

Oktober 2008

Annual Report 2008 **on the protected landscape area and nature reserve** **"Wollmatinger Ried - Untersee - Gnadensee" (Germany)**

Period under review:	1 October 2007 to 30 September 2008
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I. GENERAL INFORMATION

1. Natural heritage – conservation status

1.1 Environment

The average temperature in the year under review was 10.1°C making it 1.0°C above the long-term mean. January and February 2008 and also May und June 2008 were particularly warm. November 2007 and September 2008, however, were slightly below the comparative values.

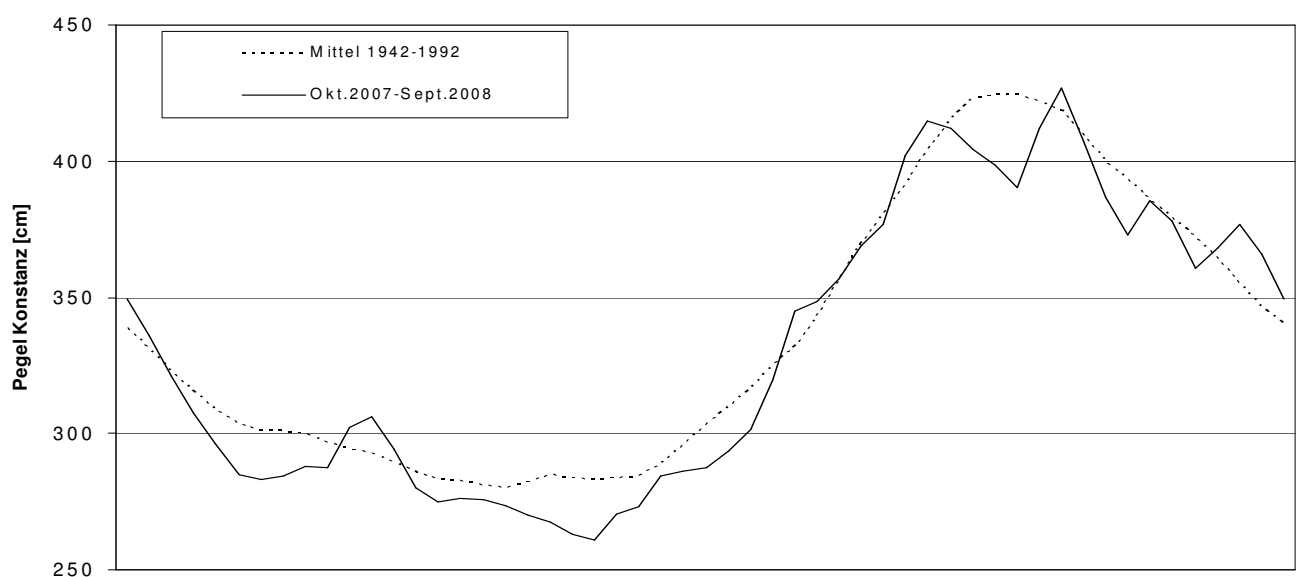


Fig. 1: Lake Constance water level (Konstanz harbour water mark) from 1 October 2007 to 30 September 2008 (continuous line) and mean values from 1942 to 1992 (dotted line)

The total annual rainfall in the period under review amounted to 676 mm and was 173 mm (20%) below the reference value. Only in April and to a lesser degree in August, the precipitations were above average. The months of October and November 2007 and May and June 2008 were extremely dry.

The level of water in Lake of Constance dropped quickly due to the light precipitation in autumn and was markedly below the comparative values until March 2008. Then the thaw together with abundant rainfall in April made the lake rise up to the long-year average values. This year's high water level of 429 cm was reached on 18 and 22 July 2008, i.e. again relatively late. Abundant rainfall in August and in the first half of September made up for the fall of the level in late summer. In spite of the repeated precipitation deficit, the level was in the range of the long-term mean, particularly in the vegetation period (see Fig. 1) so that at least the lower reed meadows were inundated.

1.2 Flora and vegetation

Most species of moor grass meadows (*Molinion*) demonstrated in comparison to the very good previous year a diminished, but still good bloom development. The **Siberian iris** (*Iris sibirica*) achieved a very high bloom density with 1,122 (07=835) specimens on the sample areas and thus the highest bloom density since it was established in 1998. The only stock of **hedge hyssop** (*Gratiola officinalis*) achieved with 10,050 (07=4,286) shoots the highest number since begin of the counting in 1972. The **marsh gladioli** (*Gladiolus palustris*) showed with 3,594 peduncles the highest value since the flooding of 1999. The **mouse garlic** (*Allium angulosum*) which was counted only on some partial areas achieved with 39,988 (07=70,063) buttons only average values. The **small meadow-rue** (*Thalictrum simplex ssp.galioides*) decreased further with 3,689 specimens counted (07=4,408) but was still in the range of the long-term mean value of 4,046 specimens. The stock of **bug orchid** (*Orchis coriophora*) fell to 4 blooming plants but was only slightly below the long-term mean value of 6 specimens. The **harvest bells** (*Gentiana pneumonanthe*) with 354 (07=846) blooming plants on the six permanently observed areas showed a poor bloom development.

The alkaline fen species (*Caricion davallianae*) demonstrated an unequal development: whereas the **lax-flowered marsh orchid** (*Orchis palustris*) with 90 specimens achieved again a new peak value, the **bladder gentian** (*Gentiana utriculosa*) could further increase its very good result of the previous year from 7,093 to 9,302 specimen, and the **bird's eye primula** (*Primula farinosa*) with 53,804 (07=56,607) specimens has been on a very high level since six years, the **marsh dandelion** (*Taraxacum palustre agg.*) with 3,830 (07=9,986) specimens is declining. The **summer ladies tresses** (*Spiranthes aestivalis*) could not continue its recovery with only 76 (07=89) specimen.

The species common to the mesobromion grasslands (*Mesobromion*) developed positively, apart from a few exceptions. New absolute peaks were achieved by the **burnt orchid** (*Orchis ustulata*) with 2,926 specimen, the **military orchid** (*Orchis militaris*) with 27 specimen, the **short-spurred fragrant orchid** (*Gymnadenia odoratissima*) with 3,216 specimen, the **fragrant orchid** (*G. conopsea*) with 7,998 specimen, and the **common globe daisy** (*Globularia punctata*) with 351 specimen. The best results since the flood of 1999 were demonstrated by the **green-winged orchid** (*Orchis morio*) with 78 specimen and the **common pulsatilla** (*Pulsatilla vulgaris*) with 2,306 specimen.

Bibershof beach meadow by Irene Strang

Unfortunately the result for the Bibershof beach meadow in 2008 is not as good as in the previous years. Although the stocks in the Southwest area developed well and expanded further, the stocks of **shore weed** (*Littorella uniflora*) and the **creeping spearwort** (*Ranunculus reptans*) in the northern part of the area have diminished markedly. This is due partially to the marked increase in the competing species **reed canarygrass** (*Phalaris arundinacea*), **slender tufted sedge** (*Carex acuta*) and in some cases **creeping bentgrass** (*Agrostis stolonifera*) and the slight erosion in the area of the barrier beach, but also to the increasing sedimentation in the area of the big sink. It is an open question in how far this is in causal connection with the excavation work in the Bruckgraben. Since the Biberhof terrain is very flat, a lot of sediment (sand and silt) remains behind the barrier beach so that the underlying beach meadows wither. On the other hand, the higher growing competitive species can often spread even more. Even two cuttings could hardly prevent a further expansion of the reed canarygrass and the **slender sedge and tufted sedge** (*Carex elata*).

A positive effect was a „normal“ flood in 2008 after five relative low floods (2003-2007) which prevented that the competitive species could spread further in the direction of the lake.

Since 2006, the **various-leaved pondweed** (*Potamogeton gramineus*) could no longer be confirmed at the Bibershof. This had been one of the few habitat directly on the shore of the Lake of Constance. Some larger stocks can be found in the carex elata reed – for instance in the Giehrenmoos.

Occurrence of neophytes

Due to the markedly higher water level, the population of the **Canadian golden rod** (*Solidago canadensis*) which is lower and more hit by submergence and even more of the **late golden rod** (*Solidago gigantea*) did by far not demonstrate such an expansive growth as in the previous years. However, most of the stocks in higher areas increased. The **red touch-me-not** (*Impatiens glandulifera*) could further expand its stocks: above all along the millstream the first plants reached the reed meadows in the east. The only population of the **Jerusalem artichoke** (*Helianthus tuberosus*) at the Reichenau barrier beach has hardly changed for years.

1.3 Fauna

Birds (Aves)

The monthly counts of water fowl from September 2007 to April 2008 demonstrated lower total populations than in the previous year – as everywhere around the Lake of Constance: maximum of 36,000 individuals in October and 34,000 individuals in November 2007. Nevertheless, the daily values were again particularly noteworthy for some species: 2,600 **gaswalls** (*Anas strepera*) in November, 6,200 **teals** (*Anas crecca*) in November, 910 **pintail ducks** (*Anas acuta*) in November, 3,900 **red-crested pochards** (*Netta rufina*) in December, around 15,000 **common pochards** (*Aythya ferina*) in October and 12,000 **tufted ducks** (*Aythya fuligula*) in December.

Due to the low water levels from October onward, large parts of the shallow water areas of the protected zone could not be used by the water fowl. The birds necessarily moved over into adjacent unprotected zones where they are often flushed and driven away. In the winter semester, the protected shallow water zone does by far not suffice in most years to fulfil its role as most important habitat for water fowl in Baden-Württemberg. Therefore an extension of the protected zone to encompass the entire Ermatingen basin is urgently necessary (see Chapter III).

For the first time, the breeding outcomes for some water fowl species were better thanks to the fact that the reed bank was flooded in good time before the water level rose so that it could be used as breeding location. This was above all true for the **little grebes** (*Podiceps ruficollis*) with 15 families (24 young) and the **black necked grebes** (*Podiceps nigricollis*) with 22 families (28 young), but particularly for the **great crested grebes** (*Podiceps cristatus*) with 201 families (304 young). Also the **red-crested pochard** (*Netta rufina*) with 19 families (75 young) exceeded by far the number of 3 families of the previous year. The number of breeding territories for the **great reed warbler** (*Acrocephalus arundinaceus*) with 30 territories and for the **little bittern** (*Ixobrychus minutus*) with at least 6 territories was particularly gratifying. Other breeding birds in the reed bank were quite well represented: **Savi's warbler** (*Locustella luscinioides*) with 30 territories and **bearded tit** (*Panurus biarmicus*) with about 42 territories. But the three breeding rafts could not be used by the **common terns** (*Sterna hirundo*) (cf. 5.1.2) because the rafts were often blocked by cormorans and yellow-legged gulls.

Butterflies (Lepidoptera)

The known habitat of the **large blue** (*Maculinea teleius*) and the dusky large blue (*M. nausithous*) could be confirmed.

Bugs (Coleoptera)

The LUBW commissioned a study of water beetles in order to prepare the NATURA-2000 management plans in which the biologist Claus Wurst could demonstrate the **water beetle**

(*Graphoderus bilineatus*) together with its sister species (*G. zonatus* und *G. cinereus*) in a lagoon heavily overgrown with reeds in the Hegne bay. These species are listed in annex II and IV of the FFH directive.

2. Cultural heritage and socioeconomic context

2.2 Socioeconomic context

Thanks to the higher water levels in summer, fishing activity was much more intensive than in the previous years, above all in the tubes. This caused considerable disturbance of the sensitive resting and moulting populations in the tubes as well as in the inner Hegne bay. This concerned mainly the **red-crested pochard** (*Netta rufina*), **gaswalls** (*Anas strepera*) and **ferruginous duck** (*Aythya nyroca*).

3. Education and scientific interest

3.1 Visitors – Information policy

3.1.2 Frequentation of visitors and behaviour

A total of 2,050 participants attended 154 excursions held in the core areas of the reserve. In addition, 73 were offered an insight into the reserve with the guided bird watching sessions on the observation platforms set up at the edge of the area. By offering a total of 15 nature study boat trips, the NABU was able to welcome 265 guests. The NABU Nature Conservation Centre Wollmatinger Ried received 1,136 guests.

Unauthorized trespassers were only occasionally met within the prohibited areas and as a rule they left the area without delay, after a brief explanation. The unofficial bathing use which was tolerated to a limited degree in the mouth area of the clearing channel, could be limited to these allowed areas by intensive controls and regular repair of the barriers so that the protected animals were not too much disturbed. Due to the higher water levels in summer, the monitoring by the floating protection and observation station "Netta" was again very important to avoid disturbances on the lake caused by water sports enthusiasts.

3.1.3 Special visitors

On the occasion of the pending extension of the European Diploma, Ms Flore Chaboissau as representative of the Secretariate of the European Council and Dr. Daniel Daske as expert of the European Council came to see the Wollmatinger Ried. They attended two excursions and numerous meetings with representatives from all levels of nature conservation administration, the local authorities, street planning, fishing administration and the supervision organisation and got a comprehensive idea of the present state and the relevant problems of the reserve.

On 30 Sept. 2008, Prof. Dr. Ogawa Hitoshi and Prof. Dr. Ko Wakabayashi from the agricultural faculty of the Tokyo University visited the NABU Centre Wollmatinger Ried for detailed information on methods how to collect population dynamics, and on the conflict between hunting and nature protection.

3.2 Scientific research

3.2.1 Current and completed research

Plant counts were performed by employees of the NABU Centre Wollmatinger Ried (cf. 1.2). The development of the beach meadow is scientifically accompanied by employees of the study group Bodenseeufer (cf. 1.2 and 3.2.2 PEINTINGER).

A survey of avifauna was performed by employees of the NABU Centre Wollmatinger Ried and the Lake Constance Ornithological Group which involved regular counts of waterfowl populations and mapping of breeding birds (cf. 1.3). A new focus was the count of waterfowl during summer moulting period within the framework of the "Wild birds and bird flu" project commissioned by the Baden-Württemberg Ministry of Food and Rural Affairs.

Entomological studies were performed by C. Wurst (water beetles, cf. 1.3), E. Konzelmann (beetles), and E. Klein and A. Krismann (butterflies).

Entomofaunistic and arachnologic studies by J. Kiechle and vegetation scientific studies by E. Klein were continued within the framework of the experiment to maintain the open landscape of the litter meadows by grazing cattle.

The studies commissioned by the Regierungspräsidium Freiburg in 2003 on the effect of estival low water levels on the riparian biocoenosis performed by the study group "Lake Constance banks" were continued (cf. 3.2.2 Dienst et.al.).

3.2.2 Scientific publications

- BAUER, H.-G., LEMOINE, N. & PEINTINGER, M. (2008): Avian species richness and abundance at Lake Constance: diverging long-term trends in Passerines and Nonpasserines. – J. Ornithol. 149: 217–222.
- BLEEKER, W., KLAUSMEYER, S., PEINTINGER, M. & DIENST, M. (2008): DNA sequences identify invasive alien *Cardamine at Lake Constance*. – Biological Conservation 141: 692–698.
- DIENST, M., OSTENDORP, W. & WERNER, S. (2008): Entwicklung der Pioniervegetation 2003 bis 2007 am Ufer des Naturschutzgebietes „Wollmatinger Ried–Untersee–Gnadensee“. - unveröff. Gutachten im Auftrag des Regierungspräsidiums Freiburg. (*Development of pioneer vegetation 2003 to 2007 in the riparian zone of the reserve „Wollmatinger Ried-Untersee-Gnadensee“ – unpublished expertise commissioned by the Administrative Authority Freiburg*)
- OSTENDORP, W., BREM, H.-J., DIENST, M., JÖHNK, K., MAINBERGER, M., PEINTINGER, M., REY, P., ROßKNECHT, H., SCHLICHOTHERLE, H., STRAILE, D. & STRANG, I. (2007): Auswirkungen des globalen Klimawandels auf den Bodensee. – Schr. Ver. Gesch. Bodensee Bd. 125: 199–244. (*Effects of Global Warming on the Lake of Constance*)
- PEINTINGER, M. (2007): Populationsdynamik des Bodensee-Vergissmeinnichts (*Myosotis rehsteineri*) – eine Dauerflächenuntersuchung 1989-2000. (*Population dynamics of the Lake Constance forget-me-not (myosotic rehsteineri)- a permanent field study 1989-2000*) – Carlinea 65: 45–53.

4. Legal requirements

The exemption ruling adjusted to nature protection concerns issued by the Lake Constance Shipping Order of the District Administration of Constance dated 3 Sept. 2008 imposed clear limits in terms of time and space to kite surfing on the German part of the Lake Constance (Untersee) (cf. 5.2.4).

5. Site management

5.1 Improvements made

5.1.1 Ecological action

As in the previous year, complete maintenance of around 114 hectares of litter meadows and tall sedge meadow was performed by order of the nature conservation authorities by farmers using large-scale equipment. The NABU carried out manual maintenance on 36 hectares of litter and meagre meadows in the sensitive areas of the riparian dams and areas with endangered species.

The high-fertility common "Zügwiesen" (17 hectares) was mown in mid-June and early September 2008. In the green bridge areas and on other meadows rich in nutrients, and litter meadows showing symptoms of eutrophication, NABU thinned the vegetation by mowing over an area of 11 hectares. However, the continuation of the cultivation work done by NABU is endangered due to the dramatic reductions of subsidies.

Cattle grazing (6 hectares) on the "Lange Züge" common was continued with 8 Highland breeding heifers and one bull.

From the beginning of May to mid-September, steps were taken to combat all neophyte occurrences (**Canadian golden rod**, *Solidago canadensis*, **late golden rod**, *S. gigantea*, **policeman's helmet**, *Impatiens glandulifera* and **Jerusalem artichoke**, *Helianthus tuberosus*) between one and three times by manual pulling up or limited-area mowing.

5.1.2. Species protection

The efforts to protect the breeding rafts used by the **common terns** (*Sterna hirundo*) with protective fences failed. The common terns had in the third consecutive year no breeding success. The rafts were occasionally blocked by cormorans and yellow-legged gulls.

5.1.4 Field equipment

Once again, the access footbridge to the observation platform at the Ermatingen Basin had to be repaired. The preliminary planning of the general refurbishment of the entire construction planned since three years by the Government headquarters Freiburg shall now be implemented in the winter semester 2008/09. The nature protection administration will no longer finance the maintenance work on the sight fencing between the path and the breeding bird pond.

5.2 Site Management

5.2.4 Infringement of regulations and damage: Legal action

Thanks to the fact that the nature reserve has meanwhile been entered on the official IACO aviation map and the resolute interventions of the aviation authorities in cases of infringements, only two transgressions were found in the year under preview.

In December 2007 and January 2008, kite surfers used the strong wind situation and trespassed the protected low water zone by several hundred meters coming from the swimming and camping place Hegne (cf. 4). The Landratsamt Konstanz is in charge of the initiated criminal prosecution.

II. EFFECTS OF THE EUROPEAN DIPLOMA

Additional compensatory measures for the planned construction of the west bypass could be made available thanks to the high importance for the European Diploma. The apprehended complete isolation of the eastern half of the Wollmatinger Ried from the Bodanrück hinterland could thus be attenuated.

III. PROGRESS IN COMPLIANCE WITH EUROPEAN COUNCIL RECOMMENDATIONS

The studies concerning the effects of estival low water levels were extended by avifauna studies. In addition, the competent Ministry for Rural Areas has started a new initiative to establish a research zone in the "hoses" and the "inner Hegne bay". The Ministry endeavours to implement the research zone in agreement with fishery.

The official approval of the plan to extend the B33 was given on 13 March 2007. It was possible to use 160 m² less of protected areas than originally planned. However, the risk of isolating the reserve will be increased when the existing two-lane road is increased to four lanes. It is expected that comprehensive compensatory measures will dampen the negative effect. Among other measures, it is provided to build three green bridges and extensive splash water and noise protection means, to extend the protected area and ensure long-term landscape care in the reserve and its buffer areas. The approval of the plan to build the "west bypass" is announced for November 2008. Improvements of the network between the Wollmatinger Ried and the Bodanrück hinterland are planned in order to compensate the intrusions into the buffer zone. It can be expected that the provided road construction will not jeopardize the existence of the protected area provided that all compensatory measures are realized.

Since 1 Jan. 2008, the Wollmatinger Ried appears in the official IACO aviation map as an EU bird sanctuary (cf. 5.2.4). As a consequence, a reduction of air-borne disturbance could be achieved. The official opening of the informative teaching trail is provided for spring 2009. On the other hand, no decisive progress could be achieved in the urgently needed renovation of the existing information infrastructure including the visitors' centre.

The state government does not see at this time a way to extend the conservation area as far as the national border. It is all the more important to achieve a functioning and sufficient protection of these areas that are so essential for bird protection in the course of the pending preparation of the NATURA 2000 management plans (cf. 1.3).