IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 10 November 2017

Please note: this is an archived Conservation Outlook Assessment for The Ahwar of Southern Iraq: Refuge of Biodiversity and the Relict Landscape of the Mesopotamian Cities. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

The Ahwar of Southern Iraq: Refuge of Biodiversity and the Relict Landscape of the Mesopotamian Cities

SITE INFORMATION

Country:
Iraq
Inscribed in: 2016
Criteria:
(iii) (v) (ix) (x)

Site description:

The Ahwar is made up of seven components: three archaeological sites and four wetland marsh areas in southern Iraq. The archaeological cities of Uruk and Ur and the Tell Eridu archaeological site form part of the remains of the Sumerian cities and settlements that developed in southern Mesopotamia between the 4th and the 3rd millennium BCE in the marshy delta of the Tigris and Euphrates rivers. The Ahwar of Southern Iraq – also known as the Iraqi Marshlands – are unique, as one of the world’s largest inland delta systems, in an extremely hot and arid environment. © UNESCO

SUMMARY

2017 Conservation Outlook

Significant concern

Until the time of preparing the current assessment, the legal framework of the Ahwar is not sufficient as three out of four components are still not designated as protected areas. Conflicting interests are leading to a lack of clarity as to which national authority is responsible for the management of the property. In addition, there is a lack of funding for conservation, with government investment focusing rather on the development of surrounding oil fields. This has a direct impact on the availability of water, which is furthermore deteriorating due to other upstream water uses (residential, agricultural, industrial), including outside Iraq. There is a significant concern that the minimum water requirements of the Marshes are not fulfilled, and that there is an increasing release of polluted drainage water (that contains fertilizers, chemicals, and heavy metal concentrations) into the southern parts of the Marshes.

Current state and trend of VALUES

High Concern
Trend: Deteriorating

The current state of the property’s values has dramatically deteriorated from their status when the most recent field surveys were conducted in the marshes during the period 2005-2010. The habitats of threatened species in the marshes are under pressure in many locations; also, the species themselves are facing pressures from hunting and disturbance due to the shrinkage of waterbodies and the degradation of water quality as a result of increasing concentrations of chemicals and other factors. For instance, observations of Marbled Teal (VU) in the Central Marshes (Baghdadiya site) have decreased from 18,000 during the aforementioned field survey to only 50 in 2017. The situation of the threatened Basra Reed Warbler (with a restricted breeding range) is similarly concerning. Due to the absence of an active management system and a lack of law enforcement, as well as increasing investment in oil and the continuous lack of

fresh water, the state and trend of the property's values and integrity are of significant concern, and will continue to deteriorate, unless urgent conservation measures are taken.

Overall THREATS

High Threat

The natural values are facing many threats and challenges of which some are serious. The threats might be categorized in two groups: 1) the controllable threats and factors which may be mitigated through adequate planning and implementation of conservation actions by different stakeholders under the guidance of one national authority; 2) threats and factors that are beyond the control of management authorities, such as the shortage of water, which is caused both by factors outside Iraq, and internal factors, such as the consumption of water for the purposes of extracting crude oil. Iraq is continuously planning to raise the production of the oil (currently already at over 100 million barrels per month), which will lead to an increasing consumption of already dwindling water resources in the Marshes.

Overall PROTECTION and MANAGEMENT

Serious Concern

Until now, aside from the Central Marshes component, none of the other three components have any legal protection at the national level. The partners and stakeholders working on the conservation of the Marshes lack the capacities that are required for managing the natural components technically, financially, and institutionally. All of the key stakeholders have expressed their interest to lead the process, and there are attempts to mitigate the threats on the ground, but due to a lack of involvement from national level authorities in the management of the natural components, management effectiveness is of significant concern, further exacerbated by a lack of funding.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Breeding and migratory waterfowl and other birds**
Criterion:(x)

The four natural components include a list of waterfowl species that benefit from water bodies and extensive reed beds as an environment that provides them with food and shelter. The natural components of the World Heritage Site include breeding and wintering species of waterfowl as well as quite large numbers of other water birds such as heron, flamingo, cormorant and others, which are breeding in large colonies. Some of these species are threatened according to the IUCN Red List of Threatened Species, such as Basra Reed-warbler, Marbled Teal, and the White-headed Duck. In addition, there are a number of restricted-range bird species, such as Grey Hypocolius, Iraq Babbler and Black Francolin (Salim, 2004; Salim, 2005; Abdulhasan and Salim, 2008; Salim, 2008; Iraqi Ministry of Environment and Iraqi Ministry of Tourism and Culture, 2014; Ministry of Environment and Nature, 2017).

▶ **Aquatic plant species**
Criterion:(x)

The marshlands include various species of aquatic plants of environmental or economic importance, and some of these species have a limited distributions or are threatened due to reduced availability of suitable environments (Salim, 2004; Salim, 2005; Abdulhasan and Salim, 2008; Salim, 2008; Iraqi Ministry of Environment and Iraqi Ministry of Tourism and Culture, 2014;

Ministry of Environment and Nature, 2017).

► Aquatic and water-related threatened and restricted-range mammals and reptiles

Criterion:(x)

The Marshlands include few mammal and reptile species, but some of them are of great environmental importance because they have a limited global distribution or are threatened. Of these species observed in the area is the Smooth-coated Otter (subspecies maxwelli), Bunn's Bandicoot Rat, and the Euphrates Soft-shelled Turtle (Salim, 2004; Salim, 2005; Abdulhasan and Salim, 2008; Salim, 2008; Iraqi Ministry of Environment and Iraqi Ministry of Tourism and Culture, 2014; Ministry of Environment and Nature, 2017).

► Large-scale wetland in a hyper-arid environment

Criterion:(ix)

The Ahwar of southern Iraq may be one the largest-scale wetland ecosystem that is located in the most arid environment globally. The grand mosaic of the four components of the property is an exceptional example of ongoing ecological processes which reflect this extreme and harsh environment, particularly regarding almost complete dependence on riverine influx and negligible direct contribution of precipitation on-site to the water budget, very high water temperatures around or in excess of 30°C in summer with no thermal stratification of the water column, high irradiation which leads to very high primary production, high dissolved oxygen concentrations throughout the water column and high overall ecosystem productivity (UNESCO, 2016).

► Examples of bird and fish migration processes

Criterion:(ix)

The bird migration and the migration of fish and shrimp species which occur within the property's habitats reflect an adaptation process by these animals to long-term seasonal fluctuations in water levels and other ecological variables (World Heritage Committee, 2016).

► Local and restricted-range fish fauna

Criterion:(x)

The four natural components include a significant list of species of fish of scientific, conservation and economic importance because they are species of limited distribution or are declining in other parts of the country and have lived in the marshes as a last refuge. Among these important species are carp spp (Abdulhasan and Salim, 2008; Abd et al., 2009; Iraqi Ministry of Environment and Iraqi Ministry of Tourism and Culture, 2014; Ministry of Environment and Nature, 2017).

Assessment information

Threats

Current Threats

High Threat

The natural values are facing many threats and challenges of which some are serious. The threats might be categorized in two groups: 1) the controllable threats and factors which may be mitigated through adequate planning and implementation of conservation actions by different stakeholders under the guidance of one national authority; 2) threats and factors that are beyond the control of management authorities, such as the shortage of water, which is caused both by factors outside Iraq, and internal factors, such as the consumption of water for the purposes of extracting crude oil. Iraq is continuously planning to raise the production of the oil (currently already at over 100 million barrels per month), which will lead to an increasing consumption of already dwindling water resources in the Marshes.

► Fishing / Harvesting Aquatic Resources

Very High Threat
Inside site, throughout(>50%)

Continuous fishing using chemicals and toxins, as well as electric shock fishing, is dangerous for fish and other aquatic fauna, in addition to overfishing and illegal poaching of ducks and other water birds (such as

flamingos) because of the lack of enforcement of relevant laws. Extensive and unregulated reed harvesting is also a major problem that destroys environments for threatened species (http://www.nasiriyah.org/ara/post/7506).

► Dams/ Water Management or Use

Very High Threat
Inside site, extent of threat not known
Outside site

The construction of dams on the upstream of rivers that feed the Ahwar outside and inside Iraq is causing serious water shortages in the marshes. The oil industry near the marshes is one of the main water users. The extraction of one barrel of oil requires at least one and a half barrels of water to be injected into the land. This quota is currently taken from the waters of the marshes. The oil fields produce about 100 million barrels per month (excluding the oil fields of Maysan and Dhi Qar). The long ‘security’ dam established by Iran, adjacent to the Hawr al-Hawizah component also has serious negative impacts on the cutting of vital natural corridors that extend across the two countries, leading to further reductions of water inflow into the Al-Hawizah component. (Azhar et al., 2012; Stevens and Ahmed, 2011).

► Invasive Non-Native/ Alien Species

Data Deficient
Inside site, extent of threat not known
Outside site

Invasive and alien species are present in the marshes (especially fish spp), and some of them have a significant impact on native species and environments; however, detailed information is not available.

► Water Pollution, Solid Waste

High Threat
Inside site, extent of threat not known
Outside site

The Ahwar suffers from problems of liquid pollution and solid waste, as well as supplying the western Hammar component with water polluted with high concentrations of chemical and heavy metals. In addition to the direct dumping of solid and liquid wastes into rivers feeding the Marshlands and

into the Marshlands themselves, water scarcity causes the surface and volume of the Marshlands to shrink, increasing concentrations of pollutants and affecting the production of basic nutrients in those environments (Richardson et al., 2005; Al-Saad et al., 2010; Mashkhool, 2012; Al Kazwini et al., 2013; Fawziz and Mahdi, 2014; AlMaarofi, 2015; Marghany et al., 2016; Al-Gburi et al., 2017).

► Droughts, Temperature extremes

High Threat
Inside site, throughout(>50%)
Outside site

Droughts and extreme heat cause severe shortages and shrinking of water bodies, as well as continued population pressure on natural resources.

► Housing/ Urban Areas

High Threat
Inside site
Outside site

The Ministry of Water Resources has set up several artificial soil-islands for the purpose of resettling the population inside the marshes in areas that have not been inhabited by the population since the 1970s when the area of the water bodies was more than twice larger than now. This caused destruction of the ecosystem in large areas of natural components. The Ministry is still continuing these projects despite the questions raised around these projects that harmed to the environment and natural values. In addition to the habitat destruction, these unstudied artificial platforms have contributed to expansion of settlements in remote areas that are the last refugees of the shy birds and animals that went in the depths away from disturbance (Various media sources).

► Livestock Farming / Grazing, Marine/ Freshwater Aquaculture

Very High Threat
Inside site
Outside site

Unregulated grazing in some areas and in other areas by buffalo shepherds as well as grazing sheep on the margins of the marshes. The Ministry of

Agriculture has also released millions of small fish in the marshes, including exotic and none-indigenous fish species, which affect endemic fish.

► Shipping Lanes

High Threat
Inside site, scattered(5-15%)

The movements of small and motor-boats everywhere in the marshes is a serious and influential issue on the ecosystem. In addition to being a cause of disturbance, it is a serious factor in the impacts of water turbidity and ecosystem change in the marshes.

Potential Threats

Very High Threat

Political instability within Iraq might contribute to redrawing the political map of Iraq, which could have repercussions for the marshes as use of water resource upstream of the marshes changes. This might lead to severe degradation if not disappearance of the marshes. Externally, political instability and competing uses of water resources in neighbouring countries further exacerbate this threat.

► War, Civil Unrest/ Military Exercises

Very High Threat
Inside site, extent of threat not known
Outside site

Political instability within Iraq might contribute to redrawing the political map of Iraq, which could have repercussions for the marshes as use of water resource upstream of the marshes changes. This might lead to severe degradation if not disappearance of the marshes. Externally, political instability and competing uses of water resources in neighbouring countries further exacerbate this threat.

► Oil/ Gas exploration/development

Very High Threat

, extent of threat not known
Outside site

At the time of inscription it was noted that the buffer zones of several of the components could be subject to oil extraction activities (IUCN, 2016). The intention of the Ministry of Oil to expand oil exploitation of the Majnoon oil field into the Hawr Al-Huweizah component puts at risk areas of major environmental importance.

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

Due to some historical issues, there is a lack of trust between the majority of the local community and the government because of past negative experiences, which makes the implementation of the management plan very difficult if not impossible. Most of the locals think that the persons that attend the workshops and meetings inside and outside Iraq do not necessarily reflect the actual relationship of the population with the management of the property. (IUCN Consultation, 2017).

► Legal framework

Serious Concern

At the time of inscription, the World Heritage Committee requested the State Party to “complete the designation of all of the components of the property as legally protected areas, and ensure effective legal protection to regulate oil and gas concessions” (UNESCO, 2016). Except the Central Marshes component, the Ministry of Environment is still seeking the approval of the Council of Ministers on the designation of the remaining three natural components as natural parks.

► Enforcement

Some Concern

Given the political and security situation in Iraq in general, as well as the power of the tribal side in the region in particular, the imposition of law and its application in the region is a very difficult issue. Law enforcement (at all levels) faces great challenges and requires considerable work with the local community (IUCN Consultation, 2017).

► Integration into regional and national planning systems

Serious Concern

In view of the over-use of water resources both upstream from the marshes and at the marshes themselves, it is clear that the property is not adequately integrated in regional and national planning systems.

► Management system

Some Concern

In its evaluation of the nomination IUCN noted that there seemed to be a lack of clarity of overall responsibility in terms of the management of this mixed site and little current activity at site level. (IUCN, 2016). As far as the natural components of the property are concerned, so far no effective and unified management system has been adopted. The Ministry of Environment relies heavily on its staff in their directorates to follow up the problems and challenges facing the natural components and also adopt the method of coordination with the local and central bodies related to the natural components. Overall, however, the impact of a clear and comprehensive system and structure has not yet been integrated into addressing the daily management requirements of natural components.

► Management effectiveness

Serious Concern

No management effectiveness evaluation has yet taken place, but given the absence of a management system it is clear that management is not effective.

► Implementation of Committee decisions and recommendations

Some Concern

The Ministry of Environment has prepared a plan followed by several meetings and steps to implement the recommendations and decisions of the World Heritage Committee regarding natural components.
Some of the more straightforward recommendations, such as the installation of signs and others, have been successfully implemented. (Source: Committee Decision 40 COM 8B.16)

► Boundaries

Serious Concern

In its evaluation report, IUCN noted that the proposed components were not sufficiently large to meet integrity criteria and if they were to be enlarged, it would be important to consider boundaries that might better respond to the application of natural criteria (IUCN, 2016). The Ministry of Water Resources recently requested to demarcate the boundaries of the four natural components, due to a lack of clarity of their current delineation.

► Sustainable finance

Serious Concern

Iraq is currently passing through a difficult financial period because of falling oil prices, leaving many administrative problems and underperformance in the fulfillment of Iraq's obligations internally and externally. As a result, despite a large allocation for the management of the Marshlands, no funds were spent for this purpose. (IUCN Consultation, 2017).

► Staff training and development

Serious Concern

The concerned cadres received a lot of training and capacity building programs, but most of them were not focused on protection of the OUV, but rather on the public administration of protected areas. The field management team needs a lot of technical support and focused training to safeguard the Outstanding Universal Value and integrity of the natural components of the marshes, as well as coordinated action among partners (IUCN Consultation, 2017).
The Arab Regional Centre for World Heritage (ARC-WH) has initiated a support program for the Ministry of Environment and other stakeholders,

which includes two training courses (one on threats assessment, and the one on developing reporting skills).

► Sustainable use

Some Concern

There are many violations and competition in the use of natural resources. Despite many communal and governmental efforts to conserve natural resources and promote wise use, weaknesses in law enforcement result in low compliance (IUCN Consultation, 2017). Unsustainable reed gathering and overfishing were noted as being of concern in some parts of the property (IUCN, 2016).

► Education and interpretation programs

Mostly Effective

There were many education and awareness raising campaigns (especially since inscription of the property on the World Heritage List) implemented by various institutions. However, there is a lack of coordination between these institutions. (IUCN Consultation, 2017).

► Tourism and visitation management

Serious Concern

The natural components of the property are targeted by many large groups of tourists for recreational purposes, especially during mild weather. Statistics showed that the numbers of the visitors in spring 2016 were 7,000 in one area during a single day. There are no tourist services or facilities in the area other than those organized by individuals on a very limited scale. There are investment proposals for large tourism projects but their negative environmental impact has not been taken into account as these tourism projects have been given priority by local governments as a key source of income. In addition, there is no commitment to specific routes or avoidance of critical and environmentally important areas within the Ahwar; instead, all marshes are open to visitors. (Various media sources).

► Monitoring

Some Concern

The property (not just its natural components) is subject to a periodic environmental monitoring program by the Ministry of the Environment and other institutions. But the MoEn's program does not focus on the OUV or on the integrity of natural values. This is related to the subject of capacity building mentioned above, as these cadres need specialized training and a monitoring plan that targets values and integrity in the natural components of the property. ARC-WH, as part of the technical support program, is continuing in providing advice in this regard.

► Research

Some Concern

There are no in-depth research programs aimed at the integrity of the natural values of the property. There is also no systematic research in the marshes. Some of the research that does happen has negative impacts, in some cases causing significant disturbance to important animals and birds in the marshes. No research priorities have been set and there is no regulatory system for scientific research in the marshes. (IUCN Consultation, 2017).

Overall assessment of protection and management

Serious Concern

Until now, aside from the Central Marshes component, none of the other three components have any legal protection at the national level. The partners and stakeholders working on the conservation of the Marshes lack the capacities that are required for managing the natural components technically, financially, and institutionally. All of the key stakeholders have expressed their interest to lead the process, and there are attempts to mitigate the threats on the ground, but due to a lack of involvement from national level authorities in the management of the natural components, management effectiveness is of significant concern, further exacerbated by a lack of funding.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

There are significant interests in developing oil fields in the vicinity of nearly

all the natural components of the property. So far these activities have remained limited to areas outside the property, but there does not appear to be an effective or consistent approach to ensuring all companies involved use the best available technologies and practices to avoid damage to the property.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Breeding and migratory waterfowl and other birds**

High Concern
Trend:Deteriorating

Most of bird species of breeding, migratory and threatened ssp suffer from the destruction of their habitat due to increased fishing pressure due to shrinking of the water surface and continuous but intensive poaching by means of extermination, including the use of nets in many locations inside and outside the natural components of the property. Given the scarcity of water and the deterioration of water quality, especially in the summer season (breeding season for birds), these species are looking for alternative areas continuously, including in the marshes on the Iranian side (IUCN Consultation, 2017).

▶ **Aquatic plant species**

Data Deficient
Trend:Data Deficient

This value is suffering seriously form unsustainable reed cutting; however, no or very rare accurate observations were made regarding the status of the plant cover in the Ahwar (IUCN Consultation, 2017).

▶ **Aquatic and water-related threatened and restricted-range mammals and reptiles**

High Concern
Trend:Deteriorating

Mammals and reptiles are exposed to water scarcity, habitat destruction, and other human disturbances, including fishing, and are continuously and increasingly reduced due to the decreasing availability of water (IUCN Consultation, 2017).

▶ Large-scale wetland in a hyper-arid environment

High Concern
Trend:Deteriorating

In view of the changing hydraulic situation in Iraq and the scarcity of water imports from outside Iraq, the pressure of fresh water discharged into the sea by estuaries decreased in the Arabian Gulf, increasing the pressure of the Gulf marine waters and the rise of the salinity northward to environmentally hazardous levels and recording marine species in places where they were not previously present. In addition, the salinity of the Marshlands has increased because of water scarcity, high evaporation rates and increased concentrations of chemicals and heavy metals. The occurrence of these factors within a short time period (a decade) is now causing a clear environmental change in the marshes and tidal areas.

▶ Examples of bird and fish migration processes

High Concern
Trend:Deteriorating

The scarcity of water and the deterioration of water quality, in addition to the weak application of the law and the increasing pressure from overfishing, threaten the continued importance of the property as a stop-over for migratory birds.

▶ Local and restricted-range fish fauna

Critical
Trend:Deteriorating

Local fish species suffer from water scarcity and overfishing, as well as the presence of invasive alien species Tilapea zillii.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

High Concern

Trend: Deteriorating

The current state of the property's values has dramatically deteriorated from their status when the most recent field surveys were conducted in the marshes during the period 2005-2010. The habitats of threatened species in the marshes are under pressure in many locations; also, the species themselves are facing pressures from hunting and disturbance due to the shrinkage of waterbodies and the degradation of water quality as a result of increasing concentrations of chemicals and other factors. For instance, observations of Marbled Teal (VU) in the Central Marshes (Baghdadiya site) have decreased from 18,000 during the aforementioned field survey to only 50 in 2017. The situation of the threatened Basra Reed Warbler (with a restricted breeding range) is similarly concerning.
Due to the absence of an active management system and a lack of law enforcement, as well as increasing investment in oil and the continuous lack of fresh water, the state and trend of the property's values and integrity are of significant concern, and will continue to deteriorate, unless urgent conservation measures are taken.

Additional information

Benefits

Understanding Benefits

► Legal subsistence hunting of wild game, Collection of wild plants and mushrooms, Fishing areas and conservation of fish stocks

The natural components of the World Heritage property provide the residents and visitors with a good range of food, directly from fish and wild birds, and indirectly, the Ahwar provide food for their livestock and other domesticated animals.

As regards the alien and invasive species, the species (Tilapea zillii) is considered as ecologically invasive, but still provides source of food.

- **Access to drinking water, Commercial wells**

The marshes are fresh water bodies, so water is the most essential element for the integrity of all components and values of the World Heritage property. It also provides a suitable environment for raising buffalo which is the main livestock of the local community.

- **Cultural identity and sense of belonging, History and tradition, Wilderness and iconic features**

The Ahwar have considerable cultural and spiritual values, and feature in the Epic of Gilgamesh.

- **Outdoor recreation and tourism, Natural beauty and scenery**

Many places within the natural components are very beautiful and can be very good places for health, refreshment and recreation.

- **Carbon sequestration, Soil stabilisation, Flood prevention, Water provision (importance for water quantity and quality)**

The Ahwar provide wide range of environmental services for local communities, in particular the provision of water and food.

- **Collection of timber, e.g. fuelwood**

The Ahwar provide building material for the Marsh Arabs, who traditionally build their homes with reeds.

- **Contribution to local economy, Tourism-related income**

The Ahwar contribute significantly to the local economy.

Summary of benefits

Environmental benefits and ecosystem services have declined significantly

over the past decade due to a number of reasons, the most important of which is water scarcity, a persistent and growing factor over the years. The shrinking of the Ahwar and the low levels of water as well as increasing pressure from unsustainable resource use, the increasing access to remote places within the marshes due to motor-boats, and the change in fishing methods (including the use of electric shocks, which has largely replaced traditional methods (net and spear fishing)) in the marshes have led to a significant quantitative and qualitative decline in the productivity of the marshes.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Data deficient	From: 2017 To: 2017	Data deficient

REFERENCES

№	References
1	Abdulhasan, N. A. and M. A. Salim (2008). Key biodiversity survey of southern Iraq: site review winter & summer 2008 survey. Slimani, Iraq, Nature Iraq.
2	Georg, P. V. and Vielliard, J. (1970) Midwinter observations on birds of central and south Iraq. Bull. Iraq nat. Hist. Mus.: 61-85. 27/ME/IQ.G.
3	Iraqi Ministry of Environment and Iraqi Ministry of Tourism and Culture (2014) The Ahwar of Southern Iraq: Refuge of Biodiversity and the Relict Landscape of the Mesopotamian Cities. Nomination file. http://whc.unesco.org/en/list/1481
4	Iraqi Ministry of Wat er Resources (2006). New Eden Master Plan for Integrated Resources Management in the Marshes Area.
5	Ministry of Environment and Nature Iraq)2017(. Key Biodiversity Areas in Iraq. Iraq.
6	Salim. MA. 2004. Field Observation on Birds in Abu-Zarag and Kirmashiyah Wetlands 30, Jun – Nov. 04, Southern Iraq. Unpublished series of reports. Iraq Foundation.
7	Salim. MA. 2005. Birds - Key elements of a biodiversity survey in the marshes of Iraq. Paper presented at the 9th annual meeting of the Ecological Society of America, special session 9: Restoration of Mesopotamian Marshes of Iraq; 9 August 2005, Montreal, Canada.
8	Salim. MA. 2008. Otters in Iraq, OTTER NEWS, the Journal of the International Otter Survival Fund. (OSF), NO 49, Spring, 2008.