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[Research]



## The mammals of Anzali Wetland in the Southern Caspian Sea

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### ABSTRACT

Anzali Wetland as a listed habitat in Montreux Record, was investigated for the mammal fauna during Jan. 2015 - Jan. 2016. About 165 km of water bodies and 200 km around Anzali Wetland were patrolled, respectively. By applying different methods, such as direct observation, different signs recording, using different sampling traps, nets and camera traps, twenty mammal species were identified from 5 orders and 13 families. While Wild boar, Golden Jackal and Common otter were widely distributed, Common badger, Asiatic wildcat and Jungle cat were observed in some parts of this wetland. Six rodent species were recognized in different parts of the wetland. Among four identified bat species, *Nathusius's* pipistrelle has been reported only from this region in Iran. The most commonly recorded bat species was the Soprano pipistrelle, a species hereto recorded only from two Iranian localities. Two recognized species from order Eulipotyphla; Caspian shrew and a mysterious mole are important due to their narrow geographical distribution range as well as their taxonomic situation. Although there was no quantitative or qualitative data from the past, our results show that the situation of many mammal species are not suitable, and some of them are being increasingly threatened.

**Key words:** Anzali Wetland, Distribution, Mammals check-list, Iran.

### INTRODUCTION

One percent of global wetlands is located in Iran. The characteristics of Anzali Wetland with about 19095 ha area, located in 36° 55' to 37° 32' N and 48° 45' and 49° 42' E are as follow: -23 m altitude from open seas, 2.75 m maximum depth, 70 km<sup>2</sup> water body areas, distributed in north-west to south-east vector (Kimbal & Kimbal 1974). The most important entering rivers to this wetland are: Chafroud, Bahambar, Morghak, Masal, Palangvar, Masolehrodkhan, Pasikhan, Siahdarvishan, Lakanroud and Siahroud (NGO-IRAN 2003).

This important natural ecosystem acts as an ecotone, between different ecosystems: terrestrial, the Caspian Sea, brackish and fresh

water environments, containing composition of different biota. Anzali Wetland, with many different ecologic, economic, aesthetics, anthropologic values is one of the first recorded wetlands in Ramsar convention on 1975 (Ramsar Convention Bureau 2014).

Unfortunately, during last decades, this wetland confront with many problems and negative factors (Sabetraftar 1999; Jica *et al.* 2005; Mirzajani *et al.* 2010), and was listed in Montreux record as a priority site for conservation measures in 1993 (Ramsar Convention Site). Based on the conservation strategies, some parts of this wetland were considered as protected areas: (Siakeshim protected area: 4500 ha), and three wildlife

refuges (Sorkhankol: 1214 ha, Chokam: 449 ha, and Selkeh: 360 ha) under DOE conservation management (DOE of Guilan Information).

Although many short and comprehensive biological, ecological and management studies were performed on Anzali Wetland, however there is not any comprehensive study on its mammal fauna. There are general statements in some literatures on species of this wetland (Lay 1967, Etemad 1985, Karami *et al.* 2008, Ziaei 2008). According to the first report (Yekom consulting Engineers Corporation 1989), the mammal species of Anzali Wetland were listed in two different categories including distinctive (16) and probable (8) species. It only reported the list of mammals, without field-based data on distribution of different species. However, it was the basic reference for many other studies and reports (Monavari 1991; Behrouzi rad 1997; Riazi 1997; Sabetraftar 1999; Mirzajani *et al.* 2010).

According to Japan International Cooperation Agency (JICA) studies on ecological management of Anzali Wetland, a precise check - list of different fauna and their spatial and temporal distribution seems to be important for achieving the conservation strategies (Jica *et al.* 2005). So, the present study has been conducted as a first field and laboratory research on mammals of entire Anzali Wetland.

## MATERIALS AND METHODS

Based on a mapping system, different parts of Anzali Wetland were seasonally patrolled from January 2015 to January 2016. In total, about 200 km around the wetland was surveyed by car for finding different signs of mammal species including feces, footprints, den holes as well as soil and plant displacement and scars. The accessibility of the wetland changes in different seasons as it was restricted in spring and summer due to decrease in water level, progressive vegetation growth and because of cultivation activities. Moreover, four different water bodies of Anzali wetland including Siakeshim protected area, western, central and southern parts, as well as the eastern and

Sheijan were searched for fauna using a motorboat. Totally, about 165 km over 250 points were surveyed for any evidence to show the presence of mammal species (Fig. 1). Furthermore, 10 digital scouting camera traps were used.

For rodent species, two kinds of traps (40 live and 25 mouth traps) were installed in different parts of the wetland, where the rodent signs such as footprints, feces and also den holes were observed. All of the captured specimens were transported to Shahid Beheshti University biosystematic laboratory, thereafter, their body and skull morphometric characteristics were measured and using available references and key identifications recognized.

For bat species, some kinds of local mist nets with mesh size of 10-15 mm were installed and checked in evening and night, from May to September 2015. All collected samples were transported to Wildlife Laboratory in University of Guilan and then Berlin Museum Biosystematics Laboratory and the species were identified using morphometric measurements and also genetic examinations.

As an additional work, to completion of obtained data on mammal fauna distribution, the local people were interviewed by showing some color pictures from A Field Guide to Mammals of Iran (Ziaei 2008) and presenting their morphological description.

## RESULTS AND DISCUSSION

In total, 20 species from 5 orders and 13 families of mammals have been recognized. These species belong to Orders Eulipotyphla (3 species), Chiroptera (4 species), Rodentia (6 species), Carnivora (6 species) and Artiodactyla (1 species) (Figs. 2A, B, C, D, E and F). The obtained data for each species are separately described according to the modern taxonomic classification keys presented in "Mammal Species of the World" (Wilson & Reeder 2005).

### 1) Order Eulipotyphla

#### 1.1) Family Erinaceidae

##### 1.1.1) Southern white-breasted Hedgehog, *Erinaceus concolor* (Martin, 1838)

There are two morphotypes based on cranial variability for this species and the Asiatic samples are concolor morphotype, revised from the west of Iran (Kryštufek 2002).

Because of its nocturnal activities only two samples were observed from the western part and also central region of Anzali Wetland (Fig. 2A). According to local people, it exists in different parts of the wetland, but its population has declined remarkably over the last years.

### 1.2) Family Soricidae

#### 1.2.1) Caspian Shrew, *Crocidura caspica* (Thomas 1907)

Its type locality is Iran, southern coast of the Caspian Sea. During the present survey, the only dead sample of this small totally chocolate-brown shrew was found in the central part of Anzali Wetland (Fig. 2A).

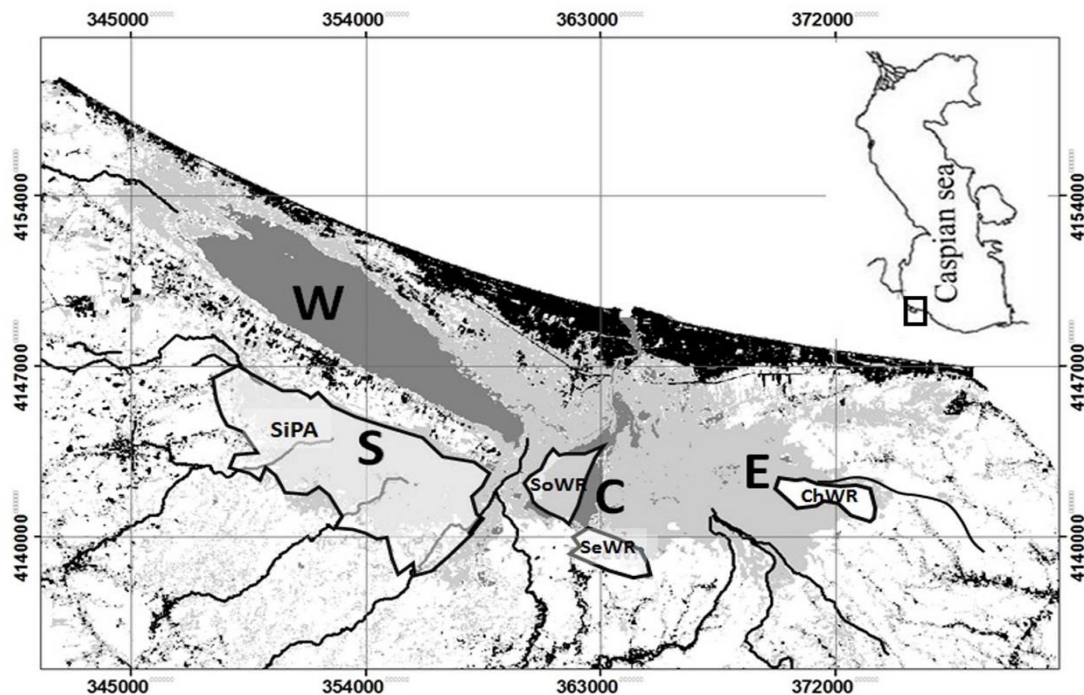
Based on the last molecular studies, it is known as a distinctive species, *Crocidura caspica* (Bannikova et al. 2006).

It has been recorded as an endemic species of south-west coast of the Caspian Sea in Iran and Azerbaijan. Very little information is available on its distribution, population size and trends, and potential threats (Hutterer 2005; Bannikova et al. 2006; Ziaei 2008; Kennerley 2016).

### 1.3) Family Talpidae

#### 1.3.1) Mole (*Talpa* sp.)

According to different studies, three mole species were recently identified in Iran: *Talpa levantis* Thomas 1906 (Kryštufek 2001), *T. davidiana* Milne-Edwards, 1884 (Kryštufek et al. 2001; Sözen et al. 2012), and *T. caucasica* Satunin, 1908 (Kryštufek & Benda 2002). The recent phylogenetic study on genus *Talpa* (Bannikova et al. 2015) showed that the moles which distributed along the south-western banks of the Caspian Sea from southern part of Azerbaijan to the Central Elburz Mountains in Iran, actually belong to *T. talyschensis* and not to *T. caucasica* or *T. levantis*, as previously proposed.



**Fig 1.** Field survey in different parts of Anzali Wetland for mammal species (Black: human settlements; Dark grey: water body; Light grey: around of wetland. Different parts of the wetland: S = Siahkeshim, E = Eastern or Sheijan, C = Central, W = Western areas for conservation programs: SiPA = Siakeshim protected area, SoWR = Sorkhankol wildlife refuge, SeWR = Selkeh wildlife refuge, ChWR = Chokam wildlife refuge).

The single found mole in western region of Anzali Wetland (Fig. 2A) has the dental formula and appearance very similar to *T. davidiana*, however, based on mitochondrial cytochrome *b* gene sequencing and phylogenetic tree analysis in the present study, it has been recognized as a different species. It places in a clade near, but discrete to *T. davidiana* and also *T. talyschensis*. Thus, more samples are indispensable for achieving a clear and detailed knowledge about this found individual.

## 2) Order Chiroptera

All bat samples were captured at the end of spring until mid-autumn. Based on morphologic and genetic studies, in total, four species were recognized. The most frequent recognized species from different regions of Anzali Wetland were from family Vespertilionidae.

### 2.1) Family Rhinolophidae

#### 2.1.1) Lesser Horseshoe bat, *Rhinolophus hipposideros* (Borhausen, 1797)

This species had been previously reported from other regions including north-west (Lay 1967) and west part of Iran (DeBlase 1980). In our study, this species was only sampled in Khomam region in the eastern part of Anzali Wetland (Fig. 2B), near human community. It is generally common in both towns and cities; in parks, forests, outside of buildings, limestone mines, cracks in walls, and cellars (Ziaei 2008; Benda *et al.* 2012).

### 2.2) Family Vespertilionidae

#### 2.2.1) Kuhl's Pipistrelle, *Pipistrellus kuhlii* (Kuhl, 1817)

There are numerous reported sites of it throughout Iran. However, its distribution in north of Iran is rather scarce (Lay 1967; DeBlase 1980; Karami *et al.* 2008).

An individual of this species was captured in Sorkhankol, central region of Anzali Wetland (Fig. 2B).

#### 2.2.2) Nathusius's Pipistrelle, *Pipistrellus nathusii* (Keyserling and Blasius, 1839)

This species was captured from Sorkhankol, the central region of Anzali Wetland (Fig. 2B). Nathusius's Pipistrelle distributes in eastern, central and southern Europe, common along the Baltic Sea, southern Scandinavia and northern Germany. It also inhabits the Balkans and on Corsica. It migrates to Sardinia and Sicily and Iberia (Dietz & Von Helversen 2004; Dietz 2005). Although its presence in Iran has been suspected before (Benda *et al.* 2012), our finding is the first record of this species in Iran (Naderi *et al.* 2017).

#### 2.2.3) Soprano Pipistrelle, *Pipistrellus pygmaeus* (Leach, 1825)

This species was found in all regions around Anzali Wetland, including woodland of river banks and rural houses (Fig. 2B). The first records of this species in Iran reported by Hulva *et al.* (2007) from two sites in Guilan and Golestan Provinces. Benda *et al.* (2012) referred to the same two records and suggested a possible presence of this species along the whole Caspian shore areas, in north of Iran.

## 3) Order Rodentia

In total, 53 rodents from four families and six species were captured by traps.

### 3.1) Family Cericetidae

#### 3.1.1) Eurasian water vole, *Arvicola amphibius* (Linnaeus, 1758)

This species inhabits around the rivers, creeks and wetlands with dense plant covers. It is distributed from Europe to Russia and west Asia (Musser & Carleton 2005; Ziaei 2008; Batsaikhan *et al.* 2016). Its presence in Guilan Province was also reported previously (Lay 1967). It was sampled from southern part of Anzali Wetland, in Kolesar region (Fig. 2C).

### 3.2) Family Muridae

#### 3.2.1) House mouse, *Mus musculus* (Linnaeus, 1758)

Based on molecular studies, several sub-species with worldwide distribution have been introduced for this species. The most accepted sub-species are: *Mus musculus domesticus* (in Western Europe, North Africa and the Middle East), *M. m. musculus* (in Eastern Europe and North of Asia) and *M. m. castaneus* (in South-east Asia) (Boursot et al. 1993; Rajabi Maham et al. 2008). According to Lay (1967), this species has a widespread distribution ranges in Iran. Two different sub-species, *M. m. musculus* and *M. m. domesticus* were found in different regions of Anzali Wetland (Fig. 2C).

### 3.2.2) Brown rat, *Rattus norvegicus* (Berkenhout, 1769)

This species was probably originated from Asia and gradually distributed nearly all over the world. It needs enough water and cannot inhabit dry regions. Thus it is found next to creeks, ponds, wetlands and also human sewages systems (Kryštufek et al. 2001; Ziaei 2008; Akbary Rad et al. 2009; Ruedas 2016). The presence of this species in coastal plains around the Caspian Sea had been reported in different studies (Misonne 1959; Lay 1967; Harrison & Bates 1991; Karami et al. 2008). This rat found in different regions of Anzali Wetland (Fig. 2C).

### 3.2.3) Roof rat, *Rattus rattus* (Linnaeus, 1758)

This rat was distributed passively in the world by human movements (Kryštufek et al. 2016). In Iran, it can be seen in coastal regions of the Caspian Sea, from Astara to Gorgan and also in southern coastal regions, around the Oman Sea and the Persian Gulf, from Chabahar to Abadan (Harrison & Bates 1991; Ziaei 2008; Akbary Rad et al. 2009). This rat is found in some regions of Anzali Wetland (Fig. 2C).

## 3.3) Family Gliridae

### 3.3.1) Fat dormouse, *Glis glis* (Linnaeus, 1766)

This species mainly distributes in the deciduous forests zone in the Western Palearctic, in Europe and Asia (Kryštufek 2010). It occurs in forests along the Caspian coast and on the Elbruz Mountains (Lay 1967; Ziaei 2008). The Iranian subspecies is *G. g. persicus* (Erxleben, 1777), which its type is found in

Guilan Province (Karami et al. 2008). According to local people interviews, *G. glis* had a vast distribution around the Anzali Wetland, especially in areas with natural and fruit forest of walnuts, chestnut and oak, while in the present study it was observed only in the western part of Anzali Wetland (Fig. 2C).

## 3.4) Family Hystricidae

### 3.4.1) Indian crested porcupine, *Hystrix indica* (Kerr, 1792)

This species is found throughout Southwest and Central Asia and some parts of the Middle East (Amori et al. 2016). It was reported from many parts of country including the forested northern slopes of the Elbruz Mts. (Lay 1967) and whole Iranian central plateau (Misonne 1959). Also, Ziaei (2008) reported it from most of the localities in Iran except for Azarbaijan and Kurdistan. Based on few observations in this study (Fig. 2C) and also according to local people data, it seems that the population of this species in Anzali Wetland has been clearly declined over the last decades.

## 4) Order Carnivora

From this Order, five species of three families were recognized.

### 4.1) Family Canidae

#### 4.1.1) Golden Jackal, *Canis aureus* (Linnaeus, 1758)

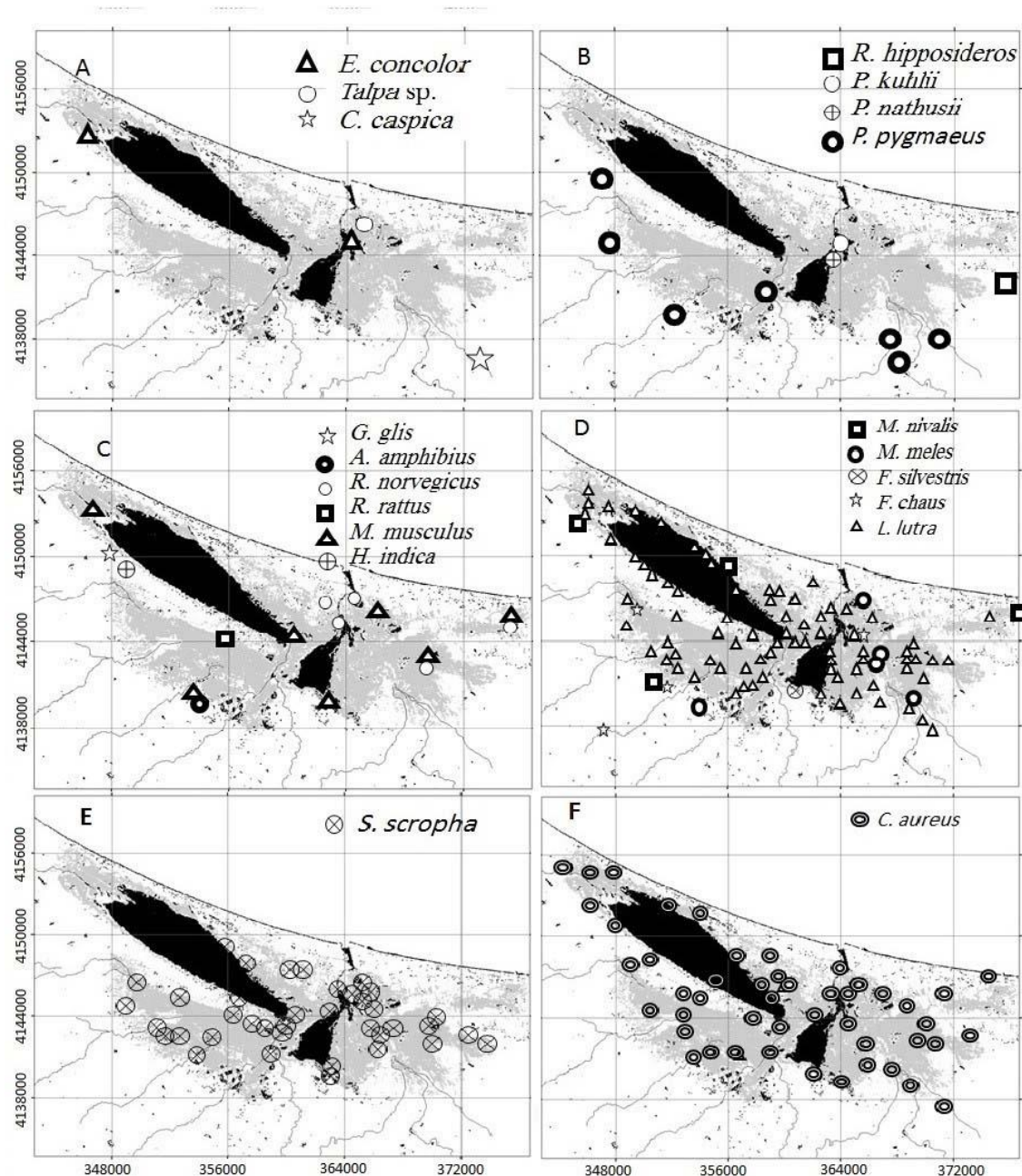
The type locality of golden jackal was from Iran, Lorestan, Benna Mts.

Lay (1967) reported Golden Jackal as a common species along the Caspian coast and the Elbruz Mts. Etemad (1985) and Harrison & Bates (1991) also reported this species from some regions of Iran.

Based on direct observations and its signs: footprints, scats, den holes in different areas of Anzali Wetland, this species is the most frequent mammal. The diverse diet of Golden Jackal caused its vast unique distribution pattern in all seasons (Fig. 2F).

This species has the most car accident kill on rural roads in this region, too.





**Fig.2.** The observed regions of twenty mammal species of Anzali Wetland.

#### 4.2) Family Mustelidae

##### 4.2.1) Least Weasel, *Mustela nivalis* (Linnaeus, 1766)

This species is the smallest member of the Carnivora, native to Eurasia, North America and North Africa, and though it has been introduced to some other regions of the world (Campbell 2014). Its presence in North-west of Iran was reported by different studies (Etemad 1985; Harrison & Bates 1991; Ziaei 2008).

Despite the high abundance of this species, it has been incidentally observed in different parts around Anzali Wetland (Fig. 2D).

It severely attacks on domestic chickens and other avian livestock, the main reason for killing it in rural communities and aviculture sites around Anzali Wetland.

##### 4.2.2) European Badger, *Meles meles* (Linnaeus, 1758)

European badger, *M. meles* has widespread distribution throughout the Palearctic region. The northern boundary of this species range extends to the Russian Arctic Circle and Finland, and the southern boundary occurs along the southeastern coast of China (Wang 2011). Its presence in north-west of Iran reported by different studies (Etemad 1985; Harrison & Bates 1991; Ziaei 2008).

The presence of this species confirmed by different signs in a few regions around Anzali Wetland: direct observation, footprints, scats, den holes and road accident. Its den holes or setts were observed in different habitats including scrub and cultivated woodland, riverine neighborhood, border of grassland as well as near to agricultural areas (Fig. 2D).

While this species inhabits various parts of Anzali Wetland, it encounters many risks through farmers, caused a high decrease in its abundance over the last decades.

#### 4.2.3) Common Otter or European Otter, *Lutra lutra* (Linnaeus, 1758)

This species inhabits most of Eurasia south of the tundra line and North Africa (Kennedy 2003). With different ecological characters, it is one of the most important wildlife in all of its worldwide distribution areas. So that in many ecosystems it is recognized as a keystone species and as a model for wildlife studies (Reuther et al. 2000). Its presence around the most aquatic ecosystems of Iran reported by different studies (Lay 1967; Etemad 1985; Harrison & Bates 1991; Ziaie & Gutleb 1997; Karami et al. 2008; Ziaei 2008). According to different indices such as spraints and smears, footprints, soil scars and slithering signs, it presents in different parts of Anzali Wetland (Fig. 2D). The results showed that its distribution is not uniform in different seasons in all parts of the wetland. While many regions such as shore lines, canals or river banks were used periodically, others including open water body away from the banks and the high edges with weedy vegetation were not selected by this species.

#### 4.3) Family Felidae

##### 4.3.1) Wildcat, *Felis silvestris* (Schreber, 1775)

The taxonomy of the wildcat is still debated because of the genetic differences between the wildcat subspecies and the domestic cat (Belousova 1993).

In Iran, the species occurs in a variety of habitats throughout the country. Of course, its presence in the Caspian region was not clear and in some references the absence of wildcat in this region has been declared (Lay 1967; Ziaei 2008). However, it was reported from north (including the Caspian coast), west and south of Iran by other studies (Etemad 1985; Harrison & Bates 1991). During the present study, some pictures of one of its subspecies, the Asiatic wildcat (*F. s. ornata*) have been taken by the installed camera trap of JICA research team in Selkeh region of Anzali Wetland (Fig. 2D). The recognition of this subspecies was confirmed by IUCN cat-specialists group. This subspecies is smaller than the European wildcat (*F. s. silvestris*) and its fur is more yellow or reddish in color with characteristics such as small black or reddish-brown spots and sometimes stripes on skin. Due to cryptic behavior and hybridization with domestic cats, its status is difficult to assess.

##### 4.3.2) Jungle cat, *Felis chaus* (Schreber, 1777)

This medium-sized cat prefers wetland environments with tall grasses or reeds in which to hide. They are frequent in jungles or Open County, and are often seen in the neighborhood of villages (Fitzgerald 2011).

Lay (1967) reported it from the northern forested slopes of Elborz Mts. Its distribution maps have also been provided by Etemad (1985) and Harrison & Bates (1991). The footprints of this species have been incidentally observed in some regions around Anzali Wetland. The photo of this species has also been taken by the installed camera trap of JICA research team in Sorkhankol region (Fig. 2D). Besides, based on local people explains, the abundance of this species has been declined over the last years.

#### 5) Order Artiodactyla

## 5.1) Family Suidae

### 5.1.1) Wild boar, *Sus scrofa* (Linnaeus, 1758)

Several studies reported the widespread distribution of this species in the most regions of Iran (Lay 1967; Etemad 1985; Harrison & Bates 1991; Karami *et al.* 2008; Ziaei 2008). Different habitats such as marshy swamplands, cultivated woody and natural forests around different parts of Anzali Wetland provide very favorable environment to supply feeding, breeding and sheltering of wild boar. In most regions, its signs e.g. soil displacement, agriculture destruction and footprints were observed (Fig. 2E). The Wild boar home range in Anzali Wetland is less expanded in spring-summer compared with autumn-winter, due to cultivation period and human disturbances. Its population have been gradually isolated from other suitable environments in catchment area particularly the marginal grasslands and natural forests, because of roads development around Anzali Wetland. The negative effects of roads on ecological processes has been proved in several studies (Spellerberg 1998; Underhill 2003).

### CONCLUSION

In the present study, the first precise check - list of mammal fauna has been presented based on one - year field study in one of the most important wetlands of Iran. Because of the lack of previous data, the analysis of species diversity changes could not be possible. Of course, based on interview to old local people, it seems that the abundance of many species have been declined, remarkably.

Although, the changes of species abundances in this region affected by the worldwide changes such as climate change, as many other parts of the world (Root & Schneider 2002; Erwin 2009; Bellard *et al.* 2012), however the lack of management plans and also sometimes mismanagement on this natural ecosystem play the most important role on habitat changes and subsequent declining of wildlife abundances. The erosion of wetland watershed and annual deposition of about 400000 tons of sediments in

Anzali Wetland (Jica *et al.* 2005; Mirzajani *et al.* 2010) is one of the most important factors for wildlife habitat degradations.

Human overpopulation in this region severely has changed the natural environment to farmlands, urban and industrial land-uses. Furthermore, it caused increasing in habitat fragmentation, poaching and conflicts to wildlife. According to the land use data of Anzali Wetland catchment, the paddy fields have been decreased about 12%, while urban areas showed an increasing trend during 2003 - 2013 (Sepid-Ab-Shomal Company 2014).

Furthermore, following urbanization and rural developments, some new roads have been constructed around Anzali Wetland. These roads not only aggravated the habitats fragmentation and segregation, but also cause casualties for many mammal species. In the present study the Golden Jackal carcasses were frequently observed around the roads. The specimens of European Badger, mole and shrew were also gathered from road accidents. The extensive utilization of pesticides and other lethal chemical materials in agriculture activities around Anzali Wetland are another important negative factor on mammal populations.

According to archived data in agriculture organization of Guilan Province (AJO 2013), 68000 tons and 27000 cubic meters of pesticides, herbicides and fungicides are being used in farmlands and orchards around Anzali Wetland, annually. They can affect directly or indirectly all the organisms. However, some species which inhabited around the farmlands such as hedgehogs, shrews and bats are more affected.

The urbanization and replacement of old rural buildings (with natural materials) by modern buildings have negatively affected the bats populations and their dispersion. Bats are unavoidable inhabitants in these new constructions and occupy many human dwellings, including roofs, attics, cracks on the outside of buildings. There is a challenge between people and bats, when they are moving closer and closer to villages.



However, Common Otter distributes in all parts of Anzali Wetland, regarding to its range territory (Kennedy 2003), its population seems to be very fragile in this region. As an evidence, during the present study, six carcasses of Common Otter were found from some parts of Anzali Wetland, where no signs and tracks were found after their death. Although, habitat alteration and lack of water fluent in some regions decrease the territory of otters in this wetland, the human challenges is the most threatened factor to its survival. In most regions, they are killed as a pest of aquaculture and fish ponds, and sometimes captured as a by-catch prey, especially for their fur. While the high fisheries activity with illegal equipment is the main factor to mortality of otters in water body of Anzali Wetland, the fish farmers kill them around the wetland by different methods such as gun shooting, wire traps and electricity traps. Thus, similar to its worldwide status, it is in "Threatened" condition in Anzali Wetland, as well.

The conflicts of farmers to mammal species were frequently observed around Anzali Wetland. Wild Boars and European Badger were killed by landowners, when they are observed in paddy fields and also in vegetable and woody farmlands. The temporary climate changes (e.g. high snowfall) may intensify the slaughter. For example about 200 individuals of wild boar were killed during heavy snowfall in 2013, around Siakeshim region (according to interview to local people), when they were close to rural community because of starvation. The farmers hunt the least weasels that attack on domesticated chickens and other avian livestock. So that, also in the present study some observations were the killed individuals of this species by local people.

On the other hand, it seems that developing of rural and urban regions with untreated sewage and waste disposal caused the developing of some species distribution in Anzali Wetland, such as mice as disease agent carrier mammals, which will have harmful effects on human community health as well.

The conservation of mammals of the wetland is possible through wetland ecosystem conservation. Thus, it seems that for suitable and applied management of Anzali Wetland and subsequently, conservation of its mammals as well as other taxa, we need a regulated Adaptive Management Program with a comprehensive scientific view. So that, continuous studies on mammal species is needed for finding their density, population trends and conservation status in Anzali Wetland.

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## پستانداران تالاب انزلی در جنوب دریای خزر

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### چکیده

فون پستانداران تالاب انزلی بعنوان زیستگاه ثبت شده در لیست مونتره، در طی یک سال، از ژانویه ۲۰۱۵ تا ژانویه ۲۰۱۶ مورد بررسی قرار گرفت. حدود ۱۶۵ کیلومتر از بدنه آبی و ۲۰۰ کیلومتر از حاشیه این تالاب پیمایش میدانی شد. بر اساس روش‌های مختلف، مانند مشاهده مستقیم، ثبت علائم مختلف گونه‌ها، به کارگیری تله‌های نمونه‌گیری مختلف، تورها و دوربین‌های تله‌ای، بیست گونه پستاندار از پنج راسته و سیزده خانواده شناسایی شدند. در حالیکه گونه‌های گراز، شغال و شنگ دارای پراکنش وسیع در تالاب انزلی هستند، گونه‌های رودک، گربه وحشی آسیایی و گربه جنگلی، در بعضی بخش‌های این تالاب مشاهده شدند. هم‌چنین، شش گونه جونده در بخش‌های مختلف تالاب تشخیص داده شدند. در بین چهار گونه شناسایی شده خفاش، گونه خفاش ناتوزی، تنها از این منطقه در ایران گزارش شده است. فراوان‌ترین گونه خفاش شناسایی شده در این مطالعه، گونه خفاش سوپرانو بوده که در گذشته تنها از دو منطقه دیگر در ایران گزارش شده است. دو گونه تشخیص داده شده از راسته *Eulipotyphla*، حشره خور خزری و نیز یک نوع حفار عجیب، به لحاظ حوزه پراکنش باریک و نیز وضعیت تاکسونومیک، حائز اهمیت می‌باشند. گرچه اطلاعات کمی و کیفی از گذشته وجود ندارد، اما نتایج به دست آمده حاکی از آن است که وضعیت بسیاری از گونه‌های پستاندار تالاب انزلی، مطلوب نبوده و بسیاری از آن‌ها بطور فزاینده در معرض تهدید می‌باشند.

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