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OPPORTUNITIES FOR NEW RAMSAR SITES: EXPERIENCES OF A TERRITORIALY SMALL COUNTRY

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ABSTRACT

Rivers and their riparian systems play an extremely important role as eco-corridors by providing a network of interconnected habitats. The idea is to designate as Ramsar Sites clusters of small wetlands within catchments, to ensure that the hydrological conditions needed to sustain the ecological character of each of these wetlands are maintained. Another opportunity for including wetlands on the Ramsar List is provided by man-made water reservoirs. While evaluating such reservoirs for inclusion on the Ramsar List, the river sections between the reservoirs should be considered as they are important daily or seasonal corridors for waterfowl, and they provide feeding and breeding habitats for waterfowl.

Key words: wetlands, river corridors, reservoirs, Ramsar Convention, nature conservation, Slovenia

OPPORTUNITÀ PER NUOVE ZONE RAMSAR: ESPERIENZE DI UNA TERRITORIALMENTE PICCOLA NAZIONE

SINTESI

Nell'articolo vengono discusse due possibilità di includere ambienti umidi nella Lista delle zone umide d'importanza internazionale. I fiumi e i loro sistemi rivieraschi ricoprono l'estremamente importante ruolo di eco-corridoi, fornendo una rete di habitat interconnessi. L'autore presenta l'idea di designare come zone Ramsar gruppi di piccole aree umide all'interno di bacini di raccolta, al fine di assicurare che le condizioni idrologiche necessarie a sostenere il carattere ecologico di ciascuna di esse vengano mantenute. Un'altra opportunità di includere ambienti umidi nella Lista Ramsar è fornita dai bacini di riserva acquiferi artificiali. Nella valutazione di tali serbatoi, al fine di includerli nella Lista Ramsar, i tratti di fiume compresi tra di essi dovrebbero venir presi in considerazione in quanto importanti corridoi giornalieri o stagionali per gli uccelli acquatici, fungenti da siti di riproduzione e di alimentazione per tali volatili.

Parole chiave: zone umide, corridoi fluviali, bacini di riserva, Convenzione di Ramsar, tutela dell'ambiente, Slovenia

INTRODUCTION

The first obligation of any Contracting Party to the Ramsar Convention is the designation of at least one wetland for inclusion on the List of Wetlands of International Importance. Consequently, the contracting party is obliged to maintain the ecological character of this site. The designating of a site for inclusion on the Ramsar List is not only an obligation, it is also a great privilege. The Ramsar Convention recognizes all wetlands as valuable although, some are more important to conserve than others. Article 2.2 of the Convention states that only internationally significant wetlands in terms of ecology, botany, zoology, limnology or hydrology should be selected for the List. A wetland is identified as internationally important if it meets at least one of the Ramsar criteria given below (Hails, 1996; Ramsar Convention Bureau, 1997):

- a) Criteria for representative or unique wetlands;
- b) General criteria based on plants or animals;
- c) Specific criteria based on waterfowl;
- d) Specific criteria based on fish.

The criteria in group (c) are based on "measurable tools" for identification of internationally important wetlands. Following the principles for waterfowl for example, a wetland is considered internationally important if it regularly supports 20,000 individuals, or 1% of the biogeographical population of certain species or sub-species of waterfowl. These measures are considered the most objective, and thus enable inclusion of wetlands on the Ramsar List. Paragraph 10, of the Brisbane Conference of Parties (COP) Resolution VI.4, calls upon Contracting Parties to use waterfowl population estimates, and 1% thresholds as a basis for site designation in the succeeding triennia (Ramsar Convention Bureau, 1996). Although these are the most objective criteria, measures based on population estimates and 1% thresholds are often difficult to apply. This fact is particularly relevant for territorially small countries.

It is difficult to imagine that a small country such as Slovenia, with a surface area of 20,000 km² (an area comparable to the Parapol Valley Ramsar Site in the Russian Federation), where wetlands represent less than 1,000 km² (approximately 4% of the territory) could hold 1% of the Eastern European population of one waterfowl species. Consequently, meeting the aforementioned population criteria in a country where the surface area of the two largest water bodies does not exceed 3.6 km² each, and where natural wetlands comprise only 20 km² is difficult, if not impossible. Furthermore, the surface area of the Republic of Slovenia is less than 1% of the whole biogeographical region.

Although other norms for the designation of Wetlands of International Importance are equally important

and relevant, the above criteria are mainly used to illustrate the importance of protecting wetlands at the national level, and to stimulate the consideration of new possibilities for the designation of Ramsar sites. However, the ultimate goal for a country should not be to merely include as many wetlands as possible in the Ramsar list. Every wetland, whether on the Ramsar List or not, is important for the conservation of a country's biodiversity. There are numerous ways to conserve wetland values.

WETLANDS OF INTERNATIONAL IMPORTANCE: OPPORTUNITIES FOR DESIGNATION

As previously mentioned, all standards for the designation of Wetlands of International Importance are equally important and relevant. Following the Ramsar criteria, two proposals for the inclusion of wetlands to the Ramsar List in a territorially small country will be presented and illustrated in the following two case studies (Figs. 1, 3).

Case Study 1: Wetland clusters in the Lower Posavje Region, and in the lowlands of the Sava, Krka and Sotla rivers

In recent years, several ornithological surveys have been carried out in the middle reaches of the Sava River, and at the confluences of its tributaries, the Krka and Sotla rivers in Eastern Slovenia. Survey results indicate that the area, known as the Lower Posavje region, can be considered as one of the most important wetlands in Slovenia. Although various human interventions, notorious irrigation schemes in particular, have reduced the surface area of the former wetland to narrow but well preserved strips along the three rivers. Greatly reduced, the wetlands today consist of a flood-

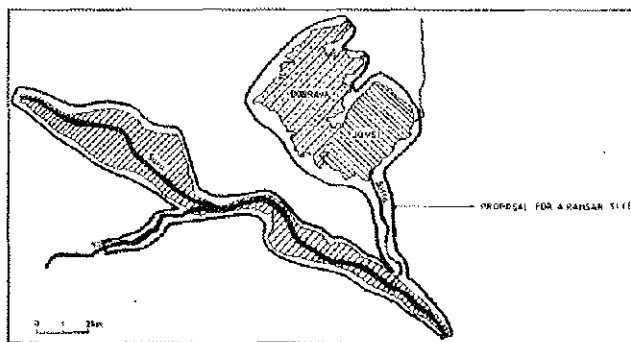


Fig. 1: Position of the proposed cluster of wetlands along the Sava river (Jovsi, Dobrava, Vrbina) and proposed boundaries for a cluster Ramsar Site.

Sl. 1: Lega predlagane skupinice mokrišč vzdolž Save (Jovsi, Dobrava, Vrbina) in meje predlagane ramsarske lokalitete.

plain of oak forest (Dobrava) and a relatively extensive alluvial plain that includes wet grasslands (Jovsi), the Vrbina forest and gravel pits. Each locality covers an area of about 5 km².

Jovsi is the only one of the three wetlands protected at the national level. It is designated as a nature reserve, corresponding to IUCN protected area management category IV. Currently, none of the three areas have international protection status. The Dobrava and Vrbina forests may have difficulties qualifying under any of the Ramsar criteria. The Dobrava forest, for example, is one of the two last floodplain forests in this part of Slovenia, but smaller, less representative and supporting fewer rare, vulnerable, or endangered species than the nearby Krakovski gozd (Fig. 2).

All three areas need protection at the national level. Moreover, all of them require at least some management activities to maintain their current ecological character. The questions therefore are:

Would it be feasible to propose designation of a cluster of the three wetlands as one Ramsar site and,

Can such a cluster of wetlands meet any of the Ramsar Criteria?

All the above mentioned wetlands are within the same catchment. Without considering a larger part of the watershed the ecological character of individual sites will be difficult to preserve. Designating a Ramsar site over a larger territory than covered by the individual wetlands could provide a useful instrument for prevention of major threats to the hydrological regime of the catchment (*i.e.* changes in groundwater flows). Additionally, designation of a nature reserve would prevent direct negative activities such as drainage.

The conservation value of a cluster of wetlands along the three rivers can be regarded as an important eco-corridor, a unique unit consisting of different ecosystems. The cluster of wetlands can easily comply with Ramsar criteria based on representative or unique wetlands and general criteria based on plants or animals, whereas the separate areas would not. By summing up the numbers of waterfowl present at the site during migration or wintering periods, the area comes close to meeting the specific waterfowl measures.

In this context, it is particularly important to underline the conservation value of several small gravel pits scattered throughout the floodplain. These areas are used as breeding and feeding areas for several bird species. The gravel pits in the Vrbina forest comprise one of the most important breeding areas for Sand Martins (*Riparia riparia*) in Slovenia. Moreover, (in our country) the only natural breeding sites of this species are preserved along the Sava River and within the cluster area under consideration. Cumulative numbers of migratory and wintering waterfowl, especially grebes (Podicipedidae), cormorants (Phalacrocoracidae), herons (Ardeidae), ducks (Anatidae) and waders are extremely high in this area.



Fig. 2: Krakovski gozd is a part of the proposed cluster Ramsar site along the confluence of the Sava, Krka and Sotla Rivers. (Photo: A. Sovinc)

Sl. 2: Krakovski gozd je sestavni del predlaganega območja za Ramsarsko lokaliteto ob sotočju Save, Krke in Sotle. (Foto: A. Sovinc)

To conclude: although Ramsar designation is not a protected area management category (meaning it does not require special management prescriptions), it can provide an effective general protection for a cluster of separate wetlands in the same catchment area. Such a cluster can also comply with the Ramsar criteria for designation of the Wetlands of International Importance. A cluster of wetlands can link different ecosystems as well as similar habitat types scattered over a large area. A good example of the benefits of cluster designation is illustrated by the group of gravel pits discussed above, which have proven to be extremely important wetland habitats, despite their artificial origin.

Case study 2: Proposal for extension of the Ramsar site to the river section in-between the two separate wetlands: the Drava River between the Ptuj and Ormož reservoirs

The Drava is the largest river in Slovenia. Sadly, due to numerous past interventions, the river and its floodplain are ranked as one of the most degraded watercourses in the country. Since beginning of the 20th century, several hydroelectric power plants have been constructed on the river. The large reservoirs associated with the power plants, their channels and canals, have destroyed the rich riverine ecosystems. Important breeding areas of waterfowl species, such as the globally endangered Ferruginous Duck (*Aythya nyroca*), the last breeding pairs of Stone-Curlews (*Burhinus oedipnes*) in Slovenia and one of the few breeding colonies of Little Terns (*Sterna albirostris*) were once found in the riparian zone. It is controversial that the main factor contributing to the extinction of the above mentioned endangered species, are the large reservoirs which usurp the natural floodplains. It is these same reservoirs that have become the most important areas for migratory and wintering waterfowl in Slovenia (Fig. 4).

During migration, the high turnover of certain waterfowl species is very impressive. Up to 10,000 Black Terns (*Chlidonias niger*) and up to 100 Ospreys (*Pandion haliaetus*) can be observed on the reservoirs during spring migration (Štumberger, 1995). Up to 167 Honey Buzzards (*Pernis apivorus*) were counted in a few hours during one such migration (Božič, 1992). The international importance of the Drava River and its major reservoirs is especially remarkable during the wintering period. Bean and White-Fronted Geese (*Anser fabalis*, *A. albirostris*), Mallards (*Anas platyrhynchos*), Tufted Ducks (*Aythya fuligula*), Goldeneyes (*Bucephala clangula*) and Goosanders (*Mergus merganser*) reach or very nearly reach the 1% thresholds of their bioregional wintering

populations (Sovinc, 1994; Štumberger, 1995). The vast majority of these birds have been counted on the two major reservoirs at Ptuj and at Ormož.

Despite the extraordinarily high numbers of wintering waterfowl on these two reservoirs, the conservation value of the river section between them has somehow been neglected. Detailed ornithological surveys carried out in recent years (Štumberger, 1995; Bračko, 1997) have pointed out the importance of the floodplain area between the two reservoirs, especially as breeding habitat for certain species. Between 1980 and 1996, out of 234 species recorded, 88 were breeding in this area (Bračko, 1997). It is also one of the very few breeding areas for species such as the Black-Headed Gull (*Larus ridibundus*), and the Common Tern (*Sterna hirundo*) in Slovenia. The following birds are among the species reaching more than 10% of the national breeding population: Little Grebe (*Tachybaptus ruficollis*), Tufted Duck (*Aythya fuligula*), Little Ringed Plover (*Charadrius dubius*), Common Sandpiper (*Actitis hypoleucos*) (Štumberger, 1995).

Due to steep concrete banks and deep water, large reservoirs provide very limited breeding opportunities for waterfowl. This situation could be effectively improved by the construction of artificial islands and shallow water areas.

The river reach between the Ptuj and Ormož reservoirs, plays an important role as a breeding area for waterfowl and other animal species. As a daily and seasonal corridor, and a feeding area for the birds, it is of extremely high ecological value. It has kept this function in spite of the fact that human activities and interventions (e.g. lowering of the ground water tables and extraction of water for hydropower needs) have badly damaged the riverine ecosystems.

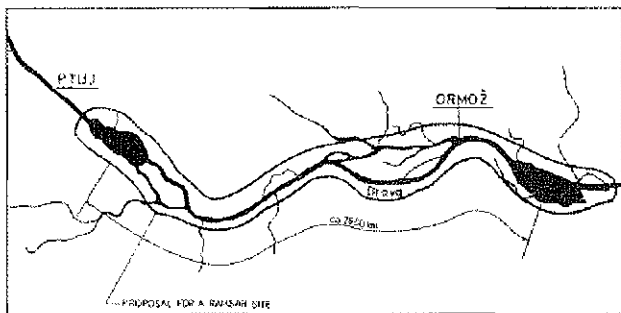


Fig. 3: Extension of the boundaries for the proposed Ramsar Site to the river section between the two major reservoirs (Ptuj and Ormož lakes) on the Drava river.
 Sl. 3: Podaljšanje meja predlagane ramsarske lokalitete do rečnega odseka med dvema glavnima akumulacijskima jezeroma (Ptujskim in Ormoškim) na reki Dravi.



Fig. 4: Along the former river bed of the Drava River between Ptuj and Ormož reservoirs remains of the oxbows are still present. (Photo: A. Sovinc)
 Sl. 4: Ob stari dravski strugi med akumulacijama Ptuj in Ormož še najdemo ostanke nekdanjih mrtvic. (Foto: A. Sovinc)

Presently, this reach of the Drava River has no protection at the national level. The area consists of highly urbanized and intensive agricultural lands. For this reason, it may be difficult to achieve protection of this section at the national level, since some restrictions in land use could be required. Therefore, the proposal to include this area adjacent to the river along with Ptuj and Ormož lakes to the Ramsar List could provide the minimum protection necessary to prevent further deterioration of the area.

CONCLUSIONS

A cluster of wetlands, often comprised of different wetland habitats in the same catchment area, can provide an excellent opportunity for small countries to include sites on Ramsar's List of Wetlands of International Importance. Using the cluster approach, we can extend the boundaries of proposed or existing 'point' Ramsar Sites on one river to intermediate river sections. This has been proposed for a reach of the Drava River between the two major reservoirs where waterfowl concentrate. Such river sections are important migration corridors

and provide feeding and breeding grounds for birds and other animal species. Clustering wetlands and designating artificial reservoirs could be interesting for countries with small territories and small, scattered wetlands seeking to designate sites to the Ramsar List.

Designation as a Ramsar Site provides the necessary protection for a cluster of wetlands or the narrow riparian ecosystems between separate, but protected reservoirs. Such a designation is especially important in cases where the protection of wetlands is difficult to achieve at the local level, because it would require new restrictions in land-use. It is often the case that protection at the national or lower levels is easier to achieve after a wetland has been recognized as an internationally important site.

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MOŽNOSTI ZA NOVE RAMSARSKÉ LOKALITETE: IZKUŠNJE OZEMELJSKO MAJHNE DRŽAVE

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POVZETEK

Ozemeljsko majhne države so pogosto omejene z možnostjo razglasitve novih mokrišč mednarodnega pomena po merilih Ramsarske konvencije, saj je zaradi manjše površine države manjše tudi število mokrišč. V prispevku sta prikazani dve možnosti za uvrščanje mokrišč na seznam mokrišč mednarodnega pomena, ki sta še posebej zanimivi za ozemeljsko majhne države pri pripravi seznama potencialnih novih ramsarskih lokalitet.

Rečni odseki in mokrišča vzdolž rek in potokov ponujajo možnosti za uporabo predlaganih možnosti. V okviru tipov mokrišč, ki jih vključuje Ramsarska konvencija, so tudi reke in obrečna mokrišča. To so izredno pomembni eko-koridorji, posamezna mokrišča pa tvorijo omrežje medsebojno povezanih habitatov in vmesnih postajališč. Pogosto posamezno takšno mokrišče ne izpolnjuje meril za razglasitev mednarodno pomembnega mokrišča, če pa je več manjših mokrišč povezanih v skupek, ustrezajo vsaj enemu izmed štirih skupin ramsarskih meril (merilo rastlinske in živalske diverzitetne, merilo ogroženih ali endemičnih vrst, ali merilo ptičjih ali ribjih populacij; Hails, 1996). Po tem predlogu naj bi podpirali razglasitev ramsarskih lokalitet, povezanih v skupke na skupnem povodju. S tem bi pripomogli tudi k celovitemu pristopu ohranjanja ekološkega značaja posameznih mokrišč v skupku.

Naslednji predlog za uvrščanje mokrišč na ramsarski seznam pa se kaže v razglasitvi umetnih rečnih akumulacij. Posamezne velike akumulacije že izpolnjujejo ramsarska merila glede na velikost populacije prezimujočih, golečih se ali selečih se vodnih ptic. V drugih primerih pa je izpolnitev teh meril možna le, če sta najmanj dve akumulaciji na isti reki obravnavani kot ena lokaliteta. Pri obravnavanju takih primerov je nujno treba upoštevati tudi vlogo, ki jo imajo rečni odseki med akumulacijami. To so namreč pomembni dnevni ali sezonski koridorji za vodne ptice. Še pomembnejša je njihova vloga prehranjevališča in gnezdišča za vodne ptice, saj ponavadi teh tipov habitatov ni na velikih akumulacijah z globoko vodo in strmimi brežinami. Predlagana ramsarska lokaliteta naj torej poleg vodne akumulacije vključuje še rečne odseke nad in pod akumulacijo.

Ključne besede: mokrišča, rečni koridorji, vodne akumulacije, Ramsarska konvencija, varstvo narave, Slovenija

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