

## THE DISTRIBUTION OF WADER BIRDS IN EASTERN ROMANIA

Laurențiu PETRENCU<sup>1</sup>, Constantin ION<sup>1</sup> and Emanuel BALTAG<sup>1</sup>

“Alexandru Ioan Cuza” University, Faculty of Biology, Bd. Carol I, no. 11, Iasi, 700506, Romania,  
laurentiupetrencu@yahoo.com

<sup>1</sup>These authors equally contributed to present work

**Abstract.** In the period 2008-2011, we had numerous bird counting actions in wetlands from Eastern Romania (the region of Moldavia - Romania, except Vrancea County, Danube Delta and Razelm-Sinoe lagoon complex). During these counting actions we identified 28 species of wader birds in the area of Moldavia and 37 species in Dobrogea. We find new data on breeding distribution of Avocet, Black-Winged Stilt, Stone Curlew, Little Ringed Plover, Kentish Plover, Lapwing, White-tailed Lapwing, Common Sandpiper, Redshank and Curlew. On migration of wader birds we find new important sites, especially in Moldavian Region. Thus, the region of Moldavia and Dobrogea, thanks to the appropriate habitats and the trophic resources, represent an important breeding, feeding and resting area for the wader bird species from Europe.

**Keywords:** wader birds, ecology, distribution, Eastern Romania

**Rezumat. Distribuția păsărilor limicole din estul României.** În perioada 2008-2011, am realizat numeroase ieșiri în teren pentru inventarierea speciilor de păsări existente în zonele umede din estul României (regiunea Moldovei, exceptând mare parte din județul Vrancea, Delta Dunării și Complexul Razelm-Sinoe). În timpul acestor deplasări au fost identificate 28 de specii de limicole în regiunea Moldovei și 37 în zona Dobrogei. Au fost identificate locuri noi de cuibărit pentru ciocintors, piciorong, pasărea ogorului, prundărașul gulerat mic, prundărașul de sărătură, nagăț, nagățul cu coadă alba, fluierarul de munte, fluierarul cu picioare roșii și culicul mare. În ceea ce privește migrația, au fost identificate noi situri importante pentru conservarea limicolelor, în special în Regiunea Moldovei. Prin urmare cele două regiuni acoperite în studiul nostru, Moldova și Dobrogea, reprezintă arii importante de cuibărire, hrănire și odihnă pentru păsările limicole din Europa datorită tipurilor de habitat și a resurselor trofice oferite de acestea.

**Cuvinte cheie:** păsări limicole, ecologie, distribuție, Estul României

### Introduction

Wader birds can be considered bioindicators of the wetlands. This group of birds eats various species of invertebrates that can be found in the mud of swamps, side channels, lakes and sea. Human interventions in these habitats through drainage, draying out, adjustments of the banks etc. can damage them, affecting in this way the populations of invertebrates. Taking into account the magnitude of the human interventions in these ecosystems and especially the situation of this group of birds, we considered necessary the assessment of the current status and the changes that occur in the structure of the wader populations. This is the reason why we assessed the state, the local and regional development outlining a clear picture of the situation of this birds group.

In the Eastern part of Romania there are less extensive studies on wader birds. (Papadopol, 1966; Müller, 2004). Therefore, we intend to present an overview of the distribution of wader species in Eastern Romania (the region of Moldavia – Siret and Prut rivers and Dobrogea – Danube Delta and Razelm-Sinoe lagoon complex). The examined regions include many wetlands with low waters where wader birds can find rich trophic resources. If we refer only to Dobrogea, the region is a “bottle neck” for the flocks of migratory birds. The Danube continually brings nutrients, favouring in this way the development of an extremely varied and abundant food resource for waders.

According to Wetland International (BirdLife International, 2011) in Europe, more than 50% of wader bird populations are in decline (BirdLife International, 2011). Wader birds represent a group of waterfowl that migrate long distances, from the Arctic to southern Africa. During their passage, they concentrate only in some wetlands from Europe, which thus become critical for their protection (BirdLife International, 2011). Taking into account their importance as bioindicators for the wetlands and the fact that a continuous monitoring of the bird populations is necessary to protect them in the Special Protected Area from Nature 2000 Network, we intended to describe an overview of the wader bird populations in Eastern Romania.

### Materials and Methods

In the period 2008-2011, we had numerous birds counting actions in the wetlands from eastern Romania (the region of Moldavia - Romania, except Vrancea County, Danube Delta and Razelm-Sinoe lagoon complex). References and older observations or records of ornithologist specialists completed the information collected in the field. We used for this study two working methods: the transect method and the observation method from a fixed point, according to the habitat in which the observations were made. The transect method was divided into two parts: on land and on water, by boat. We counted the birds during all the phenological seasons. For each individual or flock we write down the species, the number (of each species in the flock), the habitat which they used it and we figure the location in the wetland. All the observations were integrated into the GIS database.

### Results and discussions

The group of wader birds or shorebirds is a very diverse one. There are 222 species in the world from which 77 species are in Europe. In Romania, there were observed until now 44 wader bird species (Milvus Group, 2011; Weber, 2000), to which can be also added five species with accidental character: *Charadrius vociferus* (Killdeer), *C. leschenaultii* (Great Sand Plover), *C. asiaticus* (Caspian Plover), *Vanellus gregarius* (Sociable Lapwing) și *Vanellus spinosus* (Spur-winged Lapwing).

The following we analyze separately the current situation of 37 wader birds species recorded in the eastern part of Romania.

- Oystercatcher – *Haematopus ostralegus* (Linnaeus, 1758)

In Moldavia we have no data on the species' occurrence. In Dobrogea it is a widespread bird, in areas such as the Danube Delta and the Black Sea. In the Danube Delta the species occur regularly on Fortuna Lake, along Caraorman Chanel, Letea Sandbank, Sulina and Sfântu Gheorghe; it can be constantly met on sand dunes, on banks of canals and along the shore of the Black Sea. Other sites where we met relatively many species (more than 100 birds in one group) include Lupilor Sandbank, Istria and Chituc Sandbank (Vadu), but mostly during the passage. The species is not breeding in our country.

- Avocet – *Recurvirostra avosetta* (Linnaeus, 1758)

In Moldavia the species is frequently observed in the swamp wetlands (Ion & Gache, 1992-1993; Gache & Ion 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller, 2005,a; Müller & Gache, 2006). It was observed on the banks of lakes with little water and in swamps devoid of vegetation. We identified the species in Suceava County - Falticeni Lakes; Iași County – Fishing Farm Larga Jijia, Hălțeni Lake, Miletin Swamp; Vaslui County – Rânzești Swamp; Galați County – Brateș Lake and Șovârca Lake; Bacău

County – Lilieci Lake and Bacău Lake. In the area of Moldavia the largest number of avocet was identified on Hălțeni Lake (with big number in migration 56 individuals, 15 September 2009), where the species also breeds and on Rânzești Swamp (37 individuals, 9 November 2010).

In Dobrogea the species is more frequently than in the region of Moldavia and the flocks are much larger (Schmitz *et al.*, 1999; Weber, 2000; Platteeuw *et al.*, 2003; Doroșencu *et al.*, 2004; Török, 2004; Pocora, 2007; Kiss *et al.*, 2008; Munteanu, 2009, Papp & Fântână, 2008). It was identified in the basins of the fish farms with shallow water, in shallow ponds and lakes, but also on the banks of lakes and abandoned ponds. Within the Danube Delta we identified the species in the ponds from Caraorman; Letea and the abandoned fish farm in Stipoc. Outside the Danube Delta we noticed the species in: Sărățuri-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Sabangia (the largest flock, 250 individuals in 3.11.2007 and 17.11.2007), Lupilor Sandbank, Istria, Sinoe Lake, Vadu ponds. In Dobrogea the areas with the highest density of breeding pairs are: Sărățuri-Murighiol (10 pairs), Plopu-Beibugeac Lake (15 breeding pairs), Sabangia (20 breeding pairs), Lupilor Sandbank (20 breeding pairs), Istria (15 breeding pairs) and Vadu (15 breeding pairs).

- Black-winged Stilt – *Himantopus himantopus* (Linnaeus, 1758)

In Moldavia the species is widely spread (Ion & Gache, 1992-1993; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller, 2005,a; Müller & Gache, 2006; Ignat & Ion, 2010), in shallow swamps and on the shore of lakes. We identified the species in Iași County - Fishing Farm Larga Jijia, Miletin Swamps, Hălțeni Lake, Ciobârciu wetlands, Lețcani meadows and Popricani, in an abandoned water basin; Vaslui County – Fishing Farm Cârja, Bogdănești, Cuibul Vulturilor Lake, Mânjești Lake, Solești Lake; Galați County – Brateș Lake, Tălăbasca Lake, Șovârca Lake and the Fishing Farm Vădeni; Botoșani County – Lake Iezăr-Dorohoi, Lake Galbeni, Ibăneasa Lake; Bacău County – Lilieci Lake, Galbeni Lake, Răcăciuni Lake and Bacău Lake. We consider the observation from Iași County – Popricani to be interesting because the species was registered nesting on the banks of a former water canal (of up to 150 m in diameter) for irrigation, surrounded only by agricultural land. Therefore, the species could have a wider spread than it is currently known.

Dobrogea is the region of Romania where the species is the most common, thanks to the very large number of wetlands and habitats favourable for nesting (Schmitz *et al.*, 1999; Weber, 2000; Platteeuw *et al.*, 2003; Kiss *et al.*, 2008; Doroșencu *et al.*, 2004; Török, 2004; Munteanu, 2006; Munteanu, 2009; Pocora, 2007; Papp & Fântână, 2008). The species was observed on shores of lakes with low water, in abandoned fish farms, habitat favourable for nesting because of the shelter provided by vegetation, which makes the access of predators to be difficult. The ponds from Caraorman and Vadu, lakes or shallow waters (Plopu-Beibugeac, Sărățurile-Murighiol, Lupilor Sandbank, Istria) and even meadows with salt marshes vegetation (Lupilor Sandbank, Istria and Vadu). In the Danube Delta, the highest density being found in the area of the lakes Zaghen, Furtuna and Plopu-Beibugeac, where we met the largest number of Black-winged Stilton 18.06.2005, 100 birds; on top of the bank ridges Stipoc, Caraorman, Letea, Lupilor and Chituc (Vadu); in Sulina, Sfântul. Gheorghe; Sărățurile-Murighiol and Istria.

In Moldavia it nests in most already-mentioned areas (except Ciobârciu Wetland) and in Dobrogea, in areas such as the abandoned fish farms from Maliuc and Stipoc, the ponds from Caraorman and Vadu, Lupilor Sandbank and Histria, especially in the last years because of the lack of water in late May, early June and the most suitable areas for nesting remain Sărățurile-Murighiol (20-25 nesting pairs) and Plopu Beibugeac Lake (20-

30 nesting pairs), the number varying according to the disturbance of birds, because the lakes are very close to the rural settlements.

- Stone Curlew – *Burhinus oedicnemus* (Linnaeus, 1758)

In Moldavia we know only one observation of this species in Bacău County, on the bank of Lake Berești on 6.06.2010 (Pocora Viorel, *in verbis*).

In Dobrogea the species is best represented, thanks to the specific habitat (open, arid areas), which cover large areas in this region of Romania. The species was repeatedly signalled in migration, but also as nesting species (Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Török, 2004; Munteanu, 2006; Munteanu, 2009, Pocora, 2007). We met the species more during the nesting period in the Danube Delta, on Letea and Caraorman, in Sulina, Bididia – Tulcea, in Dobrogea Gorge and around, in Sărățuri-Murighiol, in the steppe area, at the crossroad of the road Săcele - Gura Dobrogei with the European road E87 (Tulcea – Constanța), in Vadu, Măcinu Mountains (in the area of Greci). On 2.09.2007 on the edge of Săcele on a strip of land of 1 ha, 42 individuals of Stone Curlew were found.

In Dobrogea we identified the species on top of the bank ridges (Letea, Caraorman), on sand dunes (Caraorman), in steppe patches with *Euforbia* sp. (Bididia, Dobrogei Gorges, Sărățuri-Murighiol) and in salt areas with Common Glasswort (*Salicornia europaea*, at Vadu).

We met the species nesting in the Danube Delta, on Letea and Caraorman Sandbanks, in Bididia, in Dobrogei Gorges and around, in Sărățuri-Murighiol, in steppe at the crossroad of the road Săcele - Gura Dobrogei with the European road E 87, Tulcea – Constanța and in Vadu, Măcinului Mountains (Greci).

- Collared Pratincole – *Glareola pratincola* (Linnaeus, 1766)

In Moldavia the species was not observed. In Dobrogea is frequently met in numerous areas of migration, but also nesting (Ion *et al.*, 1998-1999; Schmitz *et al.*, 1999; Weber, 2000; Platteeuw *et al.*, 2003; Török, 2004; Ion & Pocora, 2005; Munteanu, 2006; Munteanu, 2009; Pocora, 2007). We met the species in the Danube Delta (Letea and Caraorman), Sărățuri-Murighiol, Popu-Beibugeac Lake, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu), being observed on salt soils covered especially with *Salicornia europaea* (Common Glasswort) (on Letea Sandbank) and in abandoned basins (on Caraorman Sandbank); lakes with water and open areas with salt marshes vegetation (Sărățuri-Murighiol, Lacul Popu-Beibugeac); salt ponds around where the vegetation is predominantly by Common Glasswort (Grindul Lupilor, Istria and Grindul Chituc-Vadu). The nesting of the species was registered in the Danube Delta (Letea and Caraorman), Sărățurile-Murighiol and Popu-Beibugeac Lake, where there are small populations, of maximum 15 nesting pairs and in areas such as Lupilor Sandbank, Istria and Vadu, the populations being considerably higher. Although in the case of the last two areas, we noticed decreases in the number of nesting pairs. The anthropogenic influence, represented by intensive grazing and pens' dogs, is the main factor causing fluctuations of the breeding populations in Dobrogea.

- Little Ringed Plover – *Charadrius dubius* (Scopoli, 1786)

In Moldavia the species is frequently observed (Ciochia, 1992; Ion & Gache, 1992-1993, Gache, 2002, 2010; Munteanu *et al.*, 2002; Müller, 2004; Müller, 2005,a; Müller & Gache, 2006). We observed it in meadows and along the banks of large lakes: Galați County - Șovârca Lake and Brateș Lake; Vaslui County - Solești Lake, Cuibul Vulturilor Lake, Mânjești Lake and Cârja Fish Farm; Iași County – Larga Jijia and

Gorban Fish Farms, Ciobârciu Wetlands, Hălțeni Lake, Plopi Lake, Tansa Lake and Gurguiata Lake; Suceava County - Sucevița Meadow and Fălțiceni Lakes; Botoșani County - Iezăr-Dorohoi Lake and Havârna Lakes and Bacău County - Lilieci Lake, Galbeni Lake and Răcăciuni Lake. The species nests in most of the above areas. The maximum density of this species in Moldavia is 5 breeding pairs/10 ha.

In Dobrogea it is a species with a wide area of distribution (Ciochia, 1992; Schmitz *et al.*, 1999; Weber, 2000; Munteanu *et al.*, 2002; Török, 2004; Munteanu, 2006; Pocora, 2007), on the banks of the Danube Delta channels, in artificial ponds (Caraorman), in drained wetlands (Sulina), in oozy areas (Sarinasuf), in salty areas (Letea, Sărături-Murighiol, Lake Plopu-Beibugeac, Lupilor Sandbank, Chituc Sandbank, Istria and Vadu), in areas with extraction of limestone-quarrying (Dobrogei Gorge), in Tulcea (on Lake Ciuperca, when it was dried in 2008) and in the centre of Casimcea Plateau. The species breed in Letea, Caraorman, Sărături-Murighiol, Plopu-Beibugeac Lake, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu).

- Ringed Plover – *Charadrius hiaticula* (Linnaeus, 1758)

In Moldavia there are a few observations related to this species (Ion & Gache, 1992-1993; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006). We identified the species in the County of Iași, in the swampy area of Hălțeni Lake's tail (3 individuals during the autumn passage on 15.09.2009). In Dobrogea the species is more common and with higher effectives (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Munteanu, 2006; Pocora, 2007). It was observed on the shores of salt water ponds and in the salt marshes vegetation from Lupilor Sandbank, Istria and Vadu, in Vadu ponds and on the Black Sea coast (Vadu Beach).

- Kentish Plover – *Charadrius alexandrinus* (Linnaeus, 1758)

In Moldavia the Kentish Plover is mentioned as appearing during the spring passage on Jijiei Wetlands (Ion & Gache 1992-1993). In the region of Moldavia we did not observe this species. In Dobrogea it is very well represented, both during the nesting period and during the migration one (Ciochia, 1992; Ion *et al.*, 1998-1999; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Török, 2004; Munteanu, 2006; Munteanu, 2009; Pocora, 2007; Kiss *et al.*, 2008). We met the species within the Danube Delta in Maliuc Fish Farm; along the channel between Crișan and Caraorman, on sandy shores; the ponds from Caraorman. Outside the Delta we observed the species on the banks of ponds and salty lakes in: Sărături-Murighiol, Plopu Beibugeac Lake, Lupilor Sandbank, Istria and on the sandy beaches of the Black Sea (Vadu). The last sit is also the place where we met the largest flocks of the species during migration, groups of 135 individuals (17.08.2007) and 230 individuals (17.08.2007). A less common habitat of Kentish Plover was a pond of rain water formed in an abandoned quarry in the heart of Casimcea Plateau (Dobrogei Gorge – observation made on 9.07.2005).

The Romanian population was estimated at 1,000-2,000 breeding pairs, but there is a decline, also illustrated in Istria-Nunțași population evaluated by Weber, 200-400 pairs and, recently, Schmitz *et al.* (1999) consider that 100-300 pairs nest in the lagoon. The breeding areas where we found the species nesting are: Plopu-Beibugeac Lake, Lupilor Sandbank and the sandy beaches from Vadu. The last location is very sensitive because both the birds and the nests are permanently disturbed by people, especially by the access of vehicles.

- Grey Plover – *Pluvialis squatarola* (Linnaeus, 1758)

In Moldavia it is a frequently observed species during migration (Gache, 2002,

2010; Müller, 2004; Müller & Gache, 2006). We identified it especially during the autumn passage in Vaslui County – Cârja Fish Farm; Bacău County – Răcăciuni Lake; Iași County – Ciobârciu Wetland, Hălțeni Lake and in the Vlădeni Fish Farm; Suceava County – Fălticeni Lakes, Rogojești Lake and Bucecea Lake.

In Dobrogea the Grey Plover is regularly observed during the passage period (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșcencu *et al.*, 2004; Török, 2004; Ion & Pocora, 2005; Munteanu, 2006; Pocora, 2007) and we identified the species in the Danube Delta, in salt marshes (Letea, Grindul Lupilor, Istria), marshes (Sarinasuf) and in Vadu ponds (Grindul Chituc).

The Grey Plover was also observed in small groups (65 individuals on Lake Hălțeni on 13.11.2010), but the isolated individuals are predominant. In Dobrogea the groups observed are considerably lower than in Moldavia, formed of only a few birds, although Schmitz *et al.* (1999) mentions even 70 individuals and Weber (2000) identifies flocks of 23-30 individuals, the maximum being of 73 individuals. However, the species is more rarely met in numerous groups unlike the Golden Plover.

- Golden Plover – *Pluvialis apricaria* (Linnaeus, 1758)

In Moldavia it is a species with regular appearances during the passage (Papadopol, 1975; Papadopol & Mândru, 1967; Gache, 2010; Müller, 2004; Gache & Müller, 2006; Ignat & Ion, 2010). We observed the species in Galați County – Șovârca Fish Farm; Vaslui County – Rânzești Swamp; Iași County – Larga Jijia Fish Farm and Hălțeni Lake, Suceava County – on the shallow lakes – Fălticeni Lakes, Bucecea Lake. In Dobrogea the species is frequently observed during the spring and autumn passage, as it is mentioned in literature (Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Munteanu, 2006). We identified it in salt marshes habitats, on Popu-Beibugeac Lake, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu), but also on the agricultural land near Lupilor Sandbank. In Moldavia we observed the species only during the autumn passage, in October and November, with considerable numbers. The biggest flock being observed on 9.11.2010 Șovârca in Fish Farm (500 individuals). In Dobrogea we observed the species during the spring and autumn passage, but more birds were registered during the spring passage rather than in autumn (Weber, 2000). The largest group was observed on 20.03.2011 on the agricultural land near Grindul Lupilor (200 individuals).

- Lapwing - *Vanellus vanellus* (Linnaeus, 1758)

In Moldavia it is the most widespread wader bird, as it is mentioned in literature (Papadopol, 1975; Papadopol & Mândru, 1967; Ion & Gache, 1992-1993, Gache & Ion, 1998-1999; Gache, 2002, 2010; Munteanu *et al.*, 2002; Müller, 2004; Müller & Gache, 2006). We met this species in a very wide variety of habitats such as lakes, fish farms, swamps, wetlands, meadows, farmland, edges, plains and river valleys. We observed the species in Galați County – Vlădești-Oancea Fish Farm, Rădeanu and Tălăbasca Lake; Vaslui County - Cârja Fish Farm, Huși, Solești, Mânjești, Pușcași, Găgești, Râpa Albastră (Simila) Lakes, Cârja-Mața-Rădeanu Fish Farms and Rânzești Swamp; Iași County – Larga Jijia and Vlădeni Fish Farms, Podu Iloaiei Lake, Hălțeni Lake, Tansa Lake, Gurguiata Lake, Plopi Lake, Ciobârciu Wetlands, Miletinului Marshes, Vânători, Bârnova Forest, meadows from Grajduri and Valea Jijiei; Botoșani County - Hănești Lakes, Mileanca Lake, Iezăr-Dorohoi Lake, Havârna Lakes, Ibăneasa Lake, Hudești Lake, Galbeni Lake, Negreni Lake, Dragalina Lake, Dracina Lake, Poponi Lake, Sulița Lake, Stâncă Costești Lake, Leahu-Nacu Lake and Ichimeni Pool; Suceava County – Fălticeni Lakes, Rogojești, Bucecea and Suceviței Meadow; and Neamț County – Trifești Fish Farm and Budești, Bălăbănești Lake. In Moldavia the lapwing is frequently met nesting in

most of the already-mentioned areas. In Dobrogea we met the species in habitats typical for the Danube Delta: lakes, marshes, sand dunes, banks of canals, abandoned farms and artificial ponds, but also on banks of freshwater lakes, brackish and saline marshes, sand banks and areas with salt marshes vegetation. The lapwing is very widely spread in this region, too (Ciochia, 1992; Ion *et al.*, 1998-1999; Schmitz *et al.*, 1999; Weber, 2000; Munteanu *et al.*, 2002; Török, 2004; Dorosencu *et al.*, 2004; Ion & Pocora, 2005; Pocora, 2007; Munteanu, 2006). The species was observed in most of the places with favourable habitat for feeding, resting and breeding, represented by open areas: in the Danube Delta from Letea in the North to Caraorman in the South and from Tudor Vladimirescu (Tulcea) in the West to Sulina and Saint George in the East and outside the Danube Delta, on the lakes Zaghen, Tauc, Câșlița, Somova, Parcheș, Revărsarea, Jijila, Sărat (Măcin), Plopu-Beibugeac, Calica, Razelm-Sinoe, Golovița, Zmeica, Babadag Forest, Sărături-Murighiol, Sarinasuf, Enisala, Jurilovca, Sabangia, Lunca, Vișina, Lupilor Sandbank, Istria, Chituc Sandbank and Techirghiol Lake.

- Spur-winged Lapwing - *Vanellus spinosus* (Linnaeus, 1758)

In Romania the species is very rare; we know only three reliable observations. The first one was made by Dr. E. Bezzel on 8.08.1964, when an adult was observed on Borcea Branch, Ialomița County (<http://danielpetrescu.ro/2010/01/02/common-buzzard-buteo-buteo-albino>). The second observation was made on 3.08.1977, on Lake Dranov, Tulcea County, when an adult was seen (Paspaleva & Tâlpeanu, 1979). The most recent observation of the species is on 28.05.2009 on Lupilor Sandbank (Petrescu Daniel, *in verbis*), in a marshy area.

In Europe, the only country where this species breeds Greece and the population is estimated at 35-45 pairs (Hagemeijer & Blair, 1997). The birds that appear accidentally in other European countries are erratic, the nesting of the species not being signalled in another part of Europe.

- White-tailed Lapwing – *Vanellus leucurus* (Lichtenstein, 1823)

In 2000 on the coastal area of the Razem-Sinoe lagoon complex (Chituc Sandbank, Vadu) and the Danube Delta (Sulina and Sfîntul Gheorghe) were identified about 60 individuals, being found also eggs, chicks, fledging (Kiss & Szabó, 2000). This was the first case of the White-tailed Lapwing's nesting in Romania and, at the same time, the first breeding sign of this species in Europe. In 2001, four pairs breed in Vadu (Munteanu, 2009). This case of breeding in Dobrogea, when at least 25 breeding pairs of white-tailed lapwing, grouped in different places, had the character of an explosive invasion. Such cases of colonization over long distances are known in the bird world, but this breeding micropopulation at a distance of 1,700 km of the species breeding range, in a different direction than the one to which they migrate, was undoubtedly an exceptional case (Munteanu, 2009). In the years that followed no breeding pairs were identified, but solitary individuals were still observed in the area during the summer. In Moldavia the species was not observed. In Dobrogea, we identified it in three places in the lagoon complex Razelm-Sinoe: basins from Vadu (12.05.2007), Sabangia (14.11.2009) and Istria (13.04.2011). We observed the species in different types of habitats: in areas with sparse vegetation, in mud waters (Sabangia) and in the salt steppe vegetation from Istria. Now we cannot reconfirm the breeding of this species.

- Knot – *Calidris canutus* (Linnaeus, 1758)

In Romania the species had constant appearances during the spring and autumn passage (Papadopol, 1966), but in the last years it has sporadic appearances (Weber,

2000). The observations in our country concerning the species started to grow in the last years: 2 individuals in Scobâlțeni, Iași County (Gache, 2002). In Romania the Knot appears only accidentally, especially on the shore of the Black Sea. It can be seen often at Vadu (Chituc Sandbank). There are not signals of the species' breeding.

- Sanderling – *Calidris alba* (Pallas, 1764)

In Moldavia the species is mentioned in literature, but with a few appearances in Galați, Vaslui and Iași (Papadopol, 1966; Gache, 2002; Müller, 2004; Müller & Gache, 2006; Gache, 2010; Ignat & Ion, 2010). We observed it in the region Cârja-Mața-Rădeanu. In Dobrogea the Sanderling is a frequent species during the passage period, on the shore of the sea and in the nearby areas (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Munteanu, 2006). We met the species only during the passage period on Lupilor Sandbank, Istria and on the shore of the Black Sea at Chituc Sandbank (Vadu). The species was observed in different types of habitats, such as the swamp with brackish water on Lupilor Sandbank, on the shores of salt ponds from Istria and we saw big numbers on the shore of the sea in Chituc Sandbank (Vadu), in groups of up to 90-100 individuals.

- Turnstone – *Arenaria interpres* (Linnaeus, 1758)

In Moldavia the species is mentioned in literature (Papadopol, 1966; Gache, 2002; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010), as present in more areas, during the passage periods, but we observed it only in the area Cârja-Mața-Rădeanu.

In Dobrogea the species is more common, being met especially on the coast of the Black Sea, in Razelm-Sinoe lagoon complex, in areas with little water, salt and in the Danube Delta, as it is mentioned in literature (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Munteanu, 2006). We observed it in four places of the Danube Delta: Fortuna Lake, Sulina, Caraorman and Sfântul Gheorghe and in Constanța County, but also on Lupilor Sandbank, Istria and Grindul Chituc (Vadu).

The species does not nest in Romania. We found out that during the autumn passage the groups observed were of 35-40 individuals, while during spring we did not see more of 10 individuals in a group.

- Dunlin – *Calidris alpina* (Linnaeus, 1758)

In Moldavia, the species is frequent observed and with large flocks during passages (Papadopol, 1966; Gache, 2002; Gache, 2010; Müller, 2004; Müller & Gache, 2006). We observed it in Vaslui County – Solești Lake and Rânzești Swamp; Iași County – Larga Jijia and Vlădeni Fish Farms, Hălțeni Lake, Gurguiata Lake, Ciobârciu Wetlands; Suceava County – Fălticeni Lakes. In Dobrogea the species is widely spread (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Munteanu, 2006; Pocora, 2007), because it is used to follow the coast of the Black Sea, here being registered large numbers. We met it in the following areas of Dobrogea: Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Sabangia, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). In Moldavia the number of individuals observed only in one area was of 350 (Hălțeni Lake), individuals observed during the autumn passage. In Dobrogea the largest flocks that we registered are during winter and the autumn passage, in which the observed groups were formed of 200-300 individuals (Sabangia, Lupilor Sandbank). Weber (2000) mentioned in the census made in 1992 effectives of 10,000–15,000 individuals, fact that makes us to think that the numbers transiting Romania in the last years diminished.



- Curlew Sandpiper – *Calidris ferruginea* (Pontoppidan, 1763)

In Moldavia the species has relatively frequent appearances (Pontoppidan, 1763). We observed it especially in Iași County, at the Vlădeni Fish Farm and Hălțeni Lake.

In Dobrogea the species represents a common appearance (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Török, 2004; Pocora, 2007; Ion & Pocora, 2005; Munteanu, 2006), in fish farms ponds with little water inside, on oozy banks of the lakes, in salt marshes areas, artificial pools and at the seaside. We identified it in Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). The livestock species do not exceed 40 individuals per day of observation. In 2000, Weber mentioned that the annual census made in the area of Istria recorded around 5,400 individuals / year.

- Broad-billed Sandpiper – *Limicola falcinellus* (Pontoppidan, 1763)

In Moldavia the species was observed relatively more rarely (Papadopol, 1966; Gache & Ion, 1998-1999; Gache, 2002; Müller, 2004; Müller & Gache, 2006; Gache, 2010; Ignat & Ion, 2010). During the study we observed the species only in the Wetland Ciobârciu, on the Swamps of Miletin and in the area Cârja-Mața-Rădeanu. In Dobrogea the species is frequently met during the passage period (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Munteanu, 2006; Pocora, 2007). We identified the species predominantly in swamp areas (rich in food resources), with freshwater, brackish or salt water areas from which water withdrew and in artificial pools. During the study we observed the species in the area of Razelm-Sinoe lagoon, on Lupilor, Istria and Grindul Chituc (Vadu). The flocks observed in Romania are birds of passage. The largest flock of Broad-billed sandpiper seen is of 125 individuals, in the region of Vadu on 23.08.2009. In 2000, Weber mentioned that during the passage, in Histria, the average flock was between 300 and 800 individuals.

- Temminck's Stint – *Calidris temminckii* (Leisler, 1812)

In Moldavia the species is rare (Papadopol, 1966; Gache & Ion, 1998-1999; Gache, 2002; Müller, 2004; Gache, 2010; Ignat & Ion, 2010). We observed it only in Vaslui County, on Solești Lake and Iasi County, in Ciobârciu Wetlands. In Dobrogea the Temminck's Stint is more widely spread than in Moldavia (Papadopol, 1966; Weber, 2000; Doroșencu *et al.*, 2004; Munteanu, 2006; Pocora, 2007). We met the species on Zăghen Lake, Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Sabangia, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). The habitats where we observed Temminck's Stint are specific to the species and consist of the swamp shores of lakes, wetlands with hydro and hydrophilic vegetation and salty areas.

In Romania we see only birds in passage and the numbers are relatively small (the average is of 20 on Plopu-Beibugeac Lake, in April).

- Little Stint – *Calidris minuta* (Leisler, 1812)

In Moldavia the species is observed during the passage period only in a few areas of this region (Papadopol, 1966; Gache & Ion, 1998-1999; Gache, 2002; Müller, 2004; Müller & Gache, 2006; Gache, 2010; Ignat & Ion, 2010). We confirmed the presence in Iași County, on Hălțeni Lake and in Cârja-Mața-Rădeanu Fish Farms. In Dobrogea the species is more common than in Moldavia, with regular appearances and large flocks (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Munteanu, 2006). We observed it in many places in Dobrogea, among which we mention the Danube Delta (Caraorman and Fortuna Lake), Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). We saw it in a wide

variety of habitats, such as the swamp shores of lakes, sandy shores of the Danube Delta canals, in salt ponds or brackish water and in artificial ponds.

The flocks which we identified during the passage fluctuated very much, creating large differences between spring and autumn. The winter flocks are larger, reaching to 250, while the spring did not rise above 130 per day of observation. Weber, 2000, also observed this difference during the monitoring from Istria, when the numbers of spring passing were about 8,800 and in autumn about 10,000.

- Wood Sandpiper – *Tringa glareola* (Linnaeus, 1758)

In Moldavia the species is frequently met during the migration periods (Papadopol, 1966; Ion & Gache, 1992-1993; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010). We observed the species in Galați County - Brateș Lake, Tălăbasca Lake, Șovârca Lake and Rădeanu; Vaslui County – Cârja Fish Farm, Cuibul Vulturilor Lake, Râpa Albastră Lake, Pușcași Lake, Mânjești Lake and Solești Lake; Iași County – Larga Jijia, Vlădeni and Gorban Fish Farms, Plopi Lake, Tansa Lake, Podu Iloaiei Lake, Hălțeni Lake, Ciobârciu Wetlands and in a wetland area near Vânători; Suceava County - Rogojești Lake, Bucecea Lake and Fălticeni Lake; Botoșani County - Iezăr-Dorohoi Lake, Mileanca Lake, Ibăneasa Ponds, Ichimeni Lake, Hudești Lake, Popeni Lake and Stânca-Costești Lake.

In Dobrogea the species is common during the passage (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Doroșencu *et al.*, 2004; Munteanu, 2006; Pocora, 2007). We met it in very many places in Dobrogea: almost over all Danube Delta, the drainage canals near Tulcea, Zaghen Lake, Ciuperca Lake, Căslia Lake, Cetățuia Wetland, Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Sabangia, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). The species was observed in a wide variety of habitats, such as shallow areas of fish farms, swamps, banks of lakes, artificial ponds, banks of canals in Danube Delta, drainage canals with waste water, brackish water or salt ponds and lakes. In Romania, the species is not breeding.

- Green Sandpiper – *Tringa ochropus* (Linnaeus, 1758)

In Moldavia the species is frequently met (Papadopol, 1966; Ion & Gache, 1992-1993; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010, Feneru, 2002). Our observations confirm the presence of the species in: Galați County – Vlădești-Oancea Fish Farm and Brateș Lake, Tălăbasca Lake, Șovârca Lake, Rădeanu Fish Farm; Vaslui County – Cârja and Mața Fish Farms, Mânjești Lake, Râpa Albastră Lake, Cuibul Vulturilor Lake, Solești Lake, Huși Lake and Mața-Rădeanu Lakes; Iași County – Larga Jijia, Vlădeni, Goban and Țigănași Fish Farms, Iezăreni Lake, Chirița Lake, Plopi Lake, Tansa Lake, Gurguiata Lake, Siret-Paşcani Meadow, Prutului Meadow (Bălătau-Teiva), Hălțeni Lake, Ciric Lake, Podu Iloaiei Lake, Ciobârciu Wetlands, Jijia Meadow and also Vânători Wetland; Suceava County - Sucevița Meadow, Fălticeni Lakes, Rogojești Lake and Bucecea Lake; Botoșani County - Dracșani Lake, Stânca Costești Lake, Iezăr-Dorohoi Lake, Dragalina Lake, Popești Lake, Hudești Lake, Havârna Lake, Negreni Lake, Ibăneasa Lake, Ichimeni Pond, Slobozia-Hănești Fish Farm, Mihăleşeni Lake and Mileanca Lake.

In Dobrogea the species is widely spread (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Doroșencu *et al.*, 2004; Ion & Pocora, 2005; Munteanu, 2006; Pocora, 2007). We observed it in most of the areas of the Danube Delta, the drainage canals near Tulcea, Zaghen Lake, Ciuperca Lake, Căslia Lake, Parcheș Wetland, Somova Lake, Babadag Forest (Codru), Dobrogei Gorge, Cetățuia Wetland, Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Sabangia, Lupilor Sandbank, Istria and Chituc

Sandbank (Vadu). The species was observed in a wide variety of habitats, such as shallow water in fish farms, swamps, banks of lakes, artificial ponds, banks of the Danube Delta canals, drainage canals with waste water, brackish water or salt ponds and lakes. In Romania, the species is not breeding.

- Common Sandpiper – *Actitis hypoleucos* (Linnaeus, 1758)

In Moldavia it is a common species from April to August (Papadopol, 1966; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010, Feneru, 2002). We observed it in the following places: Galați County – Brateș Lake; Vaslui County – Cârja Fish Farm, Solești Lake and Pușcași Lake; Iași County – Hălțeni Lake, Larga Jijia and Tigănași Fish Farms, Ciobârciu Wetland, Podu Iloaiei Lake, Mogoșești-Siret Forest; Suceava County - Sucevița Meadow; Botoșani County – Iezăr-Dorohoi Lake, Mileanca Lake, Ibăneasa Ponds and Stânca Costești Lake.

The Common Sandpiper is widely spread also in Dobrogea (Papadopol, 1966; Schmitz *et al.*, 1999). We identified the species in most areas of the Danube Delta, during the passage, on Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). The habitats where the species was observed are represented by: shallow areas of farms, swamps, banks of lakes and canals, small ponds and artificial lakes.

In Romania the Common Sandpiper is widely spread along the rivers in mountainous regions and to the Danube Delta, the breeding population being estimated to 2,000-3,000 breeding pairs (Munteanu *et al.*, 2002).

- Terek Sandpiper – *Xenus cinereus* (Güldenstädt, 1775)

In Moldavia we have no data about the appearance of the species in the area. In Dobrogea it appears accidentally, being a rare species (Schmitz *et al.*, 1999; Weber, 2000). We saw one exemplary in each of the two areas: on the shores of Istria salt ponds and in the artificial ponds in Vadu (Chituc Sandbank).

- Redshank – *Tringa totanus* (Linnaeus, 1758)

In Moldavia the species is frequently observed (Papadopol, 1966; Gache & Ion, 1998-1999; Ion & Gache, 1992-1993; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010). We observed the species in many areas from: Vaslui County - Cârja Fish Farm, Solești Lake, Râpa Albastră Lake and Rânzești Swamp; Iași County – Larga Jijia and Vlădeni Fish Farms, Hălțeni Lake, Podu Iloaiei Lake, Gurguiata Lake, Tansa Lake, Ciobârciu Wetland and Miletin Swamp; Suceava County – Fălticeni Lakes and Bucecea Lake; Botoșani County – Hudești Lake, Ibăneasa Ponds, Ichimeni Lake, Iezăr-Dorohoi Lake, Drașani Lake. In Moldavia we identified the species breeding in the area of Iași County – Miletin Swamps, Hălțeni Lake and Vlădeni Fish Farm.

In Dobrogea the species is common, especially because here can be seen most of the breeding pairs in the country, aspect which is also mentioned in literature (Papadopol, 1966; Ciochia, 1992; Ion *et al.*, 1998-1999; Schmitz *et al.*, 1999; Weber, 2000; Munteanu *et al.*, 2002; Török, 2004; Dorošencu *et al.*, 2004; Ion & Pocora, 2005; Munteanu, 2006; Pocora, 2007). We observed it in the Danube Delta (Letea, Fortuna Lake, Stipoc, Caraorman and Sulina), Sărături-Murighiol, Popu-Beibugeac Lake, Sarinasuf, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). The habitats in which the species was observed are represented by: shallow water in farms, banks of lakes, marshes, ponds, the banks of the Danube Delta channels, ridges, artificial basins, abandoned fish farms, swamps and lakes with brackish or salted water, salt marsh areas and the shore of the Black Sea. In Dobrogea the breeding areas of this species are more numerous, the species

nesting in Letea, Caraorman and Stipoc, Sărături-Murighiol, Plopu-Beibugeac Lake, Lupilor Sandbank, Istria and Chituc Sandbank.

- Spotted Redshank – *Tringa erythropus* (Pallas, 1764)

In Moldavia the species is frequently during the passage period (Papadopol, 1966; Ion & Gache, 1992-1993; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010). We observed it in the following areas: Galați County –Oancea and Rădeanu Fish Farms, Șovârca Lake, Tălăbasca Lake and Brateș Lake; Vaslui County – Cârja Fish Farm, Mânjești Lake, Solești Lake, Pușcași Lake, Cuibul Vulturilor Lake and Râpa Albastră Lake; Iași County – Larga Jijia, Vlădeni, Gorban and Tigănași Fish Farms, Podu Iloaiei Lake, Hălțeni Lake, Plopi Lake, Tansa Lake, Iezăreni Lake, Gurguiata Lake, Ciobârciu Wetland and Miletin Swamp; Suceava County - Fălticeni Lakes, Rogojești Lake, Bucecea Lake; Botoșani County - Mileanca Lake, Dracșani Lake, Hudești Lake, Iezăr-Dorohoi Lake, Ibăneasa Ponds, Ichimeni Lake and Stânca Costești Lake.

In Dobrogea the species is common during the migration period (Papadopol, 1966; Ion *et al.*, 1998-1999; Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Doroșencu *et al.*, 2004; Ion & Pocora, 2005; Pocora, 2007; Munteanu, 2006). We observed it in numerous places in Dobrogea, such as: the Danube Delta, in all the counted areas (very high density of this species we find on Stipoc Sandbank in May), Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Sabangia, Cape Iancina, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). We met the species in numerous types of habitats, such as: shallow areas of farms, swamp banks of lakes, marshes, ponds, lakes, artificial dam lakes, bank of the Danube Delta canals, on the shores of lakes, but also on the vegetation in the middle of the lakes, ponds and brackish or salt water lakes, on the rocky banks of the lagoons, in artificial ponds and flooded meadows with salt marsh vegetation. Sometimes the flocks observed during the passage are very big. The largest compact group was observed in the area of the Stipoc Fish Farm (in Danube Delta), in May 2008, around 1,000 birds. It does not breed in Romania.

- Greenshank – *Tringa nebularia* (Gunnerus, 1767)

In Moldavia it is a relatively common species (Papadopol, 1966; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010, Feneru, 2002), during the migration periods. We met the species in many counties: Galați – Tălăbasca Lake and Brateș Lake, Rădeanu Fish Farm; Vaslui - Solești Lake and Cârja Fish Farm; Iași - Larga Jijia and Vlădeni Fish Farms, Siret-Paşcani Meadow, Hălțeni Lake, Podu Iloaiei Lake, Ciobârciu and Vânători Wetlands; Suceava – Fălticeni Lakes; Botoșani –Iezăr Lake, Hudești Lake and Ichimeni Ponds. In Dobrogea the species is frequent during passage (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Doroșencu *et al.*, 2004; Ion & Pocora, 2005; Munteanu, 2006; Pocora, 2007). We observed the species in all the counted areas in the Danube Delta, but also on Ciuperca Lake, Zaghen Lake, Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Lupilor Sandbank, Istria, Chituc Sandbank (Vadu) and Dobrogei Gorge. The species was observed in fish farms with shallow water, on shores of lakes, swamps, artificial dam lakes, banks of the Danube Delta canals, sand dunes, salt areas, salt or brackish water in artificial basins.

- Marsh Sandpiper – *Tringa stagnatilis* (Bechstein, 1803)

In Moldavia it is a species with frequent appearances, especially during the passage (Papadopol, 1966; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004;

Ignat & Ion, 2010). We observed it in the following places: Vaslui County – Râpa Albastră Lake; Iași County – Hălțeni Lake, Podu Iloaiei Lake, Ciobârciu Wetland; Suceava County - Fălticeni Lakes. In Dobrogea the species is more frequent than in the rest of the country (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Ion & Pocora, 2005; Pocora, 2007; Munteanu, 2006). We observed it in the Danube Delta (Fortuna, Stipoc, Maliuc Fish Farm, Letea, Caraorman and Sulina), Zaghen Lake, Ciuperca Lake, Sărături-Murighiol, Popu-Beibugeac Lake, Sarinasuf, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). The species was observed on the swamp shores of lakes, swamps, fish farms, the banks of sandy canals, in the marshes near the sea, brackish or salt water pools, flooded meadows and artificial ponds.

We did not observe the species breeding in the counted areas, although we repeatedly find them during the breeding season (May-June). During the passage the flocks observed were of even 200 individuals per area, aspect which mentioned also by Weber, 2000.

- Black-tailed Godwit – *Limosa limosa* (Linnaeus, 1758)

In Moldavia it is a very widely spread species (Papadopol, 1966; Ion & Gache, 1992-1993; Ion, 1991; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller, 2005,a,b; Kiss & Marinov, 2005; Müller & Gache, 2006; Ignat & Ion, 2010). We identified it in: Galați County - Tălăbasca Lake and Brateș Lake, Rădeanu Fish Farm; Vaslui County – Cârja-Mața-Rădeanu Fish Farms, Solești Lake; Iași County – Larga Jijija and Vlădeni Fish Farms, Hălțeni Lake, Podu Iloaiei Lake, Miletin Swamp, Ciobârciu Wetland, Plopi Lake; Botoșani County - Bucecea Lake, Ibăneasa Ponds, Iezăr-Dorohoi Lake, Hudești Lake, Dracșani Lake; Suceava County –Rogojești Lake, Fălticeni Lakes. The species is widely spread in Dobrogea also (Papadopol, 1966; Ciochia, 1992; Ion *et al.*, 1998-1999; Schmitz *et al.*, 1999; Weber, 2000; Ion & Pocora, 2005; Munteanu, 2006; Pocora, 2007; Papp & Fântână, 2008). We observed it on all the routes in the Danube Delta, Zaghen Lake, Sărături-Murighiol, Popu-Beibugeac Lake, Sarinasuf, Sabangia, Cape Iancina, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). We observed the species in a very wide variety of habitats which consists of: shallow areas, fish farms, on the banks of lakes, swamps, on the banks of canals from Danube Delta and even on the vegetation in the middle of the lakes, brackish water ponds, flooded salt meadows and artificial ponds. We did not meet the species breeding in the study area. During the passages of this species, we observed very large flocks of up to 1,200 birds (the Marshes of Miletin, 27.03.2009) or of even 5,000 birds (Sarinasuf, 19.03.2011).

- Bar-tailed Godwit – *Limosa lapponica* (Linnaeus, 1758)

In Moldavia the species has very rare appearances (Papadopol, 1966, Müller, 2004, Müller & Gache, 2006), but we did not observe it in the counted areas. In Dobrogea the species presents more frequent appearances, but we did not register a regularity of the observations (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Munteanu, 2006). We saw it only in the area of Vadu Ponds (31.04.2010).

- Curlew – *Numenius arquata* (Linnaeus, 1758)

In Moldavia it is a common species, especially during the passage period (Papadopol, 1966; Ion & Gache, 1992-1993; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010). During our study we encountered the species in numerous areas in the counties of: Galați – Vlădești-Oancea, Rădeanu Fish Farms, Brateș Lake and Tălăbasca Lake; Vaslui: Cârja Fish Farm and Solești Lake; Iași: Larga Jijija, Vlădeni and Țigănași Fish Farm, Hălțeni Lake, Podu

Iloaiei Lake, Ciobârciu Wetland; Suceava: Fălticeni Lakes; Botoșani: Iezăr-Dorohoi Lake, Mileanca Lake and Ichimeni Pond; Bacău: Răcăciuni Lake, Bacău Lake and Lilieci Lake. In Dobrogea the species is very widely spread, being also one of the regions in which it breeds (Papadopol, 1966; Ciochia, 1992; Ion *et al.*, 1998-1999; Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Ion & Pocora, 2005; Pocora, 2007; Munteanu, 2006). We saw it in the Danube Delta (Maliuc Fish Farm, Fortuna Lake, Stipoc, Caraorman, Letea and Sulina), Sărături-Murighiol, Popu-Beibugeac Lake, Sarinasuf, Cape Iancina, Ceamurlia de Jos, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu), in habitats such as: fish farms, shores of the lakes, swamps, meadows, on the edge of the lakes, sand dunes and the banks of the Danube Delta canals, brackish and salt ponds and lakes, salt meadows, artificial ponds and sandy beaches of the Black Sea. In Romania the population was estimated to 10-20 breeding pairs, with a high density in the meadows around Razelm-Sinoe lagoon complex (Munteanu *et al.*, 2002).

- Whimbrel – *Numenius phaeopus* (Linnaeus, 1758)

In Moldavia the species is mentioned as present during the passage only in some years (Papadopol, 1966). But our observations confirm the regular presence of the species, but in a small number of birds, especially in two places in the county of Iași: Hălțeni Lake and Podu Iloaiei Lake. In Dobrogea the species is more frequent (Schmitz *et al.*, 1999; Weber, 2000; Munteanu, 2006). We met on Letea Sandbank, Lupilor Sandbank, Istria and Chituc Sandbank (Vadu). The species was observed on small lakes with oozy substrate, on the sandy hills in Letea, in areas with Plover vegetation and on the shore of the Black Sea. Being a passage species, there is not a breeding population in Romania and the flocks that cross our country during migrating are small (Weber, 2000). The largest group observed in Moldavia was of 15 birds, on Hălțeni Lake – Iași County. In Dobrogea hundreds of birds can be seen.

- Snipe – *Gallinago gallinago* (Linnaeus, 1758)

In Moldavia it is a frequently species (Papadopol, 1966; Ion & Gache, 1992-1993; Gache, 2002, 2010; Müller, 2004; Ignat & Ion, 2010). We observed it in: Galați County - Brateș Lake, and Tălăbasca Lake, Oancea Fish Farm; Vaslui County - Cârja Fish Farm, Mânjești Lake, Solești Lake and Râpa Albastră Lake; Iași County - Larga Jijija and Vlădeni Fish Farms, Hălțeni Lake, Podu Iloaiei Lake, Tansa Lake, Plopi Lake, Gurguiata Lake, Ciobârciu Wetland and Miletin Marshes; Suceava County – Sucevița Meadow and Fălticeni Lakes; Botoșani County – Mileanca Lake, Iezăr-Dorohoi Lake, Negreni Lake and Havârna Lake.

In Dobrogea it is a common species (Papadopol, 1966; Ciochia, 1992; Schmitz *et al.*, 1999; Weber, 2000; Török, 2004; Munteanu, 2006). We observed in almost all over Danube Delta, at Bididia Hill, Zaghen Lake, Dunărea Veche canals, Sărături-Murighiol, Popu-Beibugeac Lake, Sarinasuf, Sabangia, Enisala, Cape Iancina, Caraburum (Capul Negru), Lupilor Sandbank, Istria, Chituc Sandbank (Vadu) and Techirghiol Lake. The species can be observed in many types of habitats such as: shallow areas of farms, swamps, shores of lakes with vegetation or oozy, dam artificial lakes, shores of the lakes and canals from Danube Delta, Letea Forest, the banks of brackish water ponds with salt water and salt meadows. The species was observed especially during the passage, being identified up to 80 birds per counted area (Hălțeni Lake), in Moldavia. In Dobrogea hundreds of birds can be seen. It does not breed in the study area.

- Jack Snipe – *Lymnocyptes minimus* (Brünic, 1764)

In Moldavia it is mentioned as a very rare species (Papadopol, 1966; Gache,

2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010). The observations made in the last years confirm the regular appearances of the species, but in small numbers of birds. Jack Snipe was observed in Iași County: Larga Jijiei Fish Farm, Hălțeni Lake, Ciobârciu Wetland, Podu Iloaiei Lake, Fălțiceni Lakes.

In Dobrogea the species is frequently met (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Munteanu, 2006). We saw it only in Letea, although we are convinced that it is present in many places and its camouflage makes it difficult to be observed.

The specimens we observed are migratory birds and in general the numbers are small, but there were also areas in which we observed 17 or 32 birds (Hălțeni Lake, respectively the Larga Jijiei Fish Farm).

- Red-necked Phalarope – *Phalaropus lobatus* (Linnaeus, 1758)

In Moldavia the species was not signalled until now. In Dobrogea it has frequent appearances during the passage period (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Török, 2004; Munteanu, 2006; Pocora, 2007). We identified it in the artificial ponds from Vadu and in the southern path of Sinoe Lake. In Romania, during the passage, the species does not present large flocks, comparing to other wader species. The highest number recorded being up to 70 birds in one group, on Lake Sinoe, on 28.04.2004.

- Ruff – *Philomachus pugnax* (Linnaeus, 1758)

In Moldavia the species is common, especially during the passage (Papadopol, 1966; Ion, 1991; Gache & Ion, 1998-1999; Gache, 2002, 2010; Müller, 2004; Müller & Gache, 2006; Ignat & Ion, 2010). We observed it in the following counties: Galați - Brateș Lake, Tălăbasca Lake, Șovârca Lake and Rădeanu Fish Farm; Vaslui –Cârja-Mața Fish Farm, Pușcași Lake and Râpa Albastră Lake, Solșeti Lake, Mânjești Lake, Cuibul Vulturilor Lake; Iași – Larga Jijia, Vlădeni and Gorban Fish Farm, Hălțeni Lake, Podu Iloaiei Lake and Miletin Swamp, Tansa Lake, Plopi Lake; Suceava - Fălțiceni Lakes, Rogojești Lake and Bucecea Lake; Botoșani - Iezăr-Dorohoi Lake, Stâncea Costești Lake, Hudești Lake and Ibăneasa Ponds.

In Dobrogea it is one of the common species of wader birds during the passage period (Papadopol, 1966; Schmitz *et al.*, 1999; Weber, 2000; Doroșencu *et al.*, 2004; Török, 2004; Pocora, 2007; Ion & Pocora, 2005; Munteanu, 2006). We observed it in most of the observation places from Danube Delta, Zaghen Lake, Sărături-Murighiol, Plopu-Beibugeac Lake, Sarinasuf, Sabangia, Enisala, Cape Iancina, Lupilor Sandbank, Istria, Chituc Sandbank (Vadu). The species was observed in a very wide variety of habitats, such as: small water pool farms, swamp banks of lakes, marshes, ponds, marine banks, banks of canals and vegetation in the middle of the lakes of the Danube Delta, ponds near the sea, lakes and brackish or salt water, swamp areas, salt flooded meadows. The birds of the species we observed are passage birds, which can present very large flocks. The largest flocks were observed in the Sarinasuf Wetland (Tulcea County), 700 birds and in the area of Hălțeni Lake (Iași County), around 2000 birds.

Our study brings a new series of data about the breeding of some species: Avocet, Black-Winged Stilt, Stone Curlew, Little Ringed Plover, Kentish Plover, Lapwing, White-tailed Lapwing, Common Sandpiper, Redshank and Curlew. Compared to the data offered in literature, we present new distribution sites during the passage period, the respective areas being important for the protection of wader birds.

There are wader birds signalled in old literature, for which we and the actual literature (from the last 10 years) could not confirm the presence in the study area:

*Phalaropus fulicarius* (Red Phalarope), *Calidris melanotos* (Pectoral Sandpiper), *Numenius tenuirostris* (Slender-billed Curlew), *Glareola nordmanni* (Black-winged Pratincole) is rarely observed in Dobrogea, in migration (Munteanu, 2009).

There is one species, Dotterel (*Charadrius morinellus*) which was observed in 2007 on Letea Sandbank (one juvenile on 11 April 2007, Pârvulescu & Molnar, 2008), but we do not have any information about this species in Eastern Romania.

However, in the case of the species Red Phalarope we must specify that we observed them outside the study area of the present paper, in Măxineni, in the basin of Siret (Brăila County).

### Conclusions

We identified 28 species of wader birds in the area of Moldavia: Avocet, Black-winged Stilt, Stone Curlew, Little Ringed Plover, Ringed Plover, Grey Plover, Golden Plover, Lapwing, Sanderling, Turnstone, Dunlin, Curlew Sandpiper, Broad-billed Sandpiper, Temminck's Stint, Little Stint, Wood Sandpiper, Green Sandpiper, Common Sandpiper, Redshank, Spotted Redshank, Greenshank, Marsh Sandpiper, Black-tailed Godwit, Curlew, Whimbrel, Snipe, Jack Snipe, Ruff. Thus, the region of Moldavia, thanks to the appropriate habitats and the trophic resources, represents an important breeding, feeding and resting area for the wader bird species.

In Dobrogea the number of wader bird species is higher than in Moldavian Region (38 species), but here the favourable habitats are much larger: Oystercatcher, Avocet, Black-winged Stilt, Stone Curlew, Collared Pratincole, Little Ringed Plover, Ringed Plover, Kentish Plover, Grey Plover, Golden Plover, Lapwing, Spur-winged Lapwing, White-tailed Lapwing, Knot, Sanderling, Turnstone, Dunlin, Curlew Sandpiper, Broad-billed Sandpiper, Temminck's Stint, Little Stint, Wood Sandpiper, Green Sandpiper, Common Sandpiper, Terek Sandpiper, Redshank, Spotted Redshank, Greenshank, Marsh Sandpiper, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Whimbrel, Snipe, Jack Snipe, Red-necked Phalarope, Ruff.

The area of Dobrogea is very important for the reproduction, breeding, feeding and resting of the wader bird species, given the vast areas with little water.

### Acknowledgements

This work was supported by CNCSIS-UEFISCSU, Project PN II – IDEI 1985/2008.

We wish to thank Daniel Petrescu, Eugen Petrescu, Alina Ignat, Cătălin Crețu, Lucian Bolboacă, Viorel Pocora for their valuable assistance during fieldwork.

### References

- Ciochia, V., 1992. *Păsările clocitoare din România*. Ed. Științifică, București, 117-156.
- Doroșencu, A., Pocora, V., Ion, C., 2004. Considerations concerning avifaunistic observations and rings make at Fortuna-Maliuc and Vadu (Danube Delta Biosphere Reservation). *Scientific Annals of University "Al. I. Cuza" Iași, Animal Biology*, **XL**: 293-302.
- Feneru F., 2002. *Studiul avifaunei acvatice din bazinul mijlociu al Siretului*. Ph.D. Thesis, Faculty of Biology, "Al. I. Cuza" University of Iași (Romania), 55-175.
- Gache, C., 2002. *Dinamica avifaunei în bazinul râului Prut*. Publ. S.O.R., 15, Edit. Risoprint, Cluj- Napoca; 39-42; 61-144.
- Gache, C., 2010. Bird fauna long-term monitoring in the Romanian Lower Prut River Basin. *Travaux du Muséum National d'Histoire Naturelle „Grigore Antipa”*, **LIII**: 287-302.
- Gache, C., Ion, I., 1998-1999. Observations sur l'avifauna de zone humide Cârja-Vaslui. *Scientific Annals of University "Al. I. Cuza" Iași, Animal Biology*, **XLIV-VLV**: 193-201.
- Hagemeijer, E.J.M., Blair, M.J., (ed.) 1997. *The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance*. T & A D Poyser, London, 246-319.
- Ignat, A.E., Ion, C., 2010. The actual status of the avifauna from Cârja-Mața-Rădeanu Ponds. *Scientific Annals of University "Al. I. Cuza" Iași, Animal Biology*, **LVI**: 157-172.



- Ion, C., Pocora, V., 2005. The composition of the avifauna on the Lupilor Ground in the migratory period. *Scientific Annals of University "Al. I. Cuza" Iași, Animal Biology*, **LI**: 205-217.
- Ion, I., 1991. Glimpses of ornithofauna from Prut Valley. *Scientific Annals of University "Al. I. Cuza" Iași, Animal Biology*, **XXXVII**: 241- 243.
- Ion, I., Gache, C., 1992-1993. Observations sur la dispersion zonale de l'avifaune du bassin de la riviere Prut. *Scientific Annals of University "Al. I. Cuza" Iași, Animal Biology*, **XXXVIII**: 163- 166.
- Ion, I., Gache, C., Glăvan, T., Trelea, S., Zamfirescu, Șt., 1998-1999. Summer ornithological excursion in Dobrogea. *Scientific Annals of University "Al. I. Cuza" Iași, Animal Biology*, **XLIV-XLV**: 207-211.
- Kiss J.B., Marinov M., Alexe V., 2008. Preliminary data on the ornithological fauna of the islet froming in the south part of Musura Gulf, between Stambulul Vechi (Ukraine) and Sulina (Romania) branches of the Danube, *Scientific Annals of DDI, Tulcea*, **14**: 31-36.
- Kiss, J.B., Marinov, M., 2005. The first recording of Black-tailed Godwit (*Limosa L.*) nesting in Romania to the South of Carpathians. *Scientific Annals of DDI, Tulcea*, **11**: 39-41.
- Kiss, J.B., Szabo, L., 2000. First breeding record of White-tailed Lapwing in Romania (and Europe outside Russia). *Brit. Birds*, **93 (8)**: 400-401.
- Müller, J.W., 2004. Cercetări privind ecologia și etologia unor păsări limicole (Subord. Charadrii din bazinul românesc al Prutului). Ph.D. Thesis, Facultatea de Biologie, "Al. I. Cuza" University of Iași (Romania).
- Müller, J.W., 2005a. Specii de păsări limicole clocitoare în bazinul Prutului. *Oltenia. Studii și Comunicări. Științele Naturii, Muzeul Olteniei, Craiova*, **21**: 178-180.
- Müller, J.W., 2005b. *Limosa limosa* the first breeding in the Prut river basin (Romania). *Scientific Annals of DDI, Tulcea*, **11**: 59-62.
- Müller, W.J., Gache, C., 2006. Aspects regarding the limicoline birds' migration in the IBA "Jijia and Miletin ponds" (Romania). *Scientific Annals of DDI*, **12**: 83-90.
- Munteanu, D., 2006 The Danube Delta avifauna. In: C. Tudorancea and M.M. Tudorancea [Eds], *Danube Delta. Genesis and Biodiversity*. Backhuys Publishers, Leiden, 367–398.
- Munteanu, D., 2009. *Păsările rare, vulnerabile și periclitata în România*, Ed. Alma Mater, Cluj-Napoca, 134-153.
- Munteanu, D., Papadopol, A., Weber, P., 2002. *Atlasul păsărilor clocitoare din România*, Publ. S.O.R., ediția II, Ed. Roprint, Cluj-Napoca.
- Papadopol, A., 1975. Contribution a la connaissance de l'avifaune du District Vaslui, *Travaux du Muséum National d'Histoire Naturelle „Grigore Antipa”*, Bucuresti, **XVI**: 249- 264.
- Papadopol, A., 1966. Les Charadriiformes de Roumanie. *Travaux du Muséum National d'Histoire Naturelle „Grigore Antipa”*, București, **IX**: 227-247.
- Papadopol, A., Mândru C., 1967. Contribuții la cunoașterea păsărilor (Aves) din regiunea Iași (partea I-a). *Com. de Zoologie*, **IV**: p. 89-126.
- Papp, T., Fântână, C., 2008. *Ariile de importanță avifaunistică din România*, publicație comună a Societății Ornitologice Române și a Asociației "Grupul Milvus", Târgul-Mureș.
- Părvulescu, L., Molnar, P., 2008. Mai avem prundăraș de munte?! *Migrans*, **X (3-4)**: 2-3.
- Paspaleva, M., Tălpeanu, M., 1979. Sur quelques oiseaux rares du Delta du Danube et du littoral roumain de la Mer Noire. *Travaux du Muséum National d'Histoire Naturelle „Grigore Antipa”*, **XX**: 451-453.
- Platteeuw, M., Kiss, B. J., Zhmud, Ze M., Sadoul, N., 2003. *Colonial waterbirds and their habitat use in the Danube Delta, as an example of a large-scale natural wetland*. Ministry of Transport, Public Works and Water Management Institute for Inland Water Management and Waste Water Treatment RIZA.
- Pocora, V., 2007. Data on the ornithofauna of Lacul Sărat – Grindul Letea (Danube Delta Biosphere Reserve). *Scientific Annals of DDI, Tulcea*, **13**: 83-88.
- Schmitz, M., Sudfeldt, C., Legge, H., Mantel, K., Weber, P., Marinov, M., 1999. Spring migration of waders in the Razim-Sinoie lagoon system south of the Danube Delta. *Wader Study Group Bull.*, **90**: 59-6.
- Török, Zs., 2004. Data on the actual status of lake Plopu-Beibugeac. *Scientific Annals of DDI, Tulcea*, **10**: 71-80.
- Weber, P., 2000. *Avifauna zonei Histria - Rezervația Biosferei Delta Dunării*, Ed. Aves, Cluj-Napoca.
- BirdLife International, Great Britain, 2011 (accessed 20.07.2011). Available from: [http://www.birdlife.org/news/news/2009/06/wader\\_atlas.html](http://www.birdlife.org/news/news/2009/06/wader_atlas.html)
- Daniel Petrescu site, 2011 (accessed at 20.07.2011). Available from: <http://danielpetrescu.ro/2010/01/02/common-buzzard-buteo-albino>
- Milvus Group, Romania, 2011 (accessed at 20.07.2011). Available from: <http://www.milvus.ro/images/PDF/Checklist%20of%20the%20Birds%20of%20Romania.pdf>