

**Annual Report 2012**  
**On the nature reserve and protected landscape area**  
**"Wollmatinger Ried - Untersee - Gnadensee" (Germany)**

Period under review:	1st October 2011 to 30th September 2012
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## **I. GENERAL INFORMATION**

### **1. Natural heritage – conservation status**

#### **1.1 Environment**

On a yearly average, at 10.4°C the temperature was 1.3°C up on the long-term mean. Following temperatures in October and November in the region of the reference values, this was followed from 27th November to 29th January by a very mild period (2.9°C above average). An extreme drop into low temperatures following on from this with permanent frost from 30th January to 14th February and a mean temperature of -7.2°C caused a closed ice cover to form in the shallow water zone. February was 4.1°C colder than the long-term mean, with an average of -2.8°C. From 23rd February, the temperature rose again quickly, followed by an extremely warm March with an average of 8.1°C. The sun also shone for almost twice the long-term average number of hours with a total of 230 hours of sunshine over the month. Following a short phase of average temperatures, from 26<sup>th</sup> April a new warm period set in, which apart from short cooling phases (including a local late frost in mid May) lasted until the end of August. At 14.9°C, the temperatures in September were only marginally (0.2°C) above the long-term mean.

With total precipitation of 909 mm, the year under review was around 7% wetter than the years 1961 to 1990. Precipitation was very unevenly distributed: While almost no precipitation occurred from October 20 to December 1, with just 0.7 mm, the period from December 2 to January 5 saw around three times the average rainfall with 180 mm. A less pronounced period of drought followed from February to May, followed by rainfall totalling 141 mm in June, around 36 mm more than the average for the month. A slightly dry July was followed by a rainy August, during which almost double the customary amount of rain fell, totalling 192 mm. This rainfall was concentrated primarily on three high-density rain events on August 15, 24 and 31.

Following water levels in Lake Constance (cf. Fig. 1) which had dropped to a value of 277 cm measured at the Konstanz water mark, the wet and warm December resulted in an unusual winter rise of 56 cm by the beginning of January. However, as frost and dry weather dried up the tributaries, the water level of the lake had dropped to the long-term average by the end of February. A typical rise in the water level occurred as the warm weather in March melted the snow: On May 2, the level in the lake reached the reed bed limit, allowing the water birds to swim into the reed zones. The increased snow melting activity at the end of May – further boosted by the warm and rainy July – resulted in a continued very rapid rise in the water level up to this year's maximum value of 471 on June 14th, which flooded large areas of the reed marsh. The level then dropped rapidly to 358 cm on August 20th. The level drop was halted primarily by rainstorms over large areas, bringing the water to a sustained level above 370 cm. This meant that no mud flats had formed by the end of September for the puddle ducks and waders.

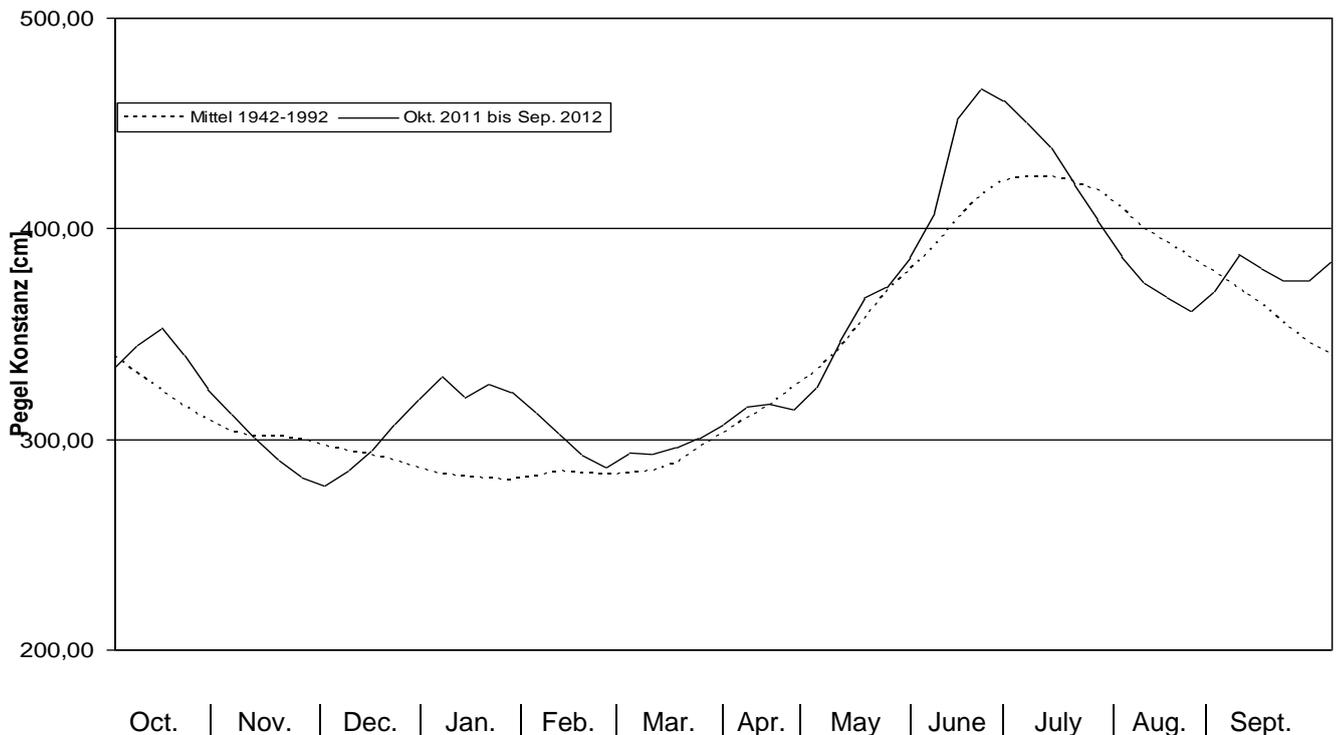


Fig. 1: Lake Constance water level (Konstanz harbour water mark) from October 1 2011 to September 20, 2012 (continuous line) and the mean values from 1942 to 1992 (dotted line)

## 1.2 Flora and vegetation

The development of characteristic and value-enhancing flowering plants over the year under review may be seen as very positive overall. Five important species were counted in their highest bloom density yet: 4,827 (2011=2,813) **marsh gladioli** (*Gladiolus palustris*) plants were counted, incidence of **summer ladies tresses** (*Spiranthes aestivalis*) rose to 1,279 (2011=816) plants. The **lax-flowered marsh orchid** (*Orchis palustris*) with 662 (2011=171) specimens, the **burnt-tip orchid** (*Orchis ustulata ssp. aestivalis*) with 4,926 (2011=4,352) and the **viper's grass** (*Scorzonera humilis*) with 2,645 (2010=688) specimens all reached new record levels. The second best bloom density ever documented in the nature reserve were achieved by the **bladder gentian** (*Gentiana utriculosa*) with 12,469 (1997=12,506) flowering plants and the **bird's eye primula** (*Primula farinosa*) with 97,613 (2011=113,324). The **marsh dandelion** (*Taraxacum sect. Palustria div. spec.*) remains at a high level with 8,489 (2011=8,373) flowering plants. The **marsh gentian** (*Gentiana pneumonanthe*) continued its recovery with 2,453 (2011=1,157) in the test areas, as did the **small meadow rue** (*Thalictrum simplex ssp. galioides*) with an overall stock of 4,049 (2011=3,562) flowering plants. The **green-winged orchid** (*Orchis morio*) returned for the first time to its pre-1999 flood level with 427 flowering plants (1999=615). A complete count of all populations of the **early marsh orchid** (*Dactylorhiza incarnata*) in the nature reserve was carried out for the first time, showing a population of 82,517. Demonstrating an almost unchanged stock density over a number of years were also the **mouse garlic** (*Allium angulosum*) with 13,526 (13,391) and the **sweet wattle** (*A. suaveolens*) with 50,806 (55,751) counted flowering stems. Despite localized losses due to later frost and hail damage, the **Siberian iris** (*Iris sibirica*) also achieved a good result with 1,665 (2011=1,739) specimens in the test areas.

The development of the **bug orchid** (*Orchis coriophora*) once again gave rise to concern. Only 3 (2011=6) flowering plants were found (cf. Chap. 5.1.1). Although the **hedge hissop** (*Gratiola officinalis*) was able to recover slightly compared to the previous year (1,157), this year's total stock of 2,436 vegetative sheets is only 29 % of that counted in the previous years (mean value 2006-2010 = 8,362).

### Bibershof beach meadow by Irene Strang

The bank areas were inspected again in 2012 at the beginning May and the status of beach meadow populations counted. There has been a particularly gratifying development for the **water**

**forget-me-knot** (*Myosotis rehsteineri*). After the species reappeared in 2010 after a long-term absence, the stock amounted to just under 160 rosettes. By 2012 this had more than doubled to almost 460 rosettes. A marked increase in the **water forget-me-knot** population was also documented outside of the nature reserve in many locations in the Untersee area.

The stocks of **shore weed** (*Littorella uniflora*) and **creeping spearwort** (*Ranunculus reptans*) have hardly changed in comparison with 2011.

In the winter of 2011/2012, the Bibershof area was mown as usual and the litter taken away, leaving the vegetation structure more open. This is beneficial to the small growing beach meadow flora.

### Occurrence of neophytes

The development tendencies observed in the expansive newly arrived plant species in the previous year continued:

Most occurrences of **Canada golden rod** (*Solidago canadensis*) and the **late golden rod** (*S. gigantea*) in particular demonstrated a reduction without eradication of the whole population. The stock of **grass leaved golden rod** (*S. graminifolia*) newly discovered in the previous year was unchanged.

The **red touch-me-not** (*Impatiens glandulifera*), by contrast, had reduced only minimally overall, and in the peripheral areas particularly had actually increased.

The incidence of **Jerusalem artichoke** (*Helianthus tuberosus*) at the Reichenau beach barrier had stagnated.

The only known occurrence of **Japanese knotweed** (*Reynoutria japonica*) had lost its vitality in the year under review.

## 1.3 Fauna

### Birds (Aves)

The monthly counts of water fowl were continued in the winter months 2011/2012. The total population was well below the values for the previous year: a maximum of 34,000 individuals were counted in November 2011 and 31,000 in February 2012. However, for some of the water fowl species the daily values once again reached national and international significance: 9,800 **gaswalls** (*Anas strepera*) in November, 4,400 **common teals** (*Anas crecca*) in November, 870 **pin-tailed ducks** (*Anas acuta*) in December and 6,100 **red-crested pochards** (*Netta rufina*) in September. Up to 17 **Bewick swans** (*Cygnus bewickii*), 124 **whooper swans** (*Cygnus cygnus*) and 240 **Eurasian curlew** (*Numenius arquata*) also overwintered in the nature reserve. The unusually high water level in January / February and the severe frost period exerted a significant influence on winter populations.

The water fowl counts carried in the Summer were continued and supplemented by a count in mid May. The nature reserve provided a habitat for around 10,000 moulting water fowl using the reserve as a summer resting place. The reserve provided a particularly significant moulting habitat for >5,000 **red-crested pochards** (*Netta rufina*) and also around 600 **gaswalls** (*Anas strepera*). Up to 169 **black-necked grebes** (*Podiceps nigricollis*) gathered in the Rhine channel at the periphery of the nature reserve for their flight-feather moult.

The water fowl species all reacted very differently to this year's rapid water level rise (cf. Chap. 1). The **black-necked grebe** (*Podiceps nigricollis*) achieved a gratifying 26 families with 42 young, the **great crested grebes** (*Podiceps cristatus*) actually formed 271 families with 463 young, the **little grebe** (*Tachybaptus ruficollis*) by contrast only managed 15 families with 21 young. The breeding outcome for the **red-crested pochards** (*Netta rufina*) was also low, with 15 families and 50 young.

The populations of breeding bird species in the reed bed rose considerably in some cases: **little bittern** (*Ixobrychus minutus*) 16 territories (2011=3), **great reed warbler** (*Acrocephalus arundinaceus*) 42 territories (2011=28), **savi's warbler** (*Locustella luscinioides*) 26 territories (2011=16) and **bearded tit** (*Panurus biarmicus*) 49 territories (2010=47). Particularly noteworthy was the discovery of 8 territories claimed by the **little crane** (*Porzana parva*) and evidence of a brood (however unsuccessful) belonging to the **purple heron** (*Ardea purpurea*). 42 pairs of **common terns** (*Sterna hirundo*) were breeding on the rafts and 48 young were fledged.

## **Butterflies (*Lepidoptera*)**

During a total of 4 sampling inspections, altogether 115 **scarce large blue** (*Maculinea teleius*) moths, and 20 **dusky large blue** (*M. nausithous*) moths were counted. A total of 187 eggs of the **alcon large blue** (*Maculinea alcon*) were found on 70 bladder gentian plants.

## **2. Cultural heritage and socioeconomic context**

### **2.2 Socioeconomic context**

In the Wollmatinger Ried nature reserve, fishing was the only legally pursued commercial usage. As repeatedly reported in the past, this usage has a considerable detrimental effect on the Avifauna.

Within the nature reserve, fishing takes place exclusively using complex and uneconomical pot and line fishing methods, while economically profitable netting is performed for whitefish and European perch in the deep water zone outside the protected area. According to the statements of individual professional fishermen, the high level of interest in the Wollmatinger Ried does not arise from the catch which can be achieved there directly, but because the protected shallow water and water exchange zones play an important role in ensuring good reproduction as a fish breeding habitat.

This would mean that it should be easily possible to agree non-fishing zones, but the fishing faction is vehemently opposed to any advances in this direction (cf. Chap. III no. 2). This is presumably because the fisheries fear in particular any loss of their spheres of interest. This fear is exacerbated by the diminishing catches caused by measures undertaken to stem pollution of Lake Constance, and the dwindling social significance of the fishery business.

To achieve success in our endeavours to calm the protected core zones, this context must be taken into consideration, as any plans to set up a fishery-free calm zone within the nature reserve can only be successfully executed in agreement with the fishery industry unless there is a change in the law.

## **3. Education and scientific interest**

### **3.1 Visitors – information policy**

#### **3.1.2 Frequentation of visitors and behaviour**

During the period under review, 144 guided tours took place inside the nature reserve which were attended by 1,941 visitors. During 24 nature study boat trips, 247 visitors gained an awareness of the beauty of the area and the need for its preservation. The NABU nature reserve centre recorded 957 visitors to its exhibition.

### **3.2 Scientific research**

#### **3.2.1 Current and completed research**

Plant counts were performed by the employees of Wollmatinger Ried Nature Conservation Centre (cf. section 1.2). The development of lakeside vegetation and beach meadows is scientifically studied by the Lake Constance Shore Working Group bi-annually.

A survey of Avifauna was carried out by the employees of the NABU Wollmatinger Ried Nature Conservation Centre and the Lake Constance Ornithological Bird Group, which involved regular counts of waterfowl populations and breeding birds, and mapping of breeding territories (cf. section. 1.3).

Ground surveys were continued as part of the compilation of management plans for the NATURA-2000 area no. 8220-341 "Bodanrück and Western Lake Constance". Mapping work was coordinated by the Office for Ecological Landscape Planning, Josef Kiechle.

### 3.2.2 Scientific publications

- FIEBRICH M. (2012): Die Libellen der Stillgewässer der Halbinsel Bodanrück – Ein Vergleich verschiedener Erfassungsmethoden. – Unpublished diploma thesis, University of Trier.
- GROHE S. (2012): Long-term Trends in Rare Plant Population Size in a German Wetland Reserve. – Unpublished Bachelor Thesis, University of Oxford.
- OSTENDORP, W. & DIENST, M. (2009): Vegetationsdynamik im NSG „Wollmatinger Ried-Untersee-Gnadensee“ (Bodensee-Untersee) unter dem Einfluss von hydrologischen Extremereignissen. – *Carolinea* 67; 93-107.
- PEINTINGER M. (2011): “Verbreitung, Populationsdynamik und Vergesellschaftung der Sibirischen Schwertlilie (*Iris sibirica*) im westlichen Bodenseegebiet. – *Carolinea* 69; 27-51.
- WINKLER, E., DIENST, M. & PEINTINGER, M. (2011): Markov simulation model: Flooding, competition, and the fate of the endemic *Myosotis rehsteineri*. – *Basic and Applied Ecology* 12: 620–628.

## 5. Site management

### 5.1 Improvements made

#### 5.1.1 Ecological action

The planned landscape maintenance work in the form of vegetation thinning and mowing the meadow during the winter months were carried out in full.

Cattle grazing (6 hectares) on the “Lange Züge” common took place from April 10th.

From May, the known occurrences of the neophyte **Canadian golden rod** (*Solidago canadensis*), **late golden rod** (*S. gigantea*), **grass-leaved golden rod** (*S. graminifolia*), **Himalayan balsam** (*Impatiens glandulifera*), **Jerusalem artichoke** (*Helianthus tuberosus*) were selectively targeted.

The in-situ cultures of **bug orchid** (*Orchis coriophora*) in the botanic garden of the University of Konstanz have now reached over 200 plants. The possibility of planting these out in the coming year is being considered to boost the very weak natural local population (cf. Chap. 1.2.).

#### 5.1.4 Field equipment

Many of the static supporting structures of the observation platform, which is indispensable to the PR work of the nature reserve, have now been so eroded that its safety for the public has been called into question by a commissioned static engineer. Repair of this facility is therefore essential. The City of Konstanz has volunteered to take charge of the planning and approval work. The refurbishment is due to take place in 2013.

## 5.2 Management

#### 5.2.4 Infringement of regulations and damage; legal action

Several incidences of disturbance by illegal campers occurred during the year under review, predominantly near to the railway stops. The vegetation had been trampled in localized areas and partially hacked down. Camp fires and noise had a disturbing and unsettling effect, there were lasting traces of excrement and waste deposits left behind. These were caused by organized gangs of beggars from South-East Europe. The situation could only be calmed by the concerted intervention of police and immigration authorities.

Despite credible endeavours on the part of the Zeppelin operating company, there were several disturbances due to Zeppelin NT airships flying overhead.

Disturbances continue to occur also as a result of fishing usage right in as far as the sensitive core zones of the nature reserve. Despite this, professional fishing operations have the express legal right to fish within the nature reserve.

## II. INFLUENCE OF THE AWARD OF THE EUROPEAN DIPLOMA OF PROTECTED AREAS

The European Diploma adds significant weight in favour of proper consideration of nature conservation concerns in the weighing up and taking of key decisions.

### **III. PROGRESS IN COMPLIANCE WITH THE EUROPEAN COUNCIL RECOMMENDATIONS**

The European Council has linked extension of the European Diploma to November 28, 2019 to six recommendations. The following progress has been made towards implementation of these recommendations:

#### **Implementation of the individual recommendations:**

1. Self-perpetuating development of the shallow water zone:

Self-perpetuating development within the shallow water zone may not be seen as assured. This topic is currently being dealt with by the Regional Council as part of the FFH Management Plan for Bodanrück. However no consensus can be reached between the fishing and nature conservation factions as to whether the sedimentation processes occurring in the "Schläuche" area are anthropogenically influenced or whether (as nature conservation proponents claim) these are self-perpetuating developments. Many meetings with the administration, also up to the ministerial level, have culminated in the result that no activity will take place at present.

2. Experimental suspension of fishing in the very sensitive core areas:

The management plan currently being drafted for the Natura-2000 zone "Bodanrück" envisages the elaboration of a zoning concept agreed through round table discussions with the affected user groups as a development measure. Until this has taken place, utilization of the area for fishing is permitted to continue without legal restriction. The FFH development measure is planned to be implemented from 2013.

3. Documentation of moulting activity and elimination of potential disturbances: The significance of the protected area as a summer resting and moulting place for water fowl is being documented by extended water fowl monitoring (cf. chap. 1.3). The close cooperation between voluntary helpers at the protection and observation station "Netta" and the water protection police is an effective instrument to reduce disturbance due to leisure activity, in particular water sports. The legal exercise of fishing rights and flights over the reserve by Zeppelin NT airships are disturbing factors affecting moulting activity.

4. Harmonization of cooperation between Switzerland and Germany:

No direct contact took place during the year under review on the state level within the framework of the International Lake Constance Conference (IBK) to harmonize cross-border cooperation to improve protection, particularly of the shallow water zone of the Ermatingen Basin.

5. Road building measures must not disturb the protected zone – compensation measures must be performed as a priority:

Construction of the B33 has continued and the Westtangente arterial road has almost been completed: Construction-related impacts on the nature reserve are being minimized by the construction of suitable barriers. Construction of the green bridge is almost complete. However, development of greening work including near-natural routing will take some years to complete. Along the newly constructed sections, sound barriers and splash water protection facilities now protect the nature reserve from the damaging impact of traffic. The next construction stage of the B33 to be started imminently will be the construction of a dual carriageway without junctions linking the Kindlebildstraße directly at the border to the nature reserve.

6. Clarification of the future of Wollmatinger Ried Nature Conservation Centre:

Plans for construction of the new Nature Conservation Centre are in the draft phase. Financing will be provided by a grant from the State of Baden-Württemberg of 1 million € and NABU's own funding. Building work on the new Nature Conservation Centre is due to start in 2013.