specific repertory of Chironomidae was established from the study of imaginal, pupal and larval populations sampled. Four subfamilies have been identified in the sites of study: the Chironominae, Tanypodinae, Orthocladiinae and Prodiamesinae. Similarly, a correlation between the identified species and some environmental factors allowed us to determine the factors that control their distribution according to the site and season of study.

Keywords : Chironomidae; North-Eastern Algeria, Charef Wadi; Environmental Factors.

**Biosystematic and ecological study of Caraboïdea harvested in marshes of Réghaia**

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ABSTRACT

The main objective of this work is the study of biosystematics of Caraboidea captured in marshes of Réghaia. Samples taken at three stations around the marsh, helped raise 24 species divided into 5 groups and 8 subfamilies. The group containing the most families is Conchyfera, gathering the subfamilies of Pterostichinae, Harpalinae and Callistinae. The determination of the species caught is based on dichotomous keys, and their systematic position is confirmed by the observation of different parts of their copulatory organ. In addition, the phenotypic differences of species were established by measuring several morphometric clues. In the 20 surveys, 131 individuals were captured. The ecological study showed a temporal and spatial variation of the total wealth of Carabidae and centesimal frequencies of subfamilies. The diversity clues of Shannon -Weaver revealed that March is the most diverse in species and better structured. Finally, correspondence analysis has shown a scattering of stations between three quadrants, thus explaining the variability of their species. This same analysis has grouped species into seven groups: A, B, C, D, E, F and G as a function of occupied stations.

Keywords: Caraboïdea, morphometric clues, total wealth, ecological clues, factorial correspondence analysis

**Approach on the functioning of two algerian high plateaus chotts, zehrez chergui and zehrez gherbi on the basis of their avifaunistic wealth.**

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ABSTRACT

Our study focuses on the place of waterbirds in two continental wetlands. Located at the gateway to the Sahara at the center of the Algerian high plateaus (d. Djelfa) Zehrez Chergui and Zehrez Gharbi. Both wetlands currently have relatively limited water resources, namely only the rise of groundwater in the rainy season. Moreover, the region has changed the bioclimatic stage, semiarid in the 1930 years, it moved to arid in the early 21st century. The first results show that the diversity and abundance of waterbirds depend largely on fluctuations and distribution of water level. In this context, the richness of Zehrez Chergui seems much lower than Zehrez Gharbi. The first wetland was almost dry at the time of the study. The difference between the two sites is largely related to climatic and soil conditions. And more precisely to the presence of water in these regions to dry climate. The study of the place of waterbirds in the functioning of the aquatic ecosystem Zehrez Gherbi indicates the existence of five (05) food categories; predatory invertebrates that dominate 43% herbivorous and carnivores (predators of vertebrates) to 22% each, polyphagous and omnivores represent about 7% of stand.

Keywords: Wetlands, Water birds, Functioning, Trophic network.

**Characterization and pollen prospecting, case of the saltysoil of the lake Fetzara (Annaba, Nord-Est algérien)**

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ABSTRACT

The importance of the wet zones and the concern of their protection against any degradation threat imposes a perfect knowledge of their components (ground, water and vegetation). Among these circles, the lake Fetzara is one of the most important of the Algerian extreme Northeast, it was especially identified by its salinity of grounds and waters. However, it was noticed that in all the works made on this site, the pollen study in the grounds of the lake was not highlighted. The approach which was adopted to realize this study, consists in a physico-chemical separation of the organic constituents and an extraction with identification of the micro-rests. The physico-chemical characterization of grounds highlighting a low porosity bound to a muddy texture with a pH slightly alkaline and a very variable electric conductivity according to the depth of coats allowing to classify these grounds in the category of little salted grounds. The pollen prospecting shows that sediments of the lake Fetzara contain a quantity more at least weak of botanical species dominated by cichorideaes and silènes. This situation can be explained by the strong exploitation of vegetables in this surpaturé environment. The humectation and the dehydration can be considered as a degrading factor of these micro-rests a very important quantity of which seemed damaged.

Keywords : salty soil, Physico-chemical properties, pollen, humification, Fetzara.

**Phenology of reproduction of duk Mallard *Anas plathyhrnchos* at Tonga lake (Norteast of Algeria)**

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ABSTRACT

With the aim of followed and to study the reproduction Duck Mallard (Anas platyrhynchos platyrhynchos) in lake Tonga (Algerian Northeast), regular exits are realized during the season of reproduction 2011. Of less Mars until the end of April, 13 nests were listed first heavyweight noticed in the place 27 Mars and is by June 17th. Most of the nests are built on the banks of the lake over the surface of the water, on average in 48,807 ± 18,754 cms. The study of the parameters of reproduction shows a size (greatness) of average laying (eggs) is 8,923±3,451 eggs by female the smallest brood of which is 01 egg and the biggest of 12 eggs. A duration of incubation varies from 26 to 28 days and one very high rate of hatching of 92,307±27,735 %.

Keywords: duck mallard, Anas platyrhynchos platyrhynchos, reproduction, lake Tonga, Aulnaie of Tonga.

**Biogeography aspects of Insular Birds In district of Jijel (Algeria)**

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ABSTRACT

In Algeria birds inhabitated islands were few studied, only sea birds were well studied. Within this context our appraoch was insered to study birds biogeography of three islands situated on west of Jijel (Petit Cavallo's island, Grand Cavallo's island and Grand Cavallo's islet). Our results showed the existence of 22 birds in Petit Cavallo's island, 13 birds in Grand Cavallo's island and 6 species in Grand Cavallo's islet. Upon 22 birds observed in Petit Cavallo's island, 4 birds species belonged to European fauna's category, with 18.18%; it twas followed by two fauna's categories: Cosmopolitan and Palearctic with 3 species each (13.64%). Birds species belonged to Mediteranean, Holarctic, Old-World, Indo-African and Turkistano-Mediterranean were represented by 2 species by fauna's category. Whole birds listed on Grand Cavallo's island belonged principaly to folowing fauna's categories: European, Mediterranean, palearctic,or Turkistano-Mediterranean wich represented by 2 species (15.38%). Whereas, birds species belonged to Old-World, Cosmpolitan, Holarctic, Sarmatic, North-Athlantic were weakly represented, one species for each fauna's category. On Grand Cavallo's islet Old- World species were more represented with 3 species, corresponding to 50% of the total birds observed. Whereas, birds belonging to the following fauna's categories: Mediterranean,palearctic, North-Atlantic were represented only by one species .

Keyword: Birds, insular, Biogeography, fauna's category, Jijel

**Trophic ecology of the green frog *Pelophylax saharicus* Lake Tonga (El Kala National Park).**

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ABSTRACT

The trophic ecology of the green frog population *Pelophylax saharicus* Lake Tonga in the National Park of El Kala has shown that it is rich and diverse with 25 species and 31 prey. Insects are mostly dominated by beetles, flies and wasps. The Neuroptera and Odonata are poorly represented. In addition to insects we note the presence of gastropods and Arachnids. The ecological indices confirmed these results and showed that the diet of the green frog is diverse, but imbalanced since the value of equitability is relatively low. This predatory species may contribute in a major way in the regulation of populations of insects Lake Tonga.

Keywords: Green Frog, *Pelophylax saharicus*, Lake Tonga, diet, invertebrates

**The status of the Anatidae family wintering in wetlands of high plains of eastern Algeria.**

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ABSTRACT

Between November 2010 and May 2011, we followed the evolution of the numbers of ducks, at wetland complex of the High Plains (Central Highlands) of eastern Algeria (often called"Constantine") and the diurnal time budget in El Oued el Mellah Eulma wilaya of Setif, has identified thirteen (13) species of ducks among the sixteen (16) identified in Algeria. Eight (8) species of ducks are the most answered and five (5) species of ducks show irregular attendance. The ducks, whose maximum is observed in January with a total of 8064 individuals .the analysis of the time budget revealed that the shoveled spends more than 45% of his time diurnal to the food, whereas other activities (sleeping, toilet, flying, walking, Agonistic behavior) occupies only a low proportion. Courtship occupied (10%), appears at the end of winter to a peak in mid-spring.

Keywords: counting, behavior, High, Plains waterfowl and ducks.

**Phenology and Diurnal Behavior of Grebes in Garaet Hadj Tahar (Guerbes-Sanhadja Wetland Complex, Skikda, Northeast of Algeria)**

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ABSTRACT

Guerbes-Sanhadja Wetland Complex, located in Skikda Province in the Northeast of Algeria, covers an area of 42 100 ha and was classified by Ramsar Convention since 2001. Guerbes-Sanhadja Wetland Complex includes several saline lagoons, freshwater lakes and freshwater ponds, which present of particular value for biodiversity conservation because of the richness and diversity of their fauna and flora. Garaet Hadj Tahar is one of the most important ecosystems of the Guerbes-Sanhadja wetlands which had a primordial interest as a foraging/roosting area for the wintering of water birds. This Garaet (36° 51' 50" N, 07° 15' 57" E) is located at some distance from the Mediterranean Sea, with an area of about 100h and a mean water depth of 0,8 to 1,20m. It is characterized by a very large oval form and an important biological richness and a high breeding success of the water birds. Bimonthly outings are conducted In order to: do a regular inventory, estimate the total effective of Podicipedidae (Grebes) and the study of their ecology during wintering in the Garaet Hadj-Tahar.

Keywords : Podicipedidae, wintering, inventory, diurnal behaviour, Gareat Hadj Tahar.

**Diet variation of the Short-Eared Owl Asio flammeus (Pontoppidan, 1763) in the area of El-Golea (the Sahara, Algeria)**

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ABSTRACT

This work concerns the study of the variations of the food mode of the Short-Eared Owl in the area of El-Goléa. This study emphasized the presence of 7 category-preys to knowing Arachnida, Insecta, Reptilia, Aves, Batrachia, Rodentia, and Chiroptera. This Last category-prey is consumed (AR = 39.3%), represented more by Myotis alcathoe (AR = 37.8%). Other categories are to be quoted from importance point of view in particular the rodents (AR = 28.5%) and the birds (AR % = 16,5). The number of preys by balls in this predator varies between 1 and 11 (mean = 10.6 ± 10.5). In terms of biomasses, the birds (B = 56.0%) and the rodents (B = 29.3%) are most advantageous. From this study we note that the Owl of the marshes (E = 0.70) is regarded as a predator general practitioner.

Keywords : Diet Asio flammeus, pellets of rejections, El-Golea, the Sahara.

**Raw data on the diversity and status of aquatic birds of the Chott El-Hodna (central High Plains-Algeria).**

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ABSTRACT

In this pioneering work on the aquatic avifauna of Chott El-Hodna (Central High Plateaux, in Algeria), we present results obtained through the monthly counts of waterbirds companies started from September 2007 to September 2009. On this wetland of international importance under Ramsar convention, a total of 39 species of water birds representing 12 families was recorded. The family of ducks is the most represented by 10 species Amongst of all species, 20 of them are wintering species, 12 are visitors, 06 are breeding -sedentary species as well as the Ruddy Shelduck Tadorna furruginea and Black-winged Stilt Himantopus himantopus. One species nesting- migratory as well as the white stork Ciconia ciconia. However, 11 species are protected under Algerian law, of which one species is listed in (VU) Category of the Red List of endangered species (Teal marbled Marmaronetta angustirostris) by the International Union for Conservation of Nature (IUCN).

Keywords: Waterbirds, Chott El Hodna, Ramsar, wetlandm wintering.

**Ecological value of the Oued dam Charef (Wilaya de Souk Ahras)**

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ABSTRACT

The dam of Oued Charef is intended by hydraulic and agricultural services of irrigation of a large part of agricultural land in the wilaya of Souk Ahras and Oum El Bouaghi. The study conducted between December 2012 and April 2013 allowed a bio-ecological characterization of biotic and abiotic elements.
We studied several physico-chemical parameters of water as well as the richness of flora and fauna.
The inventories of flora and fauna have revealed the existence of 21 plant species, 2 of amphibian species, 3 species of reptiles, 31 species of birds and 2 mammals. Statistical analyses (abundance, richness, index of Shannon Weaver, equitability) were applied to avian species.
This study allowed to highlight the biological resources of the site and to determine its ecological importance. This can lead to suggestions of management and conservation close to its socio-economic status in a survey of sustainable development.

Keywords : Dam, birds, Plant species, biodiversity, Ecological value.

# New distribution of the Mediterranean Killifish *Aphanius fasciatus Valenciennes*, 1821 (Pisces: Cyprinodontidae) and biometrics of individuals captured in the Northern Sahara of Algeria

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ABSTRACT

*Aphanius fasciatus* is a Cyprinodontidae fish, is attending inland aquatic systems. To date, its biogeographical distribution is confined to coastal regions of the majority of the Mediterranean zone. This study, carried out between 2011 and 2012, highlights for the first time the presence of the species in the Northeast of Northern Algerian Sahara, in a sub-Saharan bioclimatic zone. The surveyed populations perform their entire life cycle in the same sites. The assessment of a sample of 27 individuals captured in Oued Still allowed the description of the metric and meristic traits as well as parameters related to the relative growth (length-weight relationship) of the sampled specimens. The regression equations established between the various measured metric parameters on the one hand and the total length and/or the cephalic length on the other, for both sexes, showed that 68.75% of these parameters undergo isometric-type growth. The growth parameters of Von Bertalanffy' equation characterizing A. fasciatus were estimated as Lt = 5.5878 [1 - exp (-0.345 (t-0, 027))], Wt = 2.6692. [1 - exp (-0.271 t)]^3. The length-weight relationship was isometric for both sexes. Being a protected species in its known to date distribution area, this study provides new useful information for guiding future programs and actions for the conservation of A. fasciatus.

Keywords: *Aphanius fasciatus*, Mediterranean Killifish, Northern Algerian Sahara, distribution, morphometry.

**The Marsh Boussedra is located near the town of El - Bouni (wilaya of Annaba, North –East of Algeria), a much polluted site; it receives all the wastewater from this city.**

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ABSTRACT

Over a year (2013), a study that aims to identify and study the ecology of these birds wintering and nichants water in the Marsh Boussedra, we identified 79 species of water birds belonging to 18 families. Most of them are observed during the winter period (48 species) and only 17 come to nest in this marsh. The most important family point of view is that species and abundance of Anatidae (diving ducks and dabbling ducks) with 16 species. The Shorebirds are also represented (15 species). Some families are only represented by a single species such as Phoenicopteridae the Laridae. These Water Birds occupy the marsh ways generally governed by their nutritional needs and their cerns.

Keywords: Water Birds, urban wetland, structure, ecology, phenology status, Algeria.

**Breeding ecology of the Purple Swamphen Porphyrio porphyrio at Boussedra marsh and Lake Tonga (North-east Algeria)**

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ABSTRACT

In order to fill some gaps in the knowledge of Purple Swamphen *Porphyrio porphyrio* North African populations, breeding ecology of the species was investigated at Boussedra marsh (an unprotected 30 ha marsh with *Typha angustifolia*, *Scirpus lacustris*, *Scirpus maritimus* and a dense stand of Tamarix gallica) and Lake Tonga (Ramsar site), North-east Algeria. Our study was conducted on one breeding season (2012) from late February until the end of June. The species is resident at these sites and its number is about 40 individuals at each one. In this study, twelve and ten active nests (containing at least one egg) were found and studied at Boussedra marsh and Lake Tonga , respectively. Purple Swamphen started laying eggs in early March and hatching in early April. The mean clutch size was 3.58 ± 0.9 eggs, ranging between 2 and 5 eggs. The nests were constructed with Typha angustifolia, *Phragmite australis* or *Scirpus lacustris*. The mean external diameter and the mean internal diameter were 44.08 and 26.33 cm, respectively. The mean length and width of the eggs were 58.49 and 36.91 mm (N=43), respectively. Hatching success was very high compared to other species who suffered more predation such as *Oxyura leucocephala* and *Aythya nyroca*. *Purple Swamphen* start breeding early, incubation was done by both sexes; the mean nest height above water was significantly higher up than the mean height nest of *Oxyura leucocephala* and *Aythya nyroca* and the *Purple Swamphen* feeding no far to his nest. At Lake Tonga *Purple Swamphen* suffered also hunting and poaching. Our study gives information on breeding success and causes of breeding failures in these two *Purple Swamphen* populations.

Keywords : Waterbirds, *Porphyrio porphyrio*, *Purple Swamphen*, Breeding ecology, Algeria.

**Oil Spills in Coastal Wetlands Hydrocarbon Discharges in the Coastal Wetlands**

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ABSTRACT

Under their aspects of terrestrial paradises, the wetlands are victim of deep an ecological faintness. The demographic growth of the coastal cities, pollution, the worrying tourist surge, threatens the fauna and the flora of these ecosystems. A retrospective of the recent studies shows a significant share of pollution by hydrocarbons poured in the aquatic environment is due to the accidents of the tankers, which have occurred in straits, ports, or close to the coast, and with the activities of the coastal industrial facilities. The evaluation of the effects of this pollution on the aquatic environment cannot be immediate bus of the serious disturbances can extend over several years whereas visible and immediate mortalities represent only one negligible share of the damage. This evaluation requires a perfect knowledge: petroleum product, of sound comprises lies and of its evolution in water; fauna and flora and receiving physical environment (hydrodynamism, geology and sedimentology).
This work tackles the significant subject of hydrocarbon discharges, by highlighting the dangers of such a contamination of the watery environment and thus proposes an E series of measurements of prevention and various means of fight in this field.

Key words: Pollution, Discharge, Hydrocarbons, Wetlands, Prevention

**The effect of urbanization on the breeding ecology of the Common moorhen *Gallinula chloropus* in the Northeast of Algeria**

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ABSTRACT

In North East Algeria and during the breeding season of 2012, the reproductive biology of one species of Rallidae: the Common moorhen *Gallinula chloropus*, nesting at TONGA lake "natural environment at the El Kala National Park" and pond of BOUSSEDRA "urban environment that is at the city of Annaba", was studied. This helped to understand, firstly, the timing of reproduction and the course of this nesting bird species, that is to say, the demographic parameters (The laying date, installation and characterization of nests, clutch qize, egg biometrics). In addition, it has, on the other hand, highlight the lack of differences between the results collected in the urban and natural environments and those in the literature.

Keywords: Breeding ecology, Rallidae, *Gallinula chloropus*, Pond, Boussedra, Tonga Lake.

**Ecological interest of Garaet Hadj Tahar for the water-birds of Guerbes-Sanhadja (Northeast of Algeria)**

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ABSTRACT

Garaet Hadj Tahar is a natural wetlands characterized by a very diversify fauna and flora, it is situated in the complex of Guerbes-Sanhadja (North-east of Algeria). This study show the diversity and the abundance of two water birds family (Anatidea and Rallidea), in addition the determination of two ecological indexes (Shannon and Equitability). The inventory of the water birds showed the importance of this Garaet for 4 species cited as threatened birds (the ferruginious duck Aythya nyroca, the white head duck Oxyura leucocephala, the Marbled duck Marmaronetta angustirostrisan and the Purple swamphen Porphyrio porphyrio. During the wintering period the biodiversity index reaches its maximum and the wetlands is dominate by different water birds population (abundance of the trophic requirement).

Key words: Garaet Hadj Tahar, Biodiversity, ecological indexes, wetlands.

**Distribution of white stork *Ciconia ciconia* in the north- east of Algeria.**

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ABSTRACT

Our study focuses on the distribution of the white stork "*Ciconia ciconia* L. 1758" in in the wetlands of El Tarf (North eastern of Algeria): recognized by its remarkable number of breeding pairs, monitoring of nesting, using a GPS, has been performed in an attempt to explain the functioning of populations and population strategies for an overall design of its distribution, which has not so far been investigated in this region.

Between 2012, and 2013, the number of breeding pairs has increased considerably, from 174 in 1996 to 475 in 2007 and 968 in 2013. It should be noted that in the distribution of breeding pairs between 1996 and 2011, there is a significant development since the density of nests increased from 25.22 in 1996 to 84.16 couples/100 km² in 2013. More endemic bread apears in the region, this fluctuation is related to climatic change and changing season.

Keywords : *Ciconia ciconia*, wetland El Tarf, climatic changing, density.

Poster : BIODIVERSITY

Ecology vectors:

**Ectoparasitic Ecology of the Hedgehog *Atelerix algirus* in the forest of Edough (Seraidi)**

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ABSTRACT

Our problem tends to highlight some aspects related to the characterization of the Algerian hedgehog *Atelerix algirus* ectoparasitics bioecology at the mountain of Edough. The resulting study was conducted from October 2011 until May 2012 when 07 hedgehogs were collected (03 males and 04 females), to perform a morphometric study and to collect, identify and quantify ectoparasites of the host. The results show an overall increase in morphometric parameters in the male compared to female. 54 ectoparasites were collected with 25 ticks and 29 fleas. Taxonomic identification of ticks allowed us to distinguish *Rhipicephalus turanicus*, Ixodes ricinus and Rhipicephalus bursa. The identification of fleas allowed us to distinguish Archaeopsylla erinacei. Parasite indices were also calculated to determine the status of every ectoparasite species.

Keywords : *Atelerix algirus*, Massif Edough, morphometric characters, ectoparasites, parasitic indices.

**_Carios capensis_ (Acari: Argasidae) in the nests of gulls leucophé (_Larus michahellis_) in the Aguili island to Réghaia, Algeria**

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ABSTRAT

During the both years 2012 and 2013, we conducted a surveillance to identify the soft ticks species (Acari: Argasidae) found in nests of Yellow-legged Gull (Larus michahellis) in the island Aguilli. This island is located at one km from the beach and the city of Réghaia, a coastal region of the Algiers, capital from Algeria. We collected 227 specimens of ticks from 31 nests. Carios capensis, soft tick species, was identified by morphological and molecular identification by polymerase chain reaction (PCR) using mitochondrial 16S rRNA gene. Prevalence, intensity and abundance of these ectoparasites species as well as its potential vector role are discussed to survey the risk factors for human populations.

Keywords : *Carios capensis, Larus michahellis*, Nests, Reghaïa, Algeria.

**Identification and inventory of ectoparasites adults and nestlings Barn Swallow *Hirundo rustica rustica* in two localities in eastern Algeria**

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ABSTRACT

Barn Swallow are migratory birds that winter in South Africa and migrate to North Africa and Europe to breed. The present study was carried out from March until the end of July 2013 in two municipalities of eastern Algeria. It concerned the inventory and quantification of ectoparasites of adults and nestlings Barn Swallow. The catch 30 question pairs Barn Swallows. Evaluation of the infestation of the nestlings was carried out on these nests couples. We found in adults as well as in nestlings , moths belonging to the family of Macronyssidae and lice family Menoponidae, it is Ornithonyssus bursa of *Mysidea rustica*, Hirundoecus of malleus and two species of Pellonyssus. However, it is *Hirundoecus malleus*, which is the species most prevalence, more intense and more abundant in both areas. It is followed by Mysidea rustica and *Ornithonyssus bursa*. The lowest parasite rates were observed in both species Pellonyssus.

Keywords : *Hirundo rustica rustica*, Ectoparasites, *Ornithonyssus bursa, Pellonyssus, Myrsidea rustica, Hirundinis malleus*

**Diet of the Barn Owl (*Tyto alba*) in three types of environments in the North Eastern Algeria**

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ABSTRACT

The Barn Owl *Tyto alba* is a nocturnal raptor breed in several regions of the world. This model has been studied extensively in its range, but studies in urban areas are still rare. Two study areas are located in the city of Annaba and in the villages at the surroundings. The third in a rural area in the city of El Tarf. (North East of Algeria).

The results obtained show that the diet of the Barn Owl consists of five food categories which are: The Micro mammals, Birds, Arthropods and finally Amphibians and Reptiles. The diet is more diversified rural compared to the other two circles. In peri urban diversity is slightly higher than in urban areas.

Keywords: *Tyto alba*, Diet, Urban area, rural area.

**Relationship between ectoparasitic intensity and immune response in the Algerian Hedgehog *Atelerix algirus* (Insectivora, Mammalia)**

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ABSTRACT

The objective of this study is to characterize the relationship between ectoparasitic load and immune response in an insectivore Micromammal, the algerian Hedgehog *Atelerix algirus*. The study involved 12 hedgehogs of similar weight, collected in different localities of El Kala National Park, from October 2012 until the end of May 2013. Depending on their parasitic infestation, we divided the samples into three batches, respectively, a little noisy lot, a lot parasitized by ticks and a lot parasitized by fleas. For each batch, we made blood smears for the establishment of the leukocyte formula. The results clearly illustrate the development of a non-specific defense mechanism, resulting in an increase in neutrophiles and eosinophiles, respectively, in lots LPTQ and LPPC.

Keywords: *Atelerix algirus*, ectoparasitic intensity, leucocyte formula, no-specific defense mechanism.

**Comparative ectoparasitic Ecology of Algerian Hedgehog *Atelerix algirus* between rural and peri-urban in the National Park of El Kala**

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ABSTRACT

Our problem tends to analyze the relationship between the degree of urbanization and ecology of ectoparasitology in algerian hedgehog Atelerix algirus at two localities of the El Kala national Park, namely locality of Boumalek (rural areas) and the agglomeration of El Kala. The study that follows was conducted since November 2012 until the month of May 2013 which were collected 26 hedgehogs (17 in Boumalek and 9 in El Kala), in order to collect, identify and quantify the ectoparasites of host and characterize their predilection sites. Taxonomic identification of ticks allowed us to distinguish Rhipicephalus and Ixodes. The identification of fleas has allowed us to distinguish *Archaeopsylla erinacei*. The results show that the overall infection rate is higher at the site of Boumalek relative to El Kala site. In addition, the results show a high prevalence of the genus Ixodes in Boumalek, comparatively with Rhipicephalus at El Kala.

Keywords: *Atelerix algirus*, Urbanisation, Ectoparasites

Poster : BIODIVERSITY

Climatic change

**GIS and Remote Sensing Assessment of changes in the periphery and the surface of wetlands. Case of Gareat Taref and its satellite sites. (Ramsar site, South Constantine_Algeria)**

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ABSTRACT

Algerian wetlands are subject to climate change and human pressure leading sometimes to the surface reduction of their water plans as well as the floodplains. Despite the apparent simplicity in the approach of the study approach of these phenomena, the practical assessment of these impacts has never been accurately quantified.
This study aims to describe the wetland of Garaet Tarf one of the twelve Ramsar wetlands of the wilaya of Oum El Bouagui and to measure, using the techniques of remote sensing and GIS, the evolution of important elements: the water plane surface, the flooded areas and the temporal evolution of these surfaces.
The data used are derived from LANDSAT images. To define the degree of flooding of the study area, it was necessary to identify the flooded areas at different times of the year 2013 (May 6th, June 07th, July 25th, September 11th, October 29th, December 16th and January 1st, 2014). Pretreatment thresholding is performed for each image with the ENVI 4.7 software. This pretreatment was made from the channel Middle Infrared (MIR), present in the Landsat 7 (TM 5) satellite. This channel responds by highlighting both, the water and as well as the vegetation with high water content.
The synthetic image is subdivided into 6 classes, from C0 to C5. C0 corresponds to dry land (76,043.67 ha), from C1 to C5 corresponds to wet areas (C1 = 1878.41 ha, C2 = 1047.02 ha, C3 = 337.25 ha, C4=3279.6 ha, C5 = 5.76 ha). The surface of water plains and floodplains in the study area has regressed between winter and spring / summer.

Keywords: Wetland, LANDSAT, Garaet Taref, Remote Sensing, GIS.

**Effects of climate changes on the benthic population: the case of watershed Summam**

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ABSTRACT

In aquatic environments, the spatio-temporal distribution and structuring communities benthic macroinvertebrates are largely related to changes in the hydrological factors, they are also related to a direct or indirect way to climatic factors. This work was carried out in two areas of the watershed Soummam (Soummam valley and plateau of Bouira), these two regions show very remarkable differences in climate, where a wet floor on bioclimatic happening in the capital of wilaya (Bejaia) a sub-humid floor along the valley Soummam, and ends with a semi-arid zone at the plate of Bouira. The spatio-temporal distribution of the settlement of benthic macroinvertebrates in the study area can be divided into three zones with different medium structure, where we have the downstream zone (from Bejaia to Ighzer Amokrane), which includes stations downstream of Soummam. The average area, which includes transient stations between the two types of climate (sub-humid and semi-arid), it spreads Ighzer Amokrane Tazmalt up, and finally the upstream zone, consisting of upstream stations of Oued Sahel, as well as the wadi Edhous, Ziane and Lakhel. Besides the ubiquitous taxa (Diptera, Oligochaeta and Ephemeroptera) community of benthic macroinvertebrates in the upstream area consists mostly of Arthropods (20%) and that of the downstream area is composed much of Crustaceans (8%) of gastropods (10%) and water mites (almost 2%).

Keywords: benthic settlement, Soummam watershed distribution and structuring, Algeria.

**Biological and physiological study of a gastropod *Helixe aspersa* exposed to multiple pollution (oil case)**

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ABSTRACT

In this study we were interested in assessing the impact of dust collected at the complex Sonatrach and Naphthalene is considered the most toxic pollutant, the most widespread in the environment of areas with high oil human activities and their effects on organizations and bioaccumulative organic pollution indicators Helix aspersa.
Initial results show that the presence of hydrocarbons in the air caused a loss of weight in snails, a dose-dependent decrease in organ weights in particular hepatopancreas and kidney and decreased weight and soft tissues that a reduction of the shell diameter and weight.
Metabolically, dusts cause a significant increase in proteins with a significant reduction of carbohydrates and lipids in the two organs studied.
Regarding biomarkers we demonstrated a significant reduction in the GSH levels, parallel to the significant increase in GST, the catalase activity in the kidney and hepatopancreas.

Keywords: Helix aspersa, biomarkers GSH, GST, MDA, catalase, bioaccumulation

**The expansion of the Cattle Egret in Algeria it is affected by climate change?**

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ABSTRACT

The main factors that contributed to the success of the global geographic expansion of the Cattle Egret are climate change, reproductive success related to the biology and ecology of the species nesting period, progress of agriculture, livestock development and irrigation. At Hadjout, in 2006 for the first brood. In terms of hatching success, the percentage of hatched eggs vary between 60 and 100%. For the second brood of the same year, the success rate of hatching vary between 50 and 100%. In 2007, rates of hatching success in this station are between 33.3 and 100%. It is the same in 2013 in Tizi Ouzou, since it is 100%. A Bouira in 2004, it is noted that there were few eggs per nest. The percentages of hatching success varied between 0 and 66.7%.

Keywords: Climatic factors, reproductive success of reproduction, Cattle Egret, Algeria

**Contribution to the iron deposit mine Ouenza impact study on the environment**

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ABSTRACT

The iron deposit mine Ouenza is located 120 km south-east of Annaba and 80 miles north of Tebessa. The mine is one of the most important units of production of iron across the Algerian territory.
Ore expansion causes dust that pervade almost all areas of the city. This dust is not only a source of environmental degradation, but also the quality of surface water; in addition, it has an impact on the vegetation.
This expansion of dust is also the leading cause of lung diseases including silicosis, which propagates in the urban areas.
In this experimental study, we were interested in assessing the impact of the exploitation of the iron deposit Ouenza and the environment.
The analytical results indicate that at ground level all the characteristics are in balance with environmental conditions and reflect a natural evolution of what soil in equilibrium with the semi- arid environment; it is the same for grades water that does not seem to be affected by the mining activity in the region.
The vegetation response to this disturbance is particularly evident at the level of chlorophyll assimilation. The finer dust is transported further and stronger than larger particles deposited on the leaf surface action.
As for the evaluation of the concentration of heavy metals in soil and water as well as at Wadi plant does not seem to be affected.

Keywords: field, Chlorophylls, heavy metals, dust, Ouenza

**Effect of restraint stress on the behaviour of male rat wistar: repair by immunosuppressive ; cyclosporin**

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ABSTRACT

Stress is characterized by physiological changes that occur in response to new or threatening stimuli. The contention is a stress model causing psychiatric disorders such as anxiety and depression. Cyclosporine is a drug usually used for its immunosuppressive effects in organ transplantation. The restraint stress was applied daily 2h 30 / per day for 14 days on male Wistar rats at the same time as the administration of Cyclosporin by intraperitoneal injection at 20 mg / kg body weight to see if the is able to repair the symptoms of depression caused by this type of stress. The results showed: a decrease in body weight in rats stressed compared to the Control, and rats undergoing treatment with Cyclosporine associated with restraint stress, with increased adrenal weight, thymus and brain in the same lot; an onset of depression in the lot by restraint stress compared to the other three batches evaluated in the behavioral test (forced swimming (FST)) occurs in this test by an increase in immobility time at the expense of swimming time and time climbing, which shows the state of despair of rats after 14 days of SC. Major depressive disorder is a serious psychiatric problem. In our study we tried to repairing damage caused by cyclosporine, which acts as an antidepressant and may also regulate the content of monoamines in the brain of rats subjected to stress. These restorative effects of cyclosporine were observed in behavioral tests (forced swimming) and the results of our study.

Key words: Rat, Restraint stress, Cyclosporin, depression, behaviour

**Valorization of aromatic and medicinal plants of the flora of Algeria in the food and pharmaceutical industries.**

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ABSTRACT

The vegetal extracts of aromatic and medicinal plants start to have much of interest like potential sources of natural bioactive molecules. Actually, it make the object of many study not only for their therapeutic activities as alternatives for the treatment of infectious diseases but also in agriculture as food preservatives additives in the formulations of functional foods and nutraceuticals. This functions, are in fact conferred by the nature of the chemical function of their major constituents (phenol, alcohol, aldehyde, cetone,…) witch play a preponderant role in the efficacy of their biological activity. This biopotentiallets us to focalize on the study of three main biological activities, the antioxidant, antibiotic and insecticidal activities of six Algerian aromatic plants belong to the botanic families fo Lamiaceae, Rutaceae and Asteraceae, in the aim of making in evidence by the chromatographic analysis (CPG and CG/SM) the phytochemical compounds implicating in this effects, for their ultimate valorization in the food protection. the contents of Oxygenated monoterpenes represented the most prominent group of constituents in the majority of plants.l' α-Terpineol (28,3%),le Carvacrol (47,3%), la pulégone (39,5%), la Chrysanthenone (27,4%), (Thymol 23,9% and γ-Terpinene 23,9%) et la 2-Undecanone(94%) were the main components. The antioxyding activity of this EOs was evaluated in vitro using four tests: (DPPH, ABTS•+), the thiobarbituric acid reactive substances (TBARS) assays and the reducing power. The measures of the IC50 of these six EOs and the three phenolic extracts revealed potent activity (between 254,64-462,76mg/l), almost similar to that of BHT, BHA, Tocopherol and Ascorbic acid. The study on the insecticidal activity effect by contact, inhalation, fecundity and fertility of Callosobruchus maculatus and Tribolium confusum showed a strong potential biocide reaching 95-100% mortality only after 24 hours. The antibacterial and antifungal activity of our essential oils were evaluated by a qualitative study (aromatogramme) and quantitative (MIC, MBC and CML) on four bacteria (Gram+ and Gram-) and one strain of pathogenic yeast, the results of these tests showed very interesting action than that induced by the same reference antibiotics (Gentamycin, and Nystatin Ceftatidine) such that the inhibition diameters and MIC values for tested microorganisms were in the range of 23–58 mm and 0.015–0.25%(v/v) respectively.

Keywords :Aromatic plants, essential oils, active molecules, antioxidant activity, insecticidal activity, antibiotic activity.

# POSTERS list
## Topic Wetland

**Study of the microscopic parameters of the biology of reproduction in *Squilla mantis mantis* Tunisian waters**

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ABSTRACT

This histological study represents the first approach to validate the results obtained in macroscopic reproduction of Squilla mantis in the Tunisian waters. The aim of this investigation is the identification of the oocyte development phases, the description the oogenesis kinetics and the spawning strategy of this species. 380 female ovaries of Squilla mantis caught in the Tunisian gulfs (Tunis, Hammamet and Gabes) were exanimate. In this study, the post-ovulatory follicles and atretic oocytes were used as indicator of a previous spawning. The histological stages were correlated to the macroscopic maturity and to the gonad index to validate the reproductive cycle of S. mantis. The analysis of the histological sections of the female's ovaries shows that oogenesis can be divided in 4 phases: pre-vitellogenesis, vitellogenesis, maturation and atresia. The sexual cycle of S. mantis may be composed of 6 stages: juveniles, sexual rest, early-vitellogenesis, vitellogenesis, spawning, post-spawning and recovering. The presence of post-ovulatory follicles and a low frequency of oocytes at different stages of development affirm that the spot-tail mantis shrimp have a single spawning in the Tunisian waters.

Keywords: Squilla mantis, spawning strategy, kinetics oogenesis, histology, Tunisian waters.

**Assessment of Nutrients from Four Tunisian fish farms**

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ABSTRACT

In the last decades, marine aquaculture has an important development around the world. In fact, fish farms can generate persistent inorganic elements and nutrients. These element are an essential chemical components of life in the marine environment, but the excessive enrichment, or eutrophication, generate highly undesirable conditions in ecosystem structure and function. The aim of this study was to evaluate the levels of nutrients (Nitrate (NO3, Nitrite (NO2), Ammonium (NH4), Phosphate (PO4), Silicate (Si), Nitrogen (N) in water and Total Organic Carbon (COT) and Total Nitrogen (TN) in surface sediments from four fish farms (SAMAKA, MIDORA, TSF and MFC) in Hammamet Gulf (Eastern Mediterranean Sea). Nutrients were carried out by Autoanalyzer using the standard colorimetric methods according to Strickland and Parsons (1972). TOC and TN were determined by a CHNS elemental analyzer. The concentration obtained in µmol/l for different element varied between 0.1 and 0.45 for NO2; 0.96 and 2.79 for NO3; 1.75 and 4.07 for NH4; 0.06 and 0.12 for PO4; 1.74 and 4.79 for Si; 11.99 and 13.93 for N and 1.44 and 2.03 for TPO4. The levels of TOC and TN, from surface sediments below the cages, varied between 0.15% and 1.26% and 8% and 21% respectively. NO2, NO3, PO4 and TPO4 values peaked in water from SAMAKA fish farm. The highest levels of NH4, Si and N were recorded MFC fish farm.The nutrient level in water column may be related to sources arising from various anthropogenic activities within the study area. Moreover, the spatial variability was due to increasing nutrient concentrations at the localities close to non point sources.

Keywords : Nutrients, fish farms, Gulf of Hammamet.

**Assessment of the nutritional quality of red *mullet Mullus barbatus* from Tunis Gulf (Mediterranean Sea, Northern Tunisia).**

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ABSTRACT

This study aim is to evaluate the levels of oligo-elements (Mg, Ca, Na, K, Fe and Mn) and the fatty acids in four tissues (muscle, liver, brain and gonads) of a benthic teleost species, the Red Mullet (Mulus barbatus). This benthic fish is one of the most important landed species in gulf of Tunis (Mediterranean Sea, Northern Tunisia). Mullus barbatus is considered as a common species in this area throughout the all seasons. In this study, the organotropism, the seasonal effect of oligo-elements and fatty acids accumulation was determined. The beneficial effects of fish consumption on human health has been related, among other factors, to the high content of n-3 (or ω3) fatty acids, especially eicosapentaenoic acid (C20:5n-3) and docosahexaenoic acid (C22:6n-3).

The concentrations of Mg, Ca, Na, K, Fe and Mn were performed using Flame Atomic Absorption Spectrophotometry. Fatty acids were analysed by Gas Chromatography. The results showed a seasonal variation in all elements in gonad with a peak in spring. Additionally, the gonads are the preferential site for accumulation of Mg and K; the brain for the Ca and Na and liver for Fe and Mn.

The results concerning fatty acids demonstrate that the levels of monounsaturated and saturated acids increase when the levels of polyunsaturated fatty acids decrease in all tissues of Red Mullet. Lipid levels of displayed pronounced seasonal fluctuations, with the highest value in March and the lowest value in May. In addition, the highest level of index n-3/n-6 was observed in gonads during spring season. It is concluded that the red mullet is a particularly healthy item in the human diet during spring period, when balanced n-3/n-6 ratios and EPA and DHA levels are considered.

Key words: Mullus barbatus, Red Mullet, oligo-elements, fatty acids, Gulf of Tunis.

**Didymozoidae (Digenea, Plathylminthes) parasit of *Sphyraena sphyraena* (Pisces, Teleostei). Gulf of Gabès.**

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ABSTRACT

Didymozoids are parasites of teleost marine fishes. These Digenea met solitary or encysted in pairs under the oral mucosa, between the eyes and the parasphenoid, between the gill filaments and the gill rakers. Several studies have shown their pathogenic effects that can cause secondary bacterial infections and tissue alterations, reducing the commercial value of the fish and presenting a risk of emerging zoonotic diseases and allergies to human.

A total of 40 specimens of Sphyraena sphyraena from three sites in the Gulf of Gabes were examined between October 2012 and March 2013. Parasites collected showed the abundance of Digenea Didymozoidae Didymozoon sphyraenae. This helminth has been found in the oral, nasal and orbital cavities. It shows a high prevalence (92.5%) and an average intensity of 3.67 (which can reach 20 individuals per fish).

D. sphyraenae has been reported only in the northern Mediterranean (Italy, France). This is the first time we reported this Didymozoidae in Tunisia. This Digenea seems specific to its host, in fact examining the congeneric species Sphyraena chrysotaenia did not reveal Didymozoon sphyraenae.

Key words: Didymozoidae, Sphyraena sphyraena, Didymozoon sphyraenae, Gulf of Gabes, Tunisia.

**Study of the live food of bivalves at a shellfish farm in Bizerta lagoon**

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ABSTRACT

In Tunisia, shellfish culture has continued to grow over the past decade. Thus, several shellfish farms were recently installed on the offshore, while others exist already since the 1960s inside of Bizerta lagoon. This lagoon is an important coastal habitat and could be considered as the most favorable environment for natural reproduction of the mussel Mytilus galloprovincialis and the growth of the oyster Crassostrea gigas in Tunisia. Shellfish farming is an activity based essentially on the quality and quantity of phytoplankton that represents the essential food for filter-feeding bivalves. The qualitative study of phytoplankton populations at the level of one shellfish farm belonging to this ecosystem, revealed the existence of 40 taxa of diatoms and 40 taxa of dinoflagellates. 7 taxa from each group would qualify to constant presence. Among the diatom Navicula spp. has presented the highest index of presence while among the dinoflagellate it's Scrippsiella trochoidae who presented the highest index.

Keywords: Bizerta lagoon, Phytoplankton, shellfish aquaculture, Diatoms, dinoflagellates.

**Impact of the ballast waters in the dispersal of the toxic phytoplankton in the Bizerta lagoon**

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ABSTRACT

Toxic dinoflagellate species that are not endemic to a given region can be introduced inadvertently when their cysts are discharged via ballast water sediments of bulk container ships. These species, which can affect fish and shellfish farm, pose a serious threat to public health and aquaculture. It is within this framework that the quest for cysts, based in surface sediments from different ships docks in Bizerta lagoon, has enabled us to distinguish four morphotypes of toxic dinoflagellate cysts. In the present study 3 resting cysts of harmful species likely to cause Harmful Algal Bloom (HAB) have been considered: Alexandrium catenella, A. pseudogonaulax and Lingulodinium machaerophorum. Mean density of highest cysts have been recorded by A. catenella (61 cysts g-1 of dry sediment) and its distribution was most important in the region of Menzel Bourguiba Wharf. L. machaerophorum has reached a maximum concentration of 55 cysts g-1 dry sediment in the same area. The present study provides information on the presence of harmful species in Bizerta lagoon whose distribution would be influenced by the nature of the currents and sediments which warns the prosperity of shellfish aquaculture activities in this ecosystem.

Key words: Ballast, cysts, Harmful Algal Bloom, Bizerta lagoon.

**Reproduction and spawning time of *Scorpae nascrofa* Linnaeus, 1758 in the western part of the Libyan coast**

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Abstract

A total of 394 of Red Scorpionfish Scorpaena scrofa were monthly collected from fishermen in the Western Region of Libya (Tripoli) during the period from February 2010 to January 2011. Those samples were freshly transferred to laboratory at the Department of Zoology, University of Tripoli. Some measurements have been taken to investigate the growth and spawning season for this species. The length–weight relationship showed a negative allometric growth. W = 0.052 L2.66, The age range estimated was up to 6 years, the Von Bertalanffy was LT = 116 cm (1 – e - 2.2494 (t +1.11)). The sex-ratio did not differ significantly from 1 : 1 between size classes or months. The spawning season has extended from July to September in the area of study. This study showed some important information on S. scrofa in the Libyan waters that can provide a contribution to other studies such as fish stocks, as well as giving some biological information to the researchers and specialists at the local, regional and international levels.

**Status of artisanal fisheries in Libya**

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ABSTRACT

More than 120 landing sites have been visited in order to investigate their status and fishing activities along the libyan coast. The study found that more than 91% of the landing sites were permanent and around 8% were seasonal. The type of landing sites were mostly harbors (42.86%), 31.75% protected bays and 25.4% are open beach. However, seven types of fishing boats were observed; flouka type was the largest percentage (70.06%), then 18.14% for mator, 3.28% forlampara, 0.41% for Tarrad, Gayag(0.16%),5.97 for Daghesaand 1.98% for batah. Moreover, the majority of them were concentrated in the western region of the country. The most important fishing gear used in the coastal area is the trammel net which is used by flouka, mator and batah. Depending on the fishing season, the fish size and the target fish species, some other fishing gear is also used occasionally.

**Gender Lagocephalus (Tetraodontidae - Fish) along the Algerian coast: Distribution and diagnosis**

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ABSTRACT

In the Mediterranean, it was reported 4 species of Lagocephalus belonging to the family Tetraodontidae (Golani *et al.,* 2006): *Lagocephalus lagocephalus* (Linnaeus, 1758) - *Lagocephalus spadiceus* (Richardson, 1844) - *Lagocephalus sceleratus* (Gmelin, 1788) - *Lagocephalus suerensis* Clark & Gohar, 1953. All these species have an Indo-Pacific origin, they have returned to the Mediterranean through the Suez Canal with the exception of one species *Lagocephalus lagocephalus*. In Algeria, *Lagocephalus lagocephalus* and *Lagocephalus sceleratus* have been identified in several sectors of the Algerian coast, including these two species can be clearly distinguished from one another by their dorsal part. These species have hit the headlines by the level of toxicity, When is really with the scientific data collected along the Algerian coast.

Keywords: Lagocephalus, Fish, Distribution, Diagnose, Algerian Coast

**Morphometrie of the tow color morphs of sea bass *Serranus cabrilla* (serranidae) of the gulf of Annaba, Algeria**

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ABSTRACT

The mediterranean cabrilla sea bass Serranus cabrilla exhibits two colors morphs (red and yellow) that appear to be depth segregated, with yellow individuals found below 20m and red ones found above 20 m (Medioni et al., 2000). The study presented here is a contribution to the knowledge of the morphology of S. cabrilla in the gulf of Annaba. Between February 2013 & April 2013 and, we examined a total of 188 specimens including 119 specimens red overall lengths (Lt) ranging between 13.5 and 23.5 cm, and a weight (Wt) ranging between 23.83 and 89.48 G & 69 specimens yellow overall lengths (Lt) ranging between 14.7 and 23.7 cm, and a weight (Pt) ranging between 33.09 and 136.24 G. From sixteen metric characters and six méristiques, we characterized the morphology of the two pennies populations of the gulf of Annaba. The got results are checked by the test "T" of Student to the threshold of significance p=0,05 with coefficients of correlation (R) variable between 0.08 and 0.73 for the red population and from 0.21 to 0.88 for the yellow population where one noted overall a isometry enters the standart length (Ls), cephalic length (Lc) and the overall length (Lt), an allometry undervaluing between the length of the orbit (Lo) and the cephalic length (Lc), and raising for the rest of the metric characters. Concerning the characters meristic , a number fixes hard and soft rays of the anal fin equal to 3-7 for the whole of the sample of both morphs, and of the same for the number of hard rays of the dorsal fin (NHRD = 10). With regard to the relation size-weight of both morphs presents a isometry.

Keywords: Biometrics, size-weight, fish, Serranus cabrilla, two morphs, gulf of Annaba, Algeria.

**Morphometrie of the serran kids serranus cabrilla (serranidae) of the gulf of annaba, algeria**

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ABSTRACT

The serran kids *Serranus cabrilla* (Linnaeus, 1758) is a small benthic fish which attends as well littoral water as deep of the Mediterranean. On the Algerian coasts, small the serranidés coastal ones of the Serranus kind are rather common (Derbal and *al*., 2001; Refes and *al*., 2010, but far from known compared with the studies carried out on Serrranidae of the kind Epinephelus (Derbal and *al*., 2007; Kara and *al*., in progress).

The study presented here is a contribution to the knowledge of the morphology of *S. cabrilla* in the gulf of Annaba. Between October 2008 and November 2009, we examined a total of 280 specimens overall lengths (Lt) ranging between 12 and 23,7 cm, and a weight (Wt) ranging between 16,11 and 136,24g. From sixteen metric characters and six meristic, we characterized the morphology of the population of the gulf of Annaba. The got results are checked by the test "T" of Student to the threshold of significance p=0,05 with coefficients of correlation (R) variable between 0,72 and 0,98, where one noted a isometry between the length standart (Ls), cephalic length (Lc) and the overall length (Lt), an allometry undervaluing between the length of the orbit (Lo) and the cephalic length (Lc), and raising for the rest of the metric characters. Concerning the characters meristic, a number fixes hard and soft rays of the anal fin equal to 3-7 for the whole of the sample, and of the same for the number of hard rays of the dorsal fin (NHRD = 10).

Keywords : : Biometrics, fish, Serranus cabrilla, gulf of Annaba, Algeria.

**Study of the diversity of sponges *porifera: Demospongiae*, of the southern shore of the mediterranean**

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ABSTRACT

Study of the diversity of sponges (Porifera: demospongiae) of the south of the Mediterranean (Algeria). In the present study we aimed to describe and inventory the sponges (Demospongiae, Porifera) sampled from several coastal zones in the golf of Annaba. Thus, a series of sampling in areas of Cap de garde were collected between 9 and 35 meters deep. Microscopic observation of the first samples, allowed us to identify the species Chondrosia reniformis belongs to the family of chondrillidae ; Petrosia ficiformis to Petrosiidae family, as ircinia et Sarcotragus genus of the Ircniidae family abundant in low deep. This systematic and taxonomic study of sponges complements the biodiversity inventory of the Algerian fauna, for a good exploitation of this resource.

Keywords: Mediterranean, Porifera, Sponges, Systematic, Annaba golf

**Contribution to the histological study halophyte *Salicornia europaea* of National Park El Kala**

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ABSTRACT

A study of the branch anatomy of a halophyte Salicornia europaea identified in the National Park area of El-Kala (El Mellah lake) in the Algerian coast has identified a sense of adaptive evolution within this species. This anatomical adaptation is correlated with a physiological adaptation revealed that the epidermis and the deeper tissue architecture of the aerial parts of this species develop structures of varying complexity which show great adaptation to salinity and drought in the middle. This species is mostly annual, taking a cushion shape to reduce heating. The aerial parts are maintained during the dry season. This requires to the plant a set of devices that are designed to reduce water loss by transpiration and the branches provide chlorophyll assimilation.

Key words: halophile, halophyte, salicornia, salt, histological cuts.

**Bacteriological quality of some wetlands of Guerbes-Sanhadja complex (Skikda, Northeast Algeria)**

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ABSTRACT

During this study we investigate the bacteriological quality of 4 lacks in the Guerbes-Sanhadja complex (Northeast of Algeria), in order to evaluate the number of the bacteria which indicate the level of pollution in these ecosystems. Our study is during 1 season (between 2012 and 2013) and the bacteria analyzed were : the total coliform, the fecal coliform, the Enterococcus and the ASR. The maximum number of these bacteria was recorded in the hot season (between May and August) because the decrease of the water level (agriculture activity) and the entropic pollution caused by the local population living around the sites. The correspondence analyses shown the effect of the temperature in the temporary evolution of the bacteria number during this study and this situation caused a large pressure for the fauna population in these Garaets especially the water-birds (wintering in this complex).

Keywords: Guerbes-Sanhadja complex, pollution, agriculture activity, bacteria.

**Contribution to the palynological study of wet sediment temporary pools of El Frin complex, Eastern Numidia (North-eastern Algeria)**

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ABSTRACT

The eastern Numidia includes wetlands which are transitional ecosystems between terrestrial and aquatic habitats. These freshwater or brackish habitats contain very specific biotic and abiotic components, which are a biological heritage of great importance.
As part of the contribution to the palynological study of wet sediment temporary pools of El Frin complex, we chose to study five Gauthier ponds located in the region of El Frin in Eastern Numidia.
Pollen analysis of samples wet sediments 5 to 10 cm depth, taken in specific areas belonging to five sites in temporary pools of El Frin complex revealed a very low representation of pollen of alder within five ponds studied, due in particular to ecological characteristics of Alnus that grows in wetlands or near bogs, whose pollen has a local origin. On the other hand, there is an abundance at five ponds of pollen Isoetes that is specific to wetlands generally and particularly temporary ponds. We mention also significant rate of other pollens such as *Myriophyllum alterniflorum, Myrtus communis* and Erica type. The peripheral zone of the pond Gauthier4 presents significant differences with other pools of El Frin complex (abundance of *Baldellia ranunculoides* and *Pilularia minuta*...).
These results, however, remain incomplete, thus necessitating the pursuit of the effort to ever more precise knowledge of wetlands and particularly temporary ponds.

Keywords: Palynology, temporary pools, wet sediments, eastern Numidia

**Environmental diagnosis of Lake Sidi m'hamed benali "establishment of geographical information systems (GIS)"**

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ABSTRACT

Lake Sidi M'hamed Benali is a strategic site environmental point of view, tourism and socio -economic. Several studies are being conducted to his advantage: size, assessment of water quality, flora and fauna inventories (macro and microscopic). Besides this, various sectors have proposed management plans and site development according to the importance of their objectives. Data collection over the last decade has enabled us to structure information using S.I.G suitable to use MapInfo version 8.0 software. Therefore, it was possible to establish a base of easy to handle data and create a synthetic map available to users for sustainable community development. However, the need for a contribution from the authorities and civil society is recommended for maintenance and conservation of the lake for the benefit of nature and future generations.

Keywords: Lake Sidi M'hamed Benali, Water Quality, Inventory fauna, flora inventory, SIG, database, MapInfo, Sustainability

**Island Rachgoun: a site of ecological interest to protect the coastline west Algeria**

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ABSTRACT

The littoral of Rechgoun located on the coastline of Oran, west of the wilaya of Ain Témouchent and East of the Wilaya of Tlemcen. It is distinguished by a remarkable marine and terrestrial biodiversity. This natural heritage must now receive special attention in view of its classification as a nature reserve.
The objective of this study at the island Rechgoun fits into this framework to characterize the habitat, eco-evaluate its biological potential, but under severe anthropogenic pressures that strongly indicate the need to develop a database and initiate emergency measures to protect the site island in question.
The presence of common species, often remarkable, their endemism, rarity, vulnerability, and belonging to different groups of animals and plants, with a status across regional and national view forming an island ecosystem of an exceptional fishing resources strongly anthropic, in the opinion of several partners consulted with a direct or indirect link with the site in question that requires an emergency protection order to prevent him denaturation in the future, on the one hand and the resemblance of its ecological niche compared to other similar national sites already classified in this region.

Keywords : Island Rechgoun, website insular terrestrial and marine biodiversity, human pressure, eco-biological potential, Oran, western coast of Algeria.

**Contribution to the identification and analysis of the spatial distribution of phytoplankton diversity parameters brackish waters (Case of El Mellah lagoon-PNEK-Region of El-Tarf)**

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ABSTRACT

Our study in spring 2013 at the El Mellah lagoon, north-east Algerian goal was to make an inventory of phytoplankton and follow its spatial distribution in the horizontal plane, and to analyze the spatial distribution of physico-chemical parameters of the water upon which the biological richness of the lake.
The existence of a random spatial variation was found for some physicochemical descriptors (dissolved oxygen, redox potential and turbidity). The spatial distribution of pH, conductivity, temperature as well as the richness and diversity of phytoplankton distribution follows a positive gradient from north to south of the lagoon.
In terms of structure, the phytoplankton community is characterized by a higher number of taxa of Bacillariophyceae (62%) followed by Dinophyceae (15%) of green algae (13%) and cyanobacteria (8%). the Streptophycophytes are less represented (2%)

Keywords : El Mellah lagoon - distribution physicochemical parameters space-phytoplankton-

**Hydrological, ecological characterization and sustainable development of wetlands; case Garaàt Timerganine**

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Abstract

Wetlands are now a precious natural heritage should be preserved and restored because of the multiple functions that filled and resulting benefits to society. This approach is the characterization and function of wetlands and the establishment of a management plan for both solving the problems leading to the degradation of wetlands and towards a systematic approach to sustainable management. Garaet Timerganine belongs to the complex of the high plains of Constantine, characterized by its high biodiversity including its rich birdlife that gives their particular place within ecological systems, and international status Whose objective is to identify the main major characteristics, physical and biological resources of the site process to determine the importance and lead to management approaches close conservation area in the exploration of sustainable development.

Keywords Wetland, functioning, characterization, natural heritage, sustainable development.

**Pollution degree determination of the Black Lake waters (Region Bordj Ali Bey, Bouteldja).**

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ABSTRACT

Pollution phenomena usually result in changes in the physico-chemical characteristics of the receiving environment. One of means to study this pollution is to measure, through analysis and at different times, the physico-chemical parameters in surface waters. Since the Black Lake is considered as a bog, it water can be polluted, it is for this reason that the determination of the pollution degree is essential to determine. This determination is based on the determination of the organic pollution index (OPI), it helped us to distinguish low to moderate pollution level of the lake, which implies that the Black Lake area is far from any human activity.

Keywords: pollution, Black Lake, Bordj Ali Bey, Bouteldja, organic pollution index.

**Modeling the impact of an aquifer recharge in a wetland from a lake (Case of the Bouteldja unconfined dune aquifer and the Black Lake).**

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ABSTRACT

Mathematical simulation models of groundwater flow (hydrodynamic models) and of pollutants spread (hydrodispersive models) have become dynamic and powerful tools in the management of water.

Our numerical model is a simulation model of the pollutants spread based on the hydrodynamic model (Saaidia. B, 2006), chemical analyzes of Black Lake waters of considered as an ideal site for an artificial recharge, as well as sands hydrodispersive parameters in the vicinity of the lake.

Steady state flow simulation of the sulfates which show significant concentrations exceeding standards allow to show that these concentrations are dissipated approximately the Black Lake, this implies that the waters of the latter have no impact on water quality of Bouteldja unconfined dune aquifer in an extremely long period.

Keywords: hydrodispersive models, Black Lake, artificial recharge, hydrodispersive parameters, steady state flow.

**Study the biological denitrification: application on wetland of Khenchela.**

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ABSTRACT

To study the biological denitrification , bacterial strains were isolated and purified from activated sludge and inoculated in a series of batch reactors contain a medium rich in nitrate culture, incubated anaerobically following in a jar candle 30 ° C. The kinetics of these bacteria by denitrification is followed by colorimetry. Three bacterial strains were identified as denitrifying bacteria, Enterobacter cloacae, Pseudomonas luteola and Aeromonas hydrophilae. These three strains give a nitrate removal of water with different speeds. Enterobacter cloacae and Aeromonas hydrophilae reduce nitrate and with speeds de18mg/l/h 13.3 mg / l /hr, respectively, while the Pseudomonas luteola reduced with a higher speed ( 24mg/l/h ) this species has no pathogenicity for humans , and can thus be used as a reducing agent of nitrates in waters.

Keywords: Wastewater, Biological treatment, nitrate removal

**Environmental impact on the dynamics of phytoplankton population in an artificial wetland: Dam of Koudiat Medouar (Timgad, Batna).**

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ABSTRACT

This study focuses on the ecological characterization of phytoplankton in the dam of Koudiet Medouar, representing one of the artificial sites of the wetlands complex of the eastern high plains. The monitoring of the temporal dynamics evolution of alguale populations was conducted between january 2013 and june 2013, in three stations subject to different degrees of human impact. This study allowed the identification of 57 genera of phytoplankton representing 30 families, 17 orders and 7 different classes. We note a clear predominance of the Diatomophyceae and the presence of 13 genera considered toxic. The spring period promotes abundant phytoplankton bloom, but it is summer season (41 genera, H '= 4.38 bits) and winter (46 types, H' = 3.65 bits) which are represented by more diversified and the populations are equally distributed. The station 1 (49 genera and 506 individuals) and 3 (47 genera and 1881 individuals) allow the installation of more diverse and abundant phytoplankton. The highest values of H 'are noted in the station 3 with 3.81 bits and station 2 with 3.65 bits. The station 1, whose waters are stirred by the winds and the station 3 frequented by humans would promote diversification and abundance of phytoplankton. However, the organic matter emitted by farm animals as well by water-birds in station 2, are the cause of non-proliferation of phytoplankton.

Keywords: Dam Koudiat Medouar, Phytoplankton, Diatomophyées, Biodiversity, Population dynamics, Artificial wetland.

**Study of toxic effects induced by an herbicide (Focus Ultra) in a freshwater cellular model: *Paramecium tetraurelia***

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ABSTRACT

Regions of eastern Algeria are characterized by their intense and uncontrolled agricultural activities. Unfortunately, the inappropriate use of pesticides by farmers may have adverse effects on the environment. The dispersion of these pesticides in aquatic ecosystems most commonly affects the base of food chains and can be a direct cause of the disappearance of certain aquatic species. Therefore, we elucidate by the present work, the inhibitory and toxic effects of an herbicide widely used in Algeria from the family of cyclohexanediones (cycloxydim); on the biology and ecology of an alternative cell model how is the freshwater ciliated protist: Paramecium tetraurelia. The results show that the growth of Paramecium is sensitive to treatment with cycloxydim for higher concentrations. Inhibition of cell growth was evaluated by determining the IC 50 and by calculating the percentage of response which evaluates the protists response respect to this xenobiotic. Changes in biomarkers of oxidative stress including glutathione (GSH) and glutathione -S- transferase (GST) showed dose-dependent fluctuations, so we showed a significant decrease in GSH level, along with a strong induction of GST activity.

Keywords: biomarkers, oxidative stress, *Paramecium tetraurelia*, herbicide, cycloxydim, IC50.

**Pollution of Oued El Gourzi, impacts and effects**

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ABSTRACT

The streams in Algeria are threatened on their water quantity and quality, because it is still a dump site for sewage water and all kind of wastes, Therefor cause irretrievable damage to biodiversity. This study consists to assess the potential impacts of the pollution of Oued El Gourzi on the pedofauna living in the ground borders of this wadi. The study was conducted in two different areas (Fesdis and Oued Taga). In order to estimate the potential impact on the soil quality, the results obtained after a study of some properties indicate some influence by pollution of Oued El Gourzi. The inventory of soil organisms by Berlese-Tullgren`s device, identified a total of 31 species belong to 03 classes, 10 orders and 24 families on the Gourzi river`s edge and a total of 17 species belonging to 06 classes 08 orders and 13 families near Charchar`s edge. The calculations of ecological indices shows a clear difference between the two environments (Shannon-Weaver index was 2.02 in Wadi El Gourzi and 3.24 in the stream of Charchar) (Simpson diversity index was 0.49 in wadi Gourzi at Fesdis and 0.83 in stream of Charchar in Oued Taga ).

Keywords: watercourse, pollution, Soil fauna, biodiversity, ecological index.

**Status scrubber wastewater *Iris germanica* in the region Oum El Bouaghi (Oued Meskiana)**

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ABSTRACT

We have conducted an experiment simulating tray - a flow vertical constructed wetland for treating a waste water, we take a sample from the plain of Meskiana in which we use *'Iris germanica'* The system showed satisfactory performance for superior removal of TSS, COD and BOD. Through this scientific experiment we notice that the system plants with iris has been very effective in terms of treatment. This highlights the positive role of plants. The main process was filtering particles from the substrate. Microorganisms have played a major role in the degradation of organic matter. Plants have had positive effects on treatment. Indirectly, the root system has strengthened the filter substrate and stimulated microbial activities; roots exuded organic substances. Directly, the plants have absorbed elements are then stored in the biomass of plants this direct role is not negligible.

Keywords*: iris germanica*, plain of Meskiana, waste water, pollution, filtration

**Inventory and characterization of sources of pollution and nuisance of Lake Sidi M'hamed Benali (Sidi Bel Abbes country, Algeria North- West)**

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ABSTRACT

Sidi M'hamed Benali Lake (Sidi Bel Abbes country) is considered an important environmental limnic because its strategic location and its characteristics returning to its fauna and flora diversity. Unfortunately, this medium has undergone a remarkable pollution in recent years .
The results of physico-chemical water analyzes show that this ecosystem is enriched advantage nutrients (nitrogen , phosphates, nitrites, nitrates, potassium, magnesium, chloride, sulfate and calcium).
The application of PCA on the different results, we have used to identify multiple sources of pollution, citing human activities that occupy a large share of responsibility for the degradation phenomenon whose eastern and northern shores are the most exposed to this pollution. In addition, contamination by fertilizers , and have as origin fertilizers used in nearby farmland can be harmful at high concentrations where the west bank attests. Similarly, the water coming from the river Mekerra constitute a real threat to stations south of this site.
Following these findings we can say that the current state of the lake suggests that if nothing is done in the very short term, this ecosystem may become a dumping ground for junk and eutrophication will soon come.

Key-words : Lake Sidi M'hamed Benali, pollution, physico- chemical quality, bacteriological quality, ACP, eutrophication impact.

**Biodiversity of macrobenthos streams of Kabylia (Algeria)**

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ABSTRACT

16 stations encompassing a wide variety of running water from streams to rivers were sampled. These stations are located at altitudes ranging from 60 m to 1115 m. 112 benthic invertebrate taxa belonging to 14 zoological groups were counted.

The abundance, taxonomic richness , diversity and evenness were studied. Sites affected by a slight organic pollution have significant abundance due to the proliferation of Oligochaeta, the Ephemeroptera and Diptera Chironomidae and Simuliidae. The upstream sites have a fairly balanced structure with abundances ranging from 4638 individuals and 9509 individuals. As for the low-lying sites, most affected by organic pollution and / or industrial , they have a distorted structure with less abundance.

Stations upstream of rivers contain more than 80 % of the total taxonomic richness. Stations in foothill and lowland (intermediate disturbance areas), the number of taxa collected is relatively small : between 30 and 48 taxa.

We calculated for each station diversity index H ' which incorporates taxonomic richness and relative abundance of different taxa, the ratio E = H' / Hmax corresponding to the index of relative diversity or equitability. The taxonomic diversity of the different altitudinal gradient reveals stations with maximum diversity in upland areas .

The benthic community structure was visualized by multivariate statistical methods ( PCA, CA ) to show the affinities of species for selected environmental variables . The hierarchical clustering enabled to individualize 4 nuclei affinity between stations on the one hand and the other species, and determined by a longitudinal gradient. Specific associations and resorts that host helped break up the basin of the river Aïssi into four zones. Each area thus defined, a list of basic species and accessories is given.

Keywords : Benthic invertebrates, diversity, community structure, Kabylie, Algeria.

**Impact of irrigation water on the environment in the region of Ouargla**

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ABSTRACT

In the course of that last decade, the unreasoned irrigation in region of Ouargla, has experienced a certain evolution based especially on squandering of water who possibly have an effect environmental as out of the site as in it. In all the region, the environment is damaged by the water excess because the ground waters who are aimed at be risen form in the surface the washes who pollute the nature.
Moreover, the increase of solid discharges in a natural environment contributes to damage our environment. Among those discharges "the plastic bottles". We must don't forget that one plastic bottle takes several centuries for to be deteriorated and if it is sheltered from light its deterioration takes more time. The more ecologic solution would be to reuse it.
The objective of our work is the reuse of plastic bottles in irrigation in order to save water firstly and reduce discharges secondly. The plastic bottles are pierced, buried into ground at certain profounder and filled of water periodically in order that the humidity who given out by them nourishes the plant roots only.
The results obtained are very significant because, firstly, we reuse the local products and secondly, as the bottles are buried we avoid the water loss by evaporation especially during dry periods, the rise of ground water and salinity. Considering that irrigation method, the culture will be possible also in absolute deserts.

Keywords: Environmental, plastic bottle, irrigation, ecologic, Ouargla

**Assessment of the state of the Lake of Birds in the Wilaya of El Tarf**

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ABSTRACT

Algeria is rich in wetlands that are an important seat of biodiversity. Despite their importance, wetlands are in a state of deterioration. Lak of birds, is a natural reserve classified in Ramsar since 1999, which is located in the Wilaya of El Taref, extreme North East of the Algeria. To better estimate the state of the Lake, field observations were conducted to give a general description of the site, as well as laboratory studies were performed in order to give a better estimate of the quality of the environment. We chose the fresh water mites (Acari: Hydrachnidia) of Eylais hamata as a biological model. Sampling was carried out at the level of five stations for three successive months, March, April, May, 2013. A determination of the enzymatic activity of GST was done on species collected at the Lake. A high rate of the enzymatic activity of GST was observed at the level of the stations close to sources of pollution, as well as a rise of activity during the month of May. A follow-up study was conducted by an analysis of the physicochemical parameters of Lake. We observed fluctuations in the natural state of the site studied as a disfigurement has breast of the protected site following interventions by men.

Keywords: biodiversity, Ramsar, Hydrachnidia, enzyme activity.

**Mapping the distribution of macrobenthic crustaceans of coastal wetlands of the Gulf of Oran**

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ABSTRACT

The distribution of crustaceans seems to occupy the whole of the Gulf of Oran (northwest coasts of Algeria). The present study focused on the macro benthic crustaceans of the Gulf of Oran within a bionomics study of the continental shelf has been very little research work. Thirty-five stations were sampled. One type of device was used for sediment sampling and macro fauna: the Tipper Aberdeen or Aberdeen Smith MC Intyre. Two Tipper are made for each dump station, is 0. 2 m 2 surface taken. Particle size analysis of the substrate was sampled stations Highlighted s everal litho logic facies. Counting and identification of crustaceans allowed to inventory of 66 species. These data are treated by the multi statistical analysis – varied : Principal component analysis (PCA) Which shows the relationship between crustaceans and sediment texture and distinguishing characteristic specie and major dominant ecological stocks and develop a mapping distribution of marine organisms.

Key-words: Gulf of Oran, macro benthic, Crustaceans, Aberdeen Smith MC Intyre, particle size analysis, PCA.

**Study of the competition between different species and strains of Artemia identified in salt lakes of Algeria**

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ABSTRACT

The present study highlights the effect of competition between indigenous Algerian Artemia a crustacean in a mesocosm during winter - spring. First, a morphometric study of the specimen from the cyst hatching populations, coming from salt lakes of different locations (Oran, Bethioua, Relizane, Adrar, Melghir, Ezzamoule El Goléa) allowed us to differentiate between the various species and strains present in each population. Subsequently a number of 100 nauplii, aged 48h from pure cyst hatching of each population identified (A. salina, A. parthenogenetica diploid and tetraploid) are introduced into a medium consisting of a brine of 65 gl -1 and a mixture of microalgae (Tetraselmis sp and Dunaliella sp). Seasonal variations cause changes in the competitive abilities of the three indigenous forms used. Sexual populations show their presence at low temperatures. When temperatures rise appears parthenogenetic strain: in the first tetraploid form followed by the diploid. Parallel begins loss of the sexual. As a result, parthenogenetic strains manifest preference to live at high temperatures. Parthenogenetic forms dominate and persist at the end of season compared to other populations.

Keywords: Artemia, Competition, Crustacean, Nauplii, Cyst, Salt Lake

**Red mullet *Mullus barbatus* (goatfish) ratings of the diet is Algerian.**

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ABSTRACT

Our study is a contribution to the diet of red mullet *Mullus barbatus* of eastern algerian coasts. A total of 350 individuals in total length between 12.5 and 22.2 cm, was examined. We have calculated the coefficient of vacuity digestive medium and analysed the point of view the qualitative and quantitative content digestive. Prey was then classified using the MFI and IRI, both indices food incorporates three main food descriptors (frequency, number and weight percentages). Red mullet feeds on a wider range of invertebrate prey, including small decapods macroura. They are considered as principal prey according to the main power (MFI). Other prey (molluscs, worms, echinoids, nematodes, fish, plants) are only incidentally ingested.

Keywords: Mullidae, Diet, *Mullus barbatus*, Mediterranean sea, Algeria.

**Physico-chemical characterization of waters of Lake Tonga (easternmost Algerian)**

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ABSTRACT

Our work is carried out on the navigable part of Tonga lake with an area of 2.56 km2 representing 12.8% of the total area of the lake (20 km2). The rest is covered by a bulky vegetation, with large open water beaches partially occupied by the white water lily. The latter is located at the extreme NE Algeria (36 ° 53'N - 08 ° 31'E), at an altitude of about 10 m. The purpose of our study focuses on the physico-chemical characterization of the water during a measurement campaign, business between 6 and 12 April 2011. From point measurements, we deduce the spatial distribution of physico-chemical parameters that show the Tonga lake is shallow. Its waters are clear, moderately mineralized and low dissolved oxygen. This gives the lake Tonga poor quality.

Keywords: Lake, Tonga, physico-chemical parameters.

**Gerbez-Sanhadja Wetland: Degradation, impact and solution**

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ABSTRACT

For over 20 years, Algeria applies to the value of its wetlands, starting with the ratification of the Ramsar Convention in 1984. Since then, it has ranked in turn the majority of lakes that form the wetland complex of El Kala National Park followed thereafter by sabkhates and the southern oases.
Wetlands show great heritage threatened by several lusts and Algeria, they have been a bid to excessive holdings of agriculture on the one hand and raising the other hand far any "wise use" as proclaimed by the Ramsar Convention.
Wetlands are recognized as major ecosystems in terms of biodiversity with a significant functional role, they have continually been subject to changes and improvements related to the development of human activities. Therefore, a systematic regression makes it urgent to study the impact of rural activities in order to make appropriate conservation management.
According to DGF - Guerbez Sanhadja (Region East Wilaya de Skikda) on the list of the Convention. Consists of coastal flood plains, with an area of 42,100 ha of freshwater and brackish water lakes and marshes.
We conducted a more objective assessment possible of the different activities they are agricultural, pastoral or looting especially practiced in this region and sand have assessed harm the ecological balance by assessing measurable scientific parameters to assess the impact on these areas and finally to be able to make proposals and solutions capable of stopping the degradation of these areas in the short, medium and longer term.

Keywords: wetlands, Guerbez, Sanhadja, ecosystem degradation.

**Common carp *Cyprinus carpio* (Linnaeus, 1758) ideal candidate for stocking reservoirs, case Merdjet Sidi Abbed (Relizane, Algeria).**

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ABSTRACT

Multiple actions restocking lakes and dams in Algeria were recorded (86) in the framework of the national program for the introduction of alien species. *Cyprinus carpio* is an economically interesting freshwater species. This paper describes some aspects of his life, namely it's behavior, food, fishing gear and provides data on the prolific power of the species to choose the ideal candidate.

The fecundity of common carp *Cyprinus carpio* (Linnaeus, 1758) was assessed by the volumetric method and was estimated between 25,750 and 95,250 eggs per female (mean: 48250 ± 3478). The relationship between the total fecundity rate (F), the total length (Lt) and total weight (Wt) were established using the multiple regression model and a significant correlation was found (ANOVA: P <0.001): Log F = 14.76 Log Lt - 19.346 (r2 = 0.9273) Log F = 7.25 Log Wt - 16.552 (r2 = 0.9288).

Keywords: common carp, *Cyprinus carpio*, Fecundity, Merdjet Sidi-Abed Dam, western Algeria.

**Contribution to the comparative study of the phytoplankton community between aquatic freshwater (Lake Tonga) and brackish water (El Mellah lagoon) at PNEK (W. El Tarf)**

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ABSTRACT

The complex of wetlands El Kala considered unique in its kind in the Mediterranean, its main component consists of lakes, marshes and bogs. The various bodies of water in complex experience a number of changes and degradation in quality, the main impact results in eutrophication, leading to phytoplankton blooms. Comparative studies between freshwater and brackish on algal biodiversity and density of phytoplankton different genres conducted on lakes Tonga, El Mellah lagoon and the results show that Lake Tonga has highest biodiversity and El Mellah lagoon has highest densities. A variation of the ecological distribution of the various classes of phytoplankton was found with predominance of Diatomophyceae at both environments

Keywords: Lake Tonga, El Mellah Lagoon, Phytoplankton, physico-chemical parameters.

**Study of physicochemical functioning of a lake ecosystem: Dam Cheffia, wilaya of El Tarf**

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ABSTRACT

Cheffia's dam is located 50 kilometers south-east of the city of Annaba, near the town of El Tarf. These waters are used for drinking water supply in the cities of Annaba Bouhadjar, industrial water supply in El-Hajar, and irrigation perimeter Bou Namoussa. Our goal is to study the operation of the dam by monitoring changes in physicochemical parameters in time and space. The results of the physicochemical analysis allowed us to conclude that the dam waters are well oxygenated, saving important values of the redox potential, low salinity, decreased concentrations of ortho phosphates. Chlorides are evaluated good. Statistical tests have helped us to monitor the functioning of these physicochemical parameters.

Keywords: Cheffia dam, physicochemistry, hydrology, functioning.

# Liste des Posters :

## Ecologie des vecteurs

**Use parasites as biological tags for discriminating stock of *Trachurus trachurus* (Pisces, Teleositei)**

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ABSTRACT

*Trachurus trachurus* is a small pelagic fish with a great commercial importance in Tunisia, Discriminating stocks is essential for a sustainable management. Using parasites as biological tags for stocks discrimination were most appropriate for studies of fishes and less expensive. A total of 364 T. trachurus were collected from 4 fishing localities in Tunisian coasts: Bizerte, Kelibia, Mahdia and Zarzis. A total of 2160 parasites belonging to 10 species were founded. These included: 3 Monogenea Pseudaxine trachuri, Cemocotyle trachuri, *Gastrocotyle trachuri*, 5 Digenea *Lecithocladium excisumn*, *Ectenurus lepidus, Monascus filifomis, Prodistomum polonii* and *Tergestia laticollis,* larvas of Tetraphyllidea and *Nematoda Anisakidae*. Prevalence and mean abundance were determined for each parasite and compared between localities. Discriminant analysis was used for separation of *T. trachurus* specimens from prospected regions. Results showed that 3 parasites were absent in Zarzis. No significant difference of infection parameters between Kelibia and Mahdia. Bizerte has a significantly difference of prevalence and mean abundance of 6 parasites. Discriminant analysis separed fishes from 4 localities in 3 stocks: one at Bizerte, one regrouped specimens of Kelibia and Mahdia and one at Zarzis.

**The gills parasites of *Tilapia nilotica* (Téléostéen-Cichlidae) in Ouargla (South East of Algéria)**

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ABSTRACT

This preliminary work is to identify and assess parasitism in farmed fish and economic interest in the region of Ouargla. The observation of morpho-anatomical characters of parasites collected from the gills of Tilapia nilotica has allowed us to identify specimens of the genus Cichlidogyrus Paperna, 1960 (*Monogenea*, *Ancyrocephalidae*) and subclass copepodea. The results of the study of parasitic evidence that the infestation rate and the highest parasite loads are recorded by crustaceans.

Keywords: *Tilapia nilotica*, gill parasites, Ouargla, Indices parasitic