The International Seminar
„ACHIEVEMENTS, SUCCESS STORIES AND LESSONS LEARNED OF THE AQUATIC WARBLER CONSERVATION",
19–21 May 2015, Ventė, Lithuania

Towards favorable conservation status of Aquatic Warbler: habitat restoration strategy and conservation mechanism

Jarosław Krogulec

BirdLife/CMS International Aquatic Warbler Conservation Officer

Did we meet ISAP target?

- **In the short-term the current size of all breeding populations of the Aquatic Warbler throughout its range is maintained.**
- *Target:*
- *Until 2012 the following population sizes are maintained:*
- *world population* *10,500-14,200 singing males*
- *central European population:* *10,000-13,500 singing males (of these, 150-300 singing males in the Baltic States)*
- *Hungarian population:* *> 200 singing males*
- *Pomeranian population:* *80 singing males*

Did we meet ISAP target?

- *<u>Target:</u>*
- *Until 2012 the following population sizes are maintained:*
- *world population singing males* — *10,500-14,200* ⟺ *Large sites in BY,UA,PL*
- *central European population: singing males* — *10,000-13,500* ⟺ *Large sites in BY,UA,PL*

  (of these, 150-300 singing males in the Baltic States) ↓ 106 in 2014
- *Hungarian population: males* — *> 200 singing* ↓ extinct since 2011
- *Pomeranian population: males* — *80 singing* ↓ 12-14 in 2014

Towards favorable conservation status

Germany

- The last remaining breeding site in Germany is situated in the Lower Oder National Park (LONP) which had led to transformation of suitable habitat into core areas (“wilderness zones”).
- That has been compensated by turning of 200 ha of grassland outside the core areas into suitable AW habitat
- The new site management plan for the LONP includes AW habitat requirements and adequate measures: water management, mowing regime (“dynamic grassland management”, i. e. alternating early and late mowing).

Towards favorable conservation status

Germany

- Within the past and present AW breeding area in Lower Oder Valley National Park, the birds select for areas with lower and less dense vegetation with higher insect abundance.
- Habitat quality is negatively affected by the cessation of land use and positively affected by removal of biomass by mowing.
- 80-90 % of the AW breeding areas in Lower Oder Valley National Park have been either mown or grazed in the year before occupation.
- Mosaic-like structures with early and late mown patches turned out to be appropriate in alluvial, nutrient-rich habitats.

Towards favorable conservation status

Germany

- EU-LIFE-Nature project “Conserving Acrocephalus paludicola in Poland and Germany” (2005-2010): project site Peene Valley, Mecklenburg – Western Pomerania.
- Actions were i. a.: 120-130 ha are mown annually for AW habitat restoration, management and biomass use planning, AW and habitat monitoring.
- A second priority fen mire is target of the LIFE project “Improvement of the breeding and feeding habitats for the Lesser Spotted Eagle as well as for the Corn Crake and the Aquatic Warbler in the SPA “Schorfheide-Chorin" (2012-2017).

Towards favorable conservation status

Germany

- In the federal State of Brandenburg, an action plan for former and potential breeding sites has been prepared: TANNEBERGER, F., J. BELLEBAUM & A. FRICK (2011): Managementplan fuer den Seggenrohrsaenger.
- Besides management recommendations for the Lower Oder Valley five former breeding sites with potential for re-colonisation were identified.
- In one of these areas improvement of water management and land use is running already, for the others there are plans or concepts in preparation.

Towards favorable conservation status
Poland

Habitat management is crucial for sustainability of conservation of largest mire tracts in Poland: the Biebrza Valley (NE Poland) and Lublin Polesie (SE Poland).

Biebrza - second largest Aquatic Warbler breeding site in the world (up to 20% of the world population of the species)

Up to 15,000 ha of current and potential Aquatic Warbler habitat should be managed

Towards favorable conservation status Poland

IBIS
international journal of avian science
Ibis (2015), doi: 10.1111/ibi.12247

Short communication

Optimal habitat conditions for the globally threatened Aquatic Warbler *Acrocephalus paludicola* in eastern Poland and their implications for fen management

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modern management practices to achieve this, especially mowing using tracked vehicles, should be evaluated and optimized to ensure that such practices do not adversely affect the long-term development of moss cover and litter structure.

Keywords: arthropods, fen mires, habitat requirements, management regime, vegetation structure.

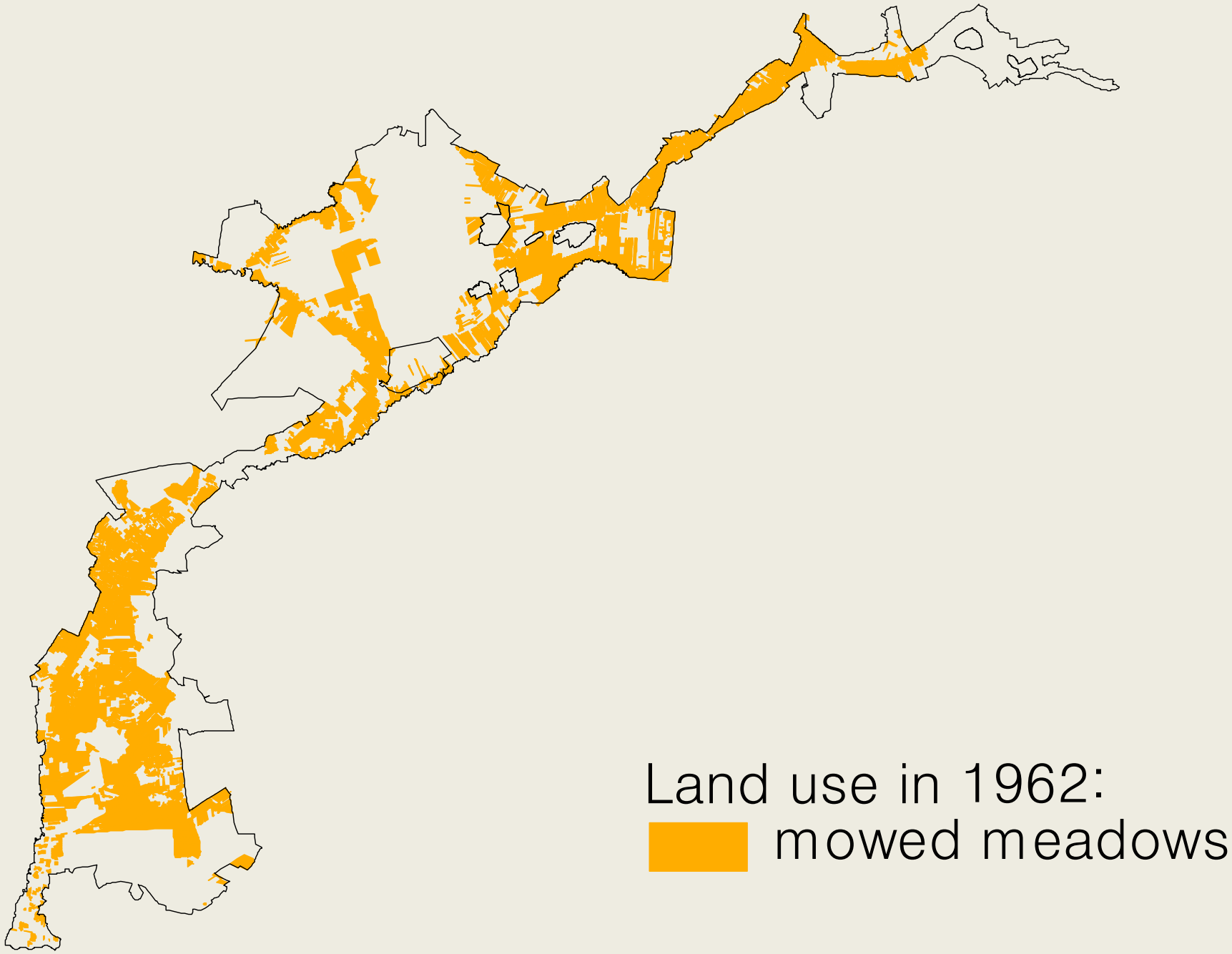
Once widespread in European fen mires, the Aquatic Warbler *Acrocephalus paludicola* is at present the rarest and the only globally threatened migratory passerine bird on the continent (Flade & Lachmann 2008). The species has evolved adaptations to allow both the climbing of stalks (in common with other *Acrocephalus* warblers) and running (in common with *Locustella* warblers). Thus, it has been able to occupy a habitat niche that is extreme for *Acrocephalus* species – sedge fen mires and similarly structured wetland habitats with low vegetation (Leisler *et al.* 1989, Schulze-Hagen 1991). The promiscuous mating system with uniparental female care, atypical of *Acrocephalus* species, also implies specific habitat requirements, such as a high abundance of food during breeding (Schulze-Hagen *et al.* 1989, Dyrcz & Zdunek 1993).

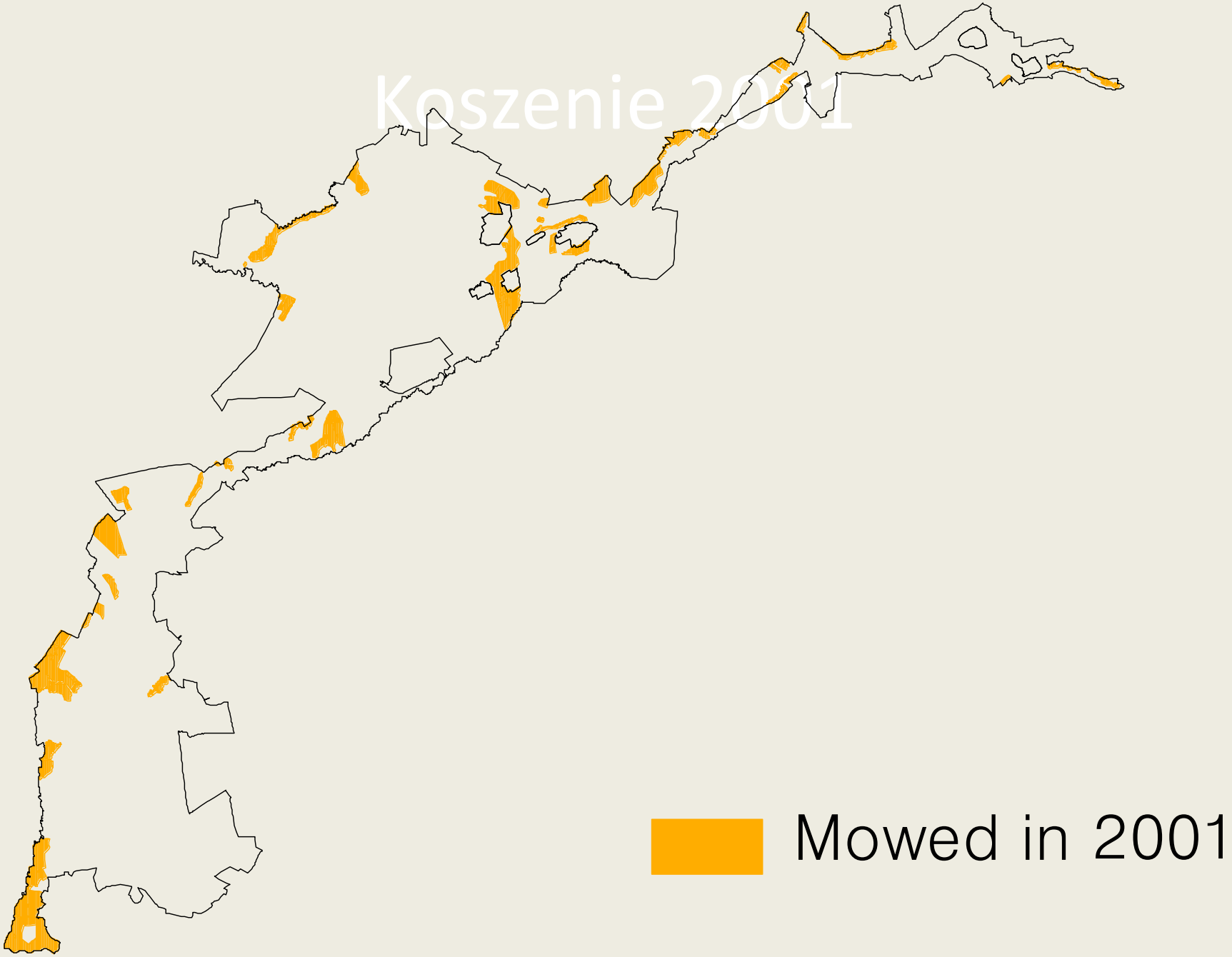
Measures for Aquatic Warbler conservation are required across the breeding range (Flade & Lachmann 2008). Many breeding areas have suffered from draining, land conversion, eutrophication and the resulting acceleration of vegetation succession. There is an urgent need to identify key characteristics determining habitat quality and the responses of Aquatic Warbler

Towards favorable conservation status
Poland

Extensive management through hay making was for long time crucial for keeping open habitats of largest mire tracts in Central and Eastern Europe (especially Polesie area)

Turia river


Land use in 1962:
mowed meadows


Koszenie 2001
Mowed in 2001

Threat of plant succession (end of ’90):

• Tree encroachment	1 454 ha
• Bush encroachment	5 897 ha
• Reed encroachment	2 690 ha
• Mosaic of open and forested habitat	5 110 ha
Total	**15 151 ha**

Source: „BNP Management Plan” draft, 2001

Effects of first LIFE project

Since the project start now it is possible to mow large areas of peatlands and to collect the biomass

Solutions – economic incentives

Agri-environment schemes targeted at the habitat of the Aquatic Warbler and other fen mire breeding birds are being implemented since 2009

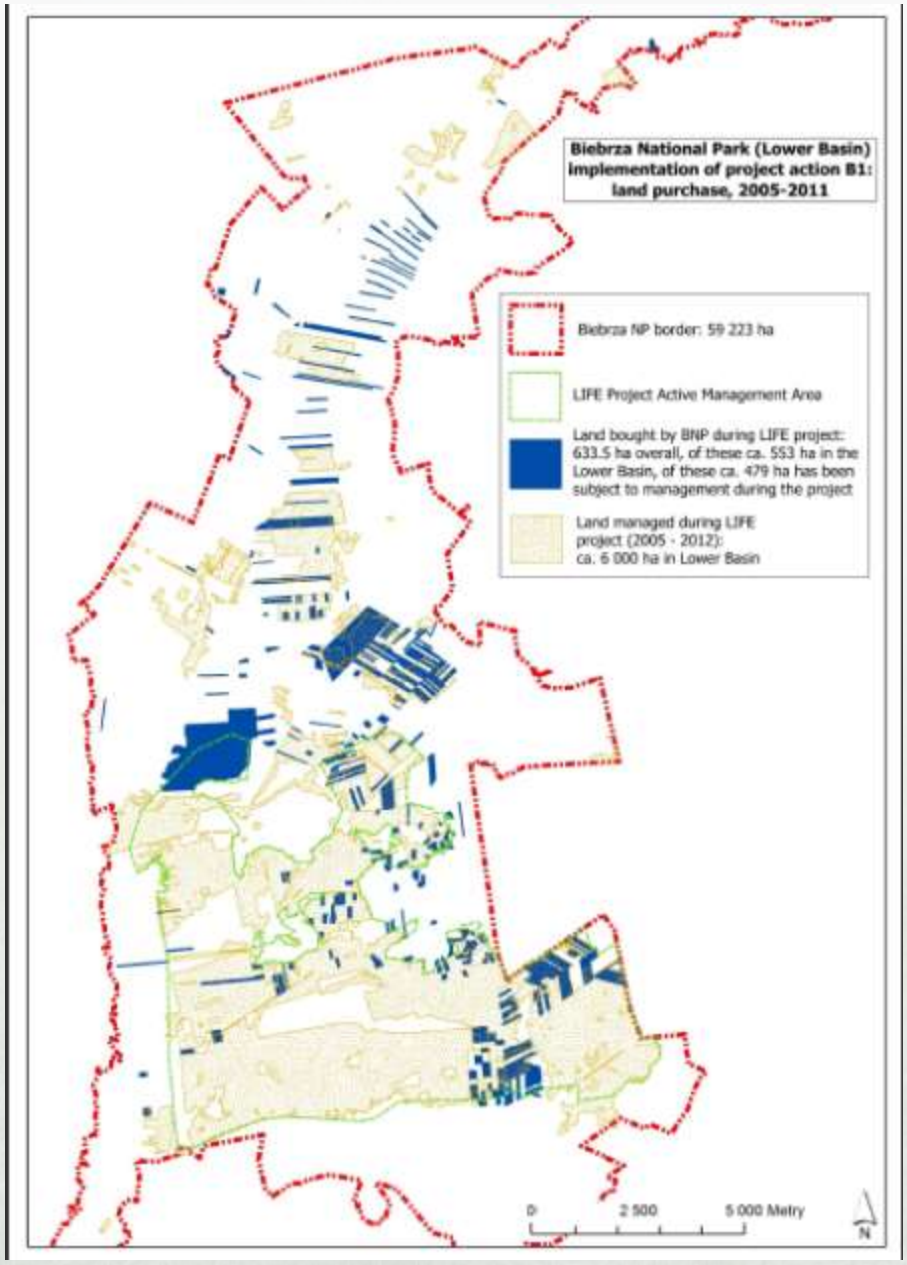
AES providing the funding needed to maintain suitable habitat management of fens.

Solutions – economic incentives

Agro-Environmental Programme 2007-2013, scheme 5

Nr	Nazwa pakietu	Nr wariantu	Nawa wariantu
5	Ochrona zagrożonych gatunków ptaków i siedlisk przyrodniczych na obszarach Natura 2000	**5.1**	**Protection of birds habitats**
		5.2.	Mechowiska
		5.3.	Szuwary wielkoturzycowe
		5.4	Łąki trzęślicowe i selernicowe
		5.5.	Murawy ciepłolubne
		5.6.	Półnaturalne łąki wilgotne
		5.7.	Półnaturalne łąki świeże
		5.8.	Bogate gatunkowo murawy bliźniczkowe
		5.9.	Słonorośla
		5.10.	Użytki przyrodnicze

Scheme 5.1 - payment: **1370 zł/ha = c.a 330 Eur/ha**



Land managed during first LIFE projects (2005-2012)

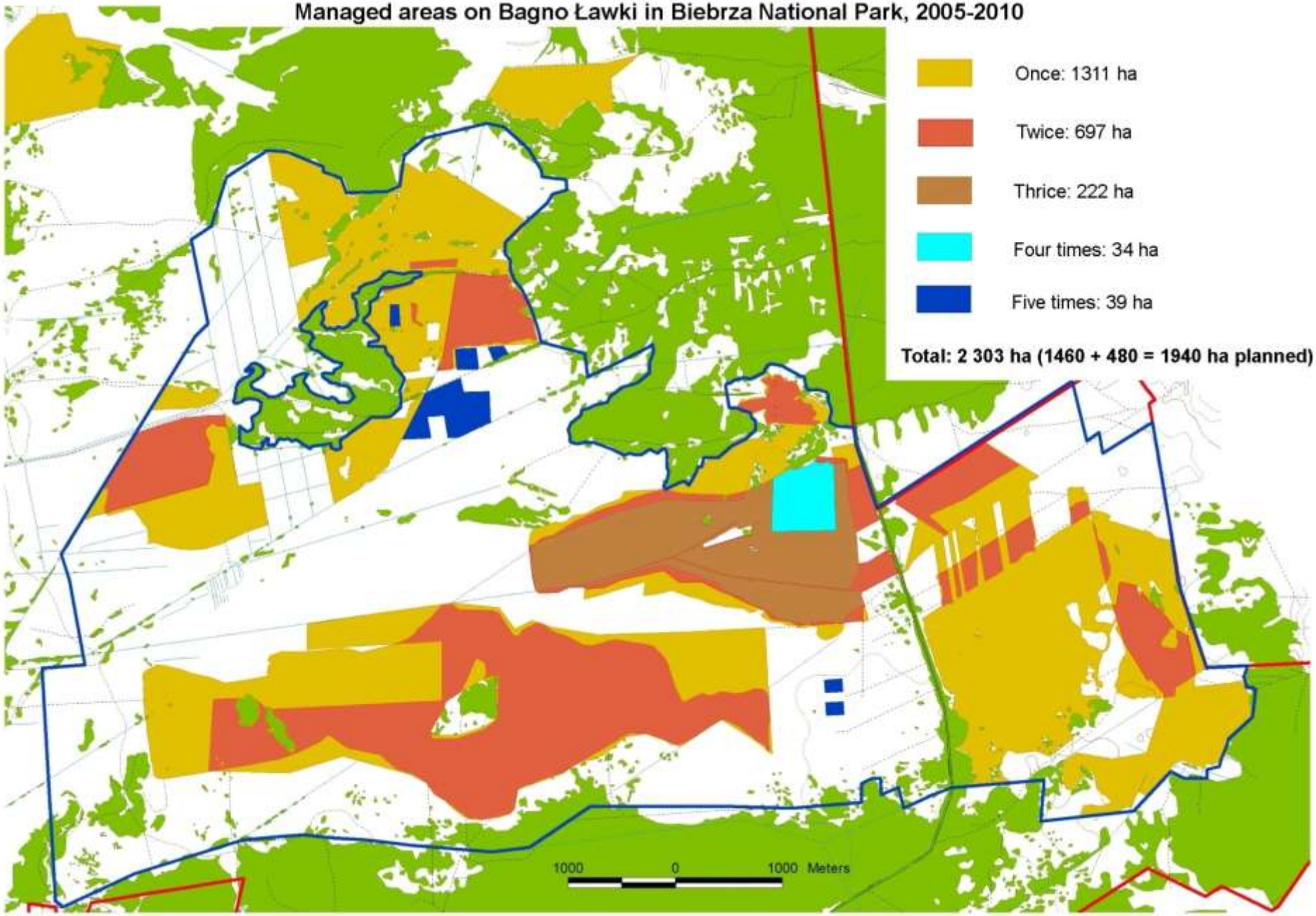
6 000 ha
(Biebrza Lower Basin)

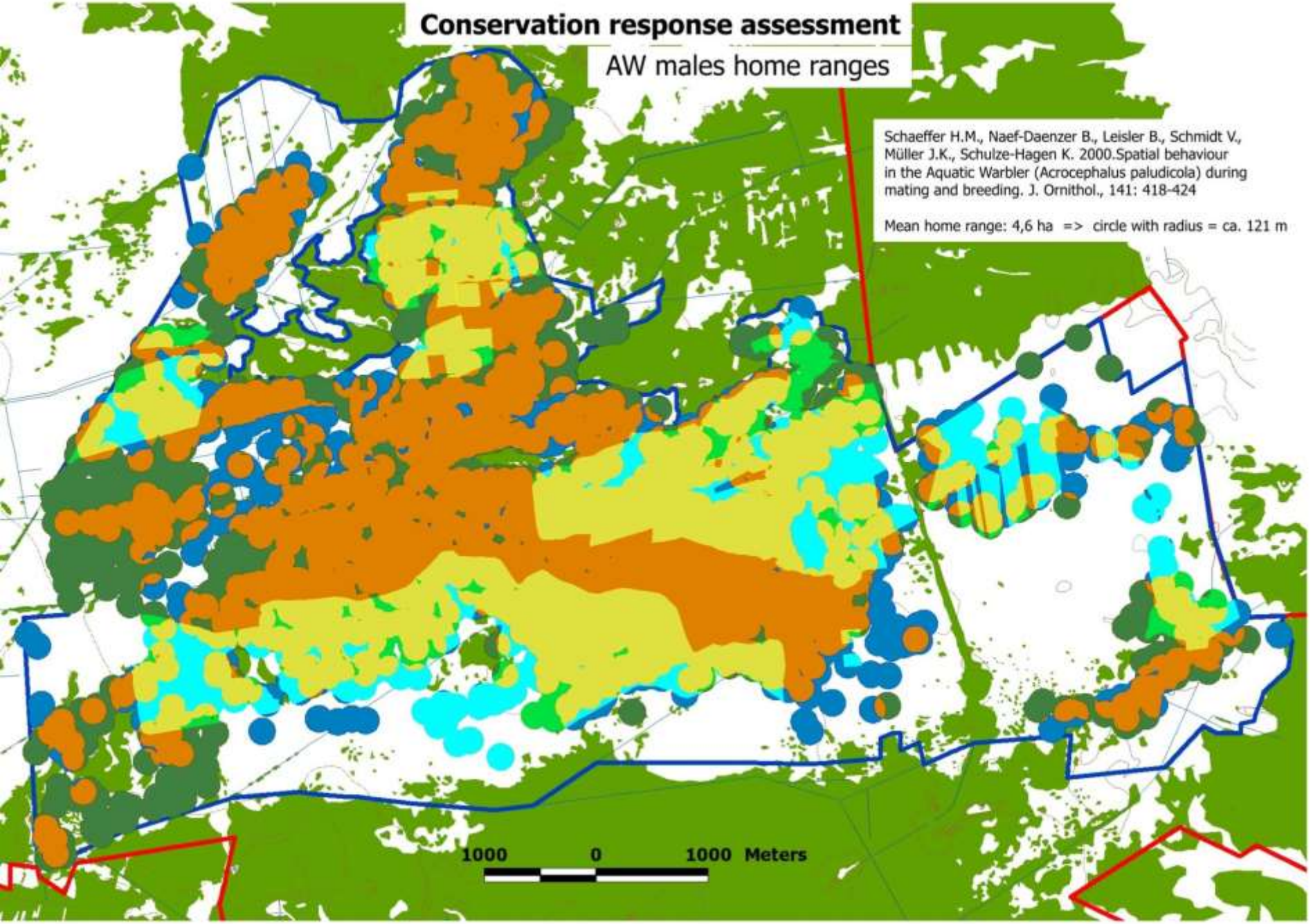
c. 5,000 ha of BNP leased to famers for mowing

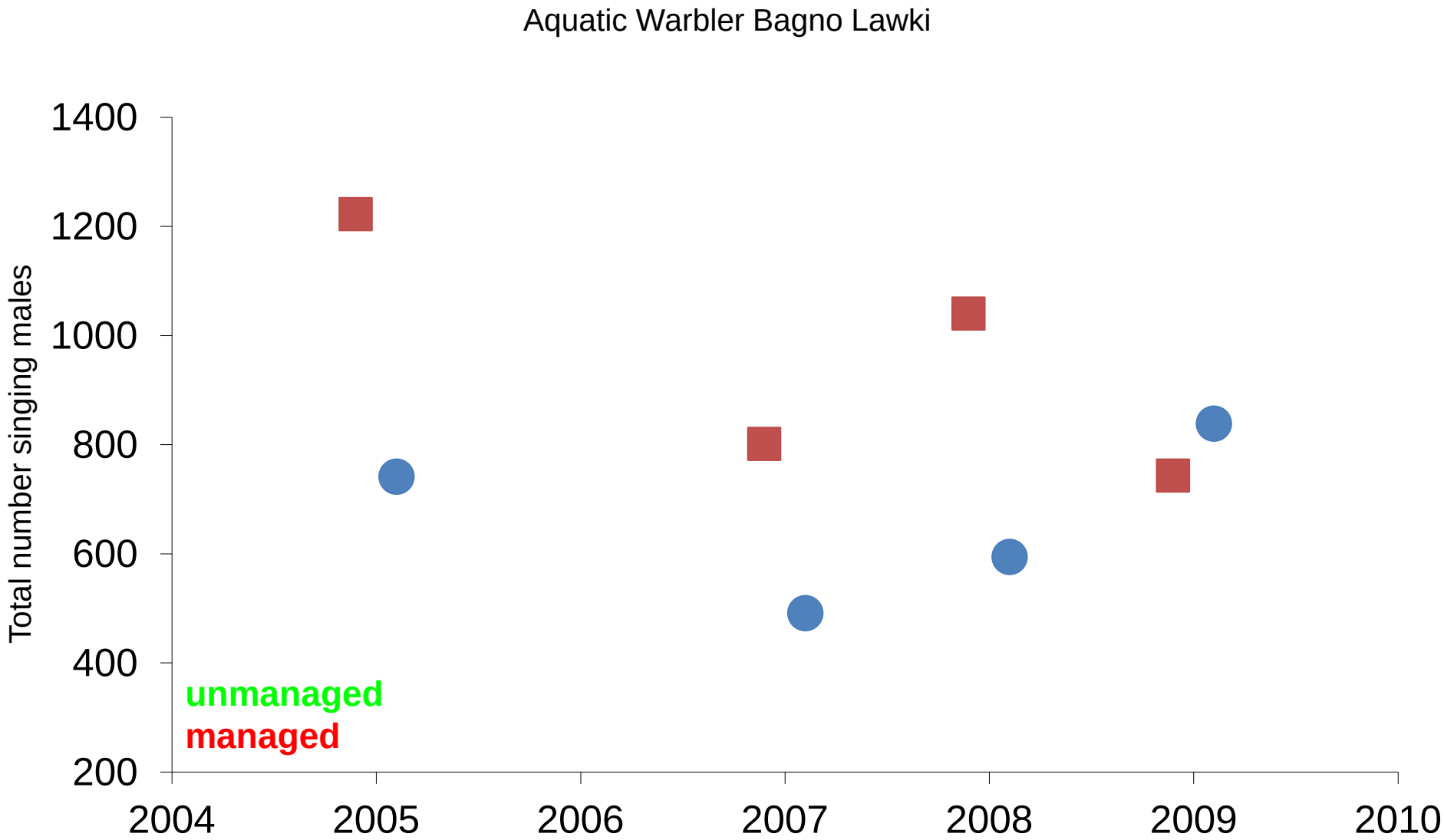
30-40 ratraks operated by private owners

P. Świątkiewicz


P. Świątkiewicz

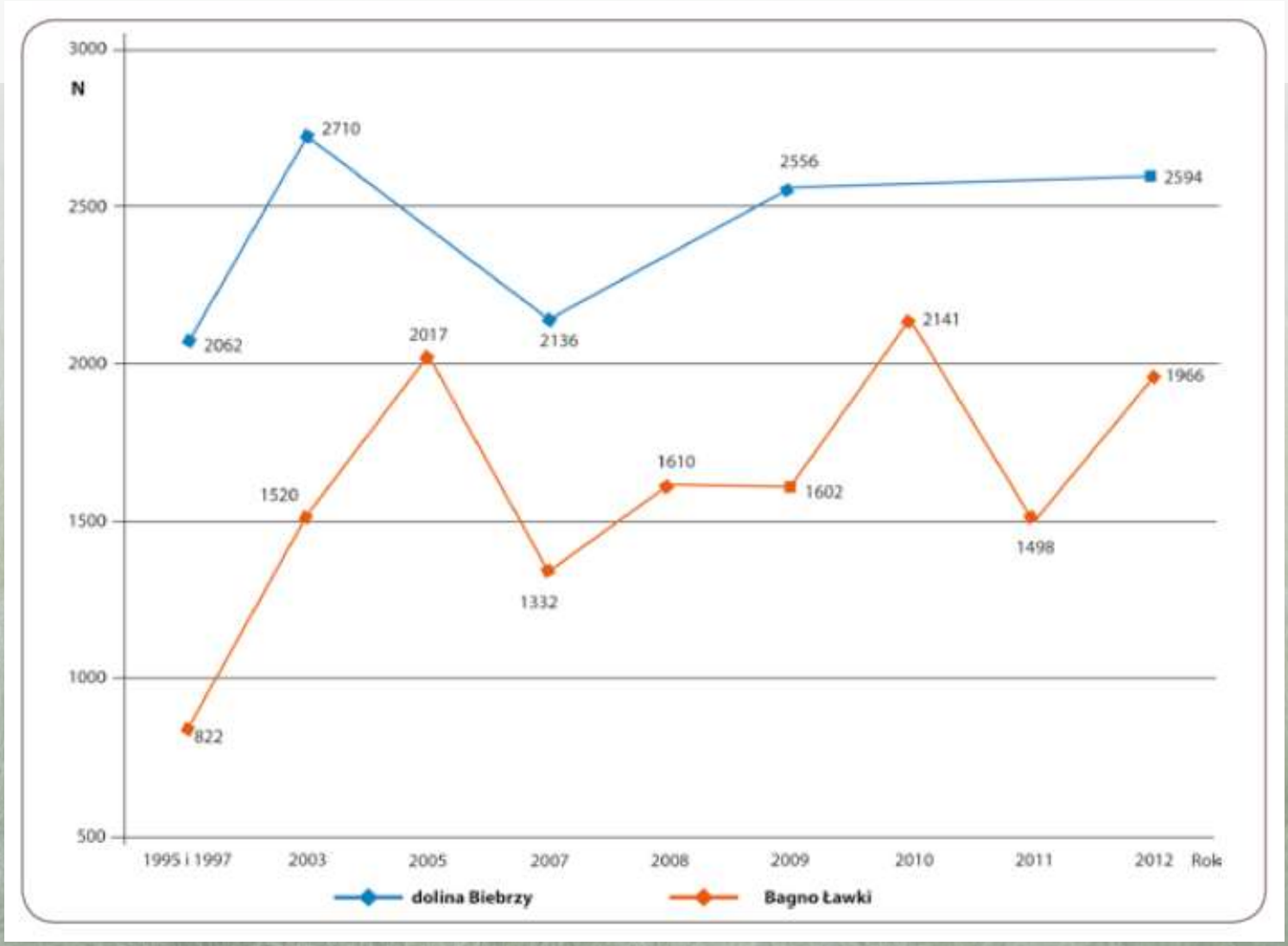

Managed areas on Bagno Ławki in Biebrza National Park, 2005-2010
Once: 1311 ha
Twice: 697 ha
Thrice: 222 ha
Four times: 34 ha
Five times: 39 ha
Total: 2 303 ha (1460 + 480 = 1940 ha planned)
1000
0
1000 Meters


Conservation response assessment
AW males home ranges
Schaeffer H.M., Naef-Daenzer B., Leisler B., Schmidt V., Müller J.K., Schulze-Hagen K. 2000.Spatial behaviour in the Aquatic Warbler (Acrocephalus paludicola) during mating and breeding. J. Ornithol., 141: 418-424
Mean home range: 4,6 ha => circle with radius = ca. 121 m
1000 0 1000 Meters



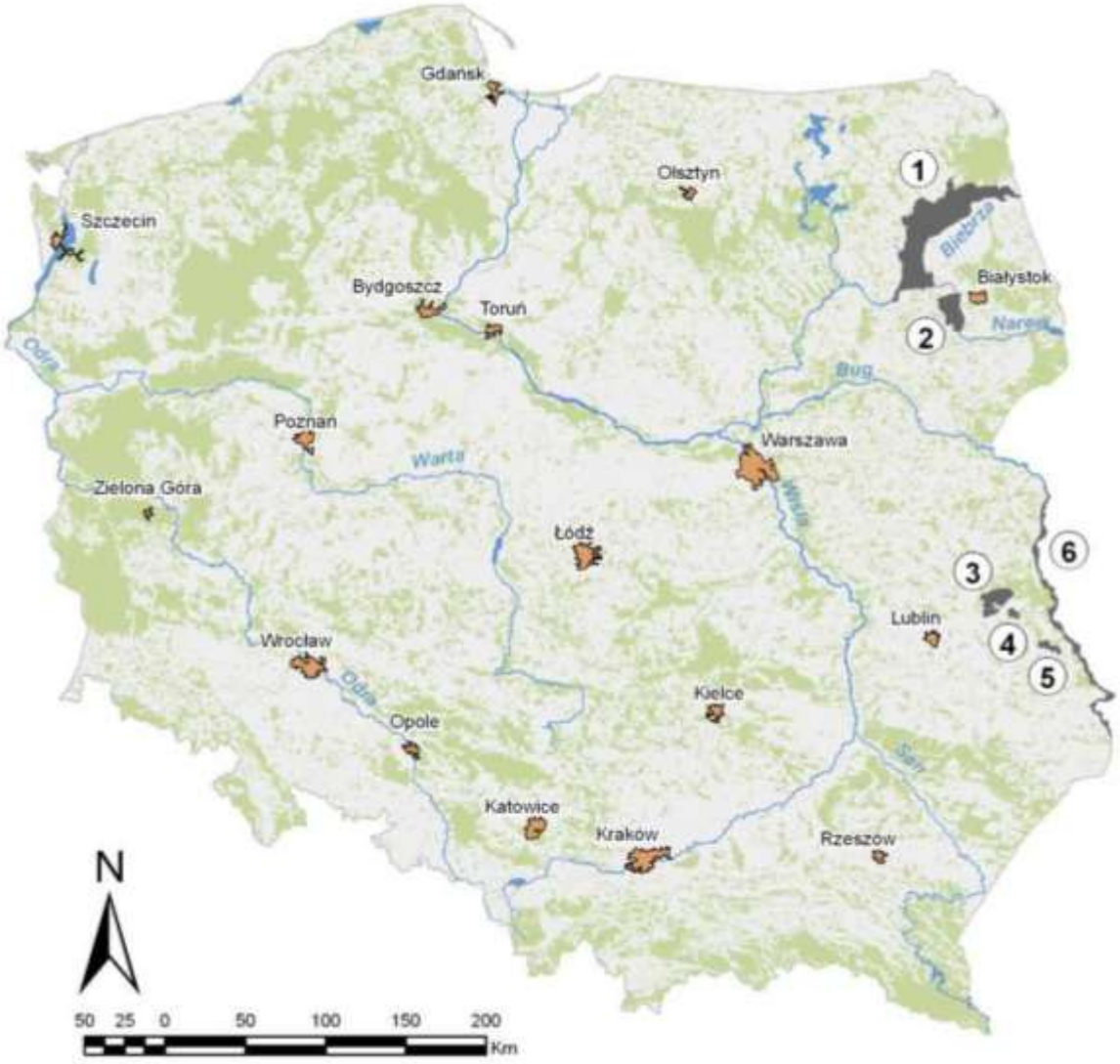
mean and 95% confidence intervals

Stabilisation of AW population on large sites



Source: P. Marczakiewicz & G. Grzywaczewski 2012

LIFE+ AW and biomass project sites



- *6 sites*
- *12,000 ha priority project area*

Bird productivity study

Bird Conservation International, page 1 of 14. © BirdLife International, 2013
doi:10.1017/S0959270913000154

Effect of mowing on productivity in the endangered Aquatic Warbler *Acrocephalus paludicola*

JUSTYNA KUBACKA, STEFFEN OPPEL, ANDRZEJ DYRCZ, LARS LACHMANN, J. PEDRO DUARTE BARROS DA COSTA, ULLA KAIL and WANDA ZDUNEK

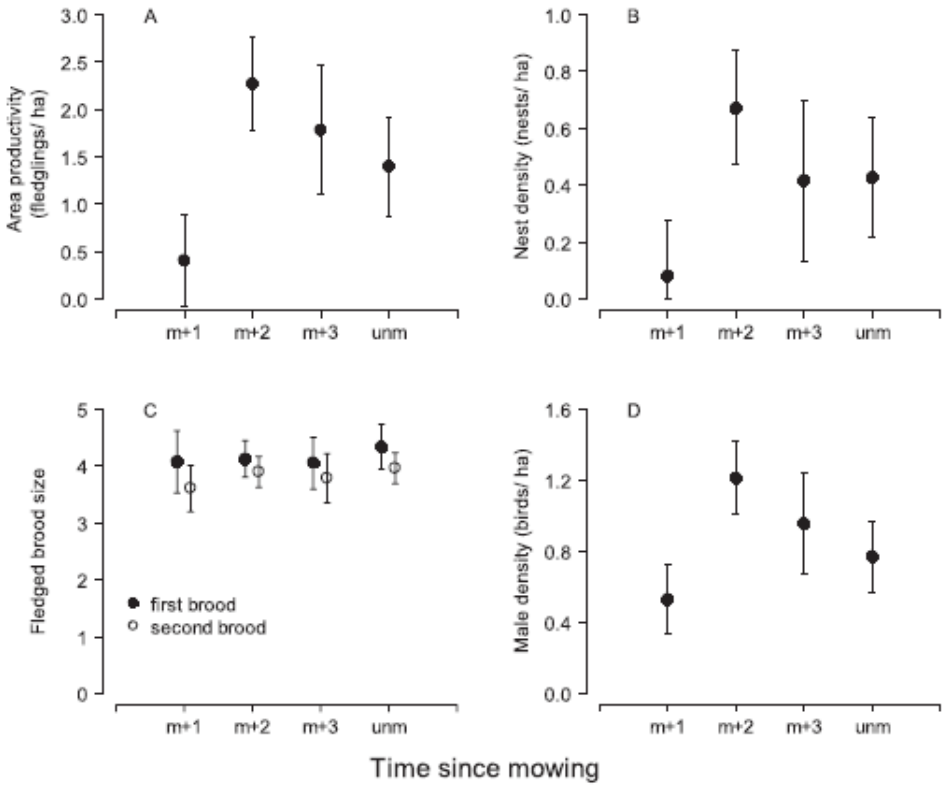
Summary

The Aquatic Warbler *Acrocephalus paludicola* is a globally threatened habitat specialist that breeds in open fens in Central and Eastern Europe. Because bush and reed encroachment threaten many suitable breeding areas, habitat management is necessary to maintain the open wetlands that Aquatic Warblers require for nesting. The effectiveness of mowing as habitat management has so far only been assessed by counting the number of singing males. To assess whether mowing also affected vital reproduction parameters, we analysed Aquatic Warbler productivity in the Biebrza National Park, Poland, on plots in four different successional stages after mowing. Our study showed that productivity was lowest in the first year after mowing, but increased to the highest levels in the second year after mowing. The productivity differences between areas at different stages after mowing resulted from differences in nest density, since we found little evidence for an effect of mowing on nest survival or the number of fledglings produced per successful nest. Nest survival was highly variable between years and varied mostly with nest age and nest initiation date. The density of singing males was positively correlated with both the nest density and the number of fledglings produced in an area, suggesting that this simple indicator could be used to rank the quality of Aquatic Warbler habitats. We recommend that in mesotrophic fen mires, such as the Biebrza valley, mowing as habitat management is applied less frequently than every second year.

Introduction

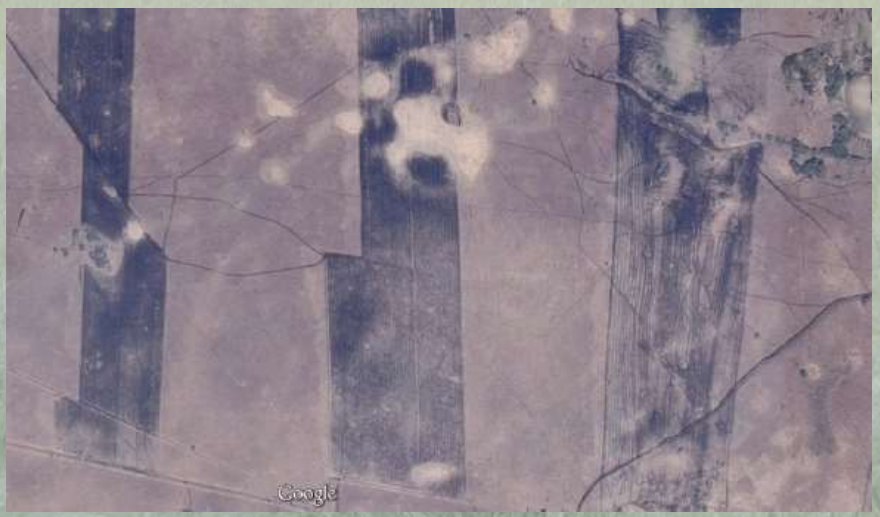
The Aquatic Warbler *Acrocephalus paludicola* is a globally threatened oscine species, with a world population estimated at 10,200–14,200 singing males as of 2001–2007 (Flade and Lachmann 2008). Once widespread, it became extinct in Western Europe during the 20th century and has declined dramatically in Central Europe, which today holds all of its population (BirdLife International 2012). The major reason for this decline has been loss of breeding habitat (Aquatic Warbler Conservation Team 1999, Kozulin and Flade 1999, Kozulin *et al.* 2004, Flade and Lachmann 2008). The Aquatic Warbler is a habitat specialist, breeding in broad lowland river valleys, mainly on mesotrophic and slightly eutrophic sedge fen mires, with water depth 1–10 cm. Most of its habitats are semi-natural and for many centuries relied solely on traditional, extensive agricultural practices (Kozulin and Flade 1999, Flade and Lachmann 2008). The major threats to its breeding habitat used to be drainage and intensification of agricultural use; however, today the main threat is abandonment of land use and eutrophication (Flade and Lachmann 2008). Discontinued land use can lead to expansion of reeds and shrubs, which has been observed to be negatively associated with the number of singing males occupying an area (Kloskowski and

Mowing effects on Aquatic Warbler productivity

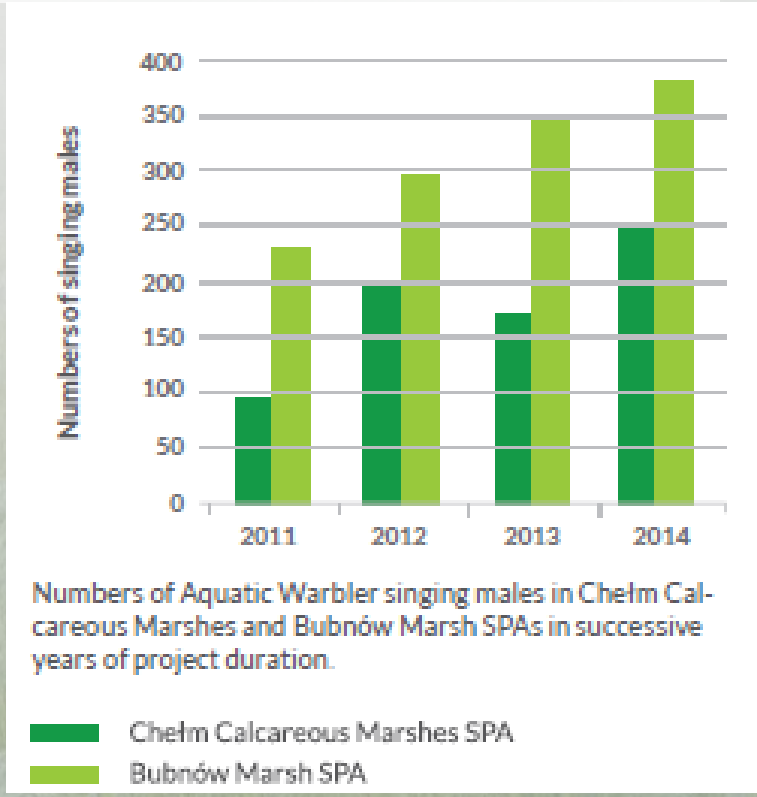


LIFE+ project population response

Chełm SPA



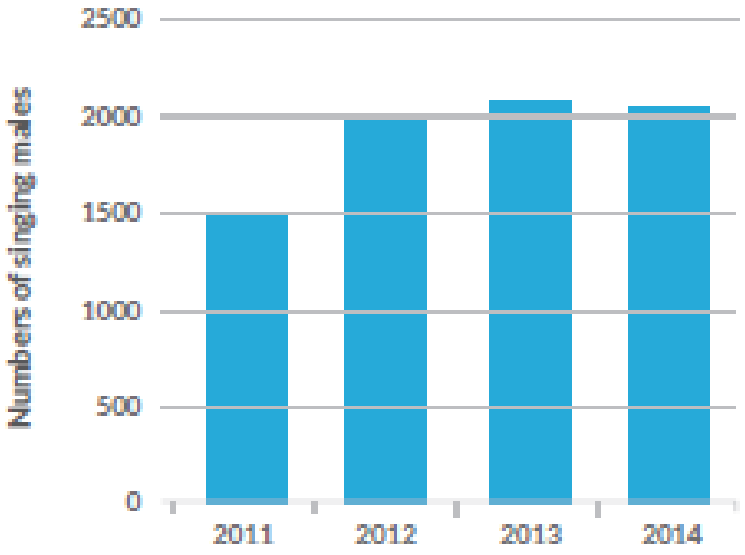
Bubnów SPA
(Poleski NP.)



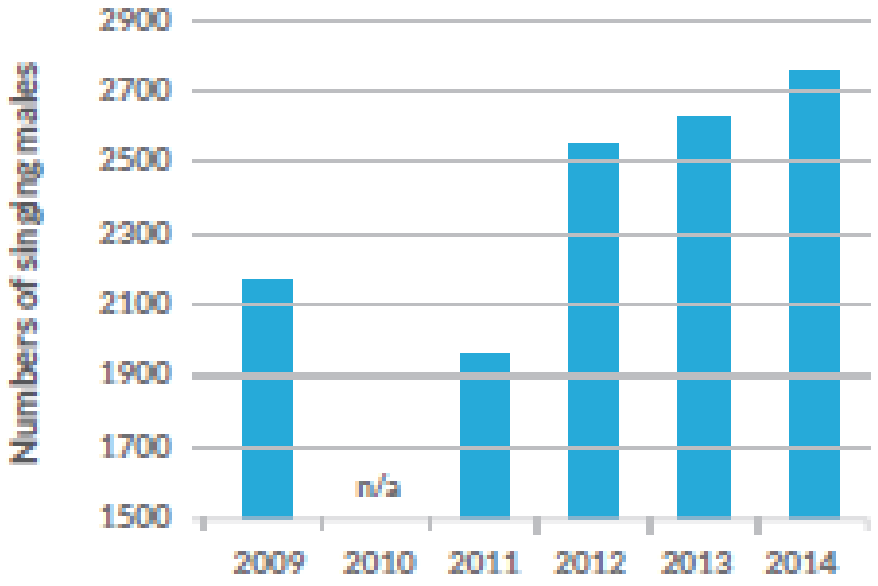
Numbers of Aquatic Warbler singing males in Chełm Calcareous Marshes and Bubnów Marsh SPAs in successive years of project duration.

LIFE+ population response

26% population increase (575 s.m.)



Numbers of Aquatic Warbler singing males in the Ławki Mire (Biebrza Valley) in successive years of project duration.

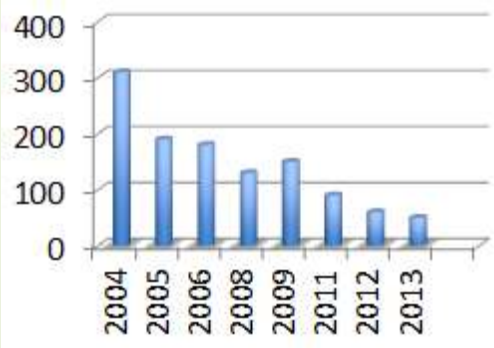


Numbers of Aquatic Warbler singing males in all locations of the project.

Lithuania

Towards favorable conservation status
Lithuania

Lithuanian AW population development:



LIFE+ “Baltic Aquatic warbler” project

Project restoration work:

- Tyrai fully managed areas app. 500 ha;
- Tulkiarage managed areas app. 400 ha
- Žuvintas restoration of app. 100 ha, in addition cleaning a channel
- Pape – clearing of shoots
- Liepaja

Maintainance

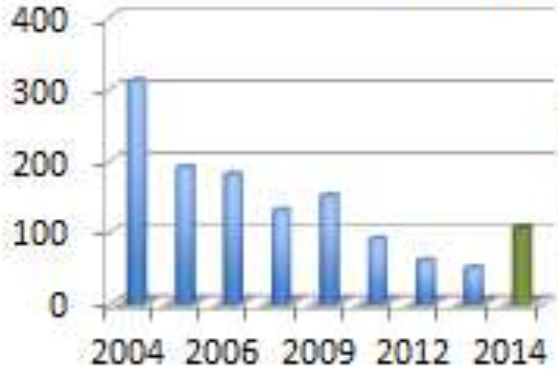
- Šyša – as usual facilitating help to farmers to harvest the areas;

Towards favorable conservation status
Lithuania

With additional financial support performed pilot application of agri-env. measure covering 200 ha

Towards favorable conservation status
Lithuania

106 singing males



Šyša

Tyrai

Alka

Uostadvaris


Belarus

Towards favorable conservation status
Belarus

Comparison population estimates in late 1990-s and recent monitoring data from the years 2010-2013, Aquatic Warbler numbers decreased

- **for Zvaniec from 3 000 – 8 000 to 2 200 – 4 400,**
- **for Sporava from 700 – 2 100 to 500 – 600,**
- **for Dzikoje from c. 1 500 to 150 – 200.**

- **TOTAL in Belarus (2013): area – 13 855**

  population – 2 968 – 5 548

Towards favorable conservation status
Belarus

Recent conservation projects:

Implementing urgent conservation actions in mesotrophic fen mires in Belarus (162/12/031) (04/2003-03/2006);

Catalyzing sustainability of the wetland protected area system i Belarusian Polesie through increased management efficiency and realigned land use practices (00048429) – (04/2006-04/2011);

Restoring Peatlands and applying Concepts for Sustainable Management in Belarus – Climate Change Mitigation with Economic and Biodiversity Benefits (BMU-No.:II.C53) – (12/2009-07/2011);

Towards favorable conservation status
Belarus

Towards favorable conservation status
Belarus

APPROVED

Deputy Minister of Natural Resources and Environmental Protection of the Republic of Belarus
I.M. Kachanovsky
16.12.2014

NATIONAL ACTION PLAN
for implementation of the Memorandum of Understanding concerning Conservation Measures for the Aquatic Warbler*

#	Activities	Outcomes	Agencies in charge	Timeframe (years)
1.	Introduce an efficient system of clearing and use of the shrub and reed biomass in wetlands crucial for the species conservation: Zvanets Republican Landscape Reserve – 3500 ha; Sporovsky Republican Biological Reserve – 500 ha; the Dikoye Swamp – 300 ha; Servech Republican Hydrological Reserve – 150 ha	Rehabilitation of approximately 50% of degraded habitats of aquatic the warbler (open sedge fens)	Drogichin Regional Executive Committee, Kobrin Regional Executive Committee, Pruzhany Regional Executive Committee, Ivatsevichi Regional Executive Committee, Bereza Regional Executive Committee, Svisloch Regional Executive Committee, Glubokoye Regional Executive Committee, Dokshitsy Regional Executive Committee, «Belovezhskaya Pushcha National Park» State Nature Protection Establishment	2015–2020
2.	Establish and provide for the operation of a center for management of the aquatic warbler key habitats at the premises of the Sporovsky Republican Biological	Efficient management of the aquatic warbler key habitats in the Republic of Belarus	Bereza Regional Executive Committee, «Sporovsky Republican Biological Reserve» State	2015-2016

Towards favorable conservation status
Belarus

New conservation projects:

The activities will be implemented under the 2015-2019 National Program for Development of a System of Specially Protected Natural Sites

Within two big EU and UNDP projects:

- **EU/UNDP Project "ClimaEast: Conservation and Sustainable Management of Peatlands in Belarus to Minimize Carbon Emissions and Help Ecosystems to Adapt to Climate Changes";**
- **the GEF/UNDP Project "Development of Integrated Approaches to Wetland Management based on Multi-Purpose Landscape Planning to Obtain Multilateral Environmental Benefits".**

Towards favorable conservation status
Belarus

Major threats – bush encroachment and overgrowing by extensive reedbeds in effect of eutrophisation

Fire as a management tool

Towards favorable conservation status
Ukraine

AW within protected area network

Most part of birds (more than 55 %) habitats is located on the territories of national natural parks.

5 % and 19 % of Ukrainian AW breed on territories of zakazniks of national and local importance, respectively.

Nearly 15% of the birds habitats are outside of protected areas.

Majority of these territories are at different stages of preparatory works on giving them the protected status.

In 2007 the National Nature Park “Prypyat-Stokhid” was established.

Towards favorable conservation status
Ukraine

The greatest number of AW in Ukraine is located in valley of the rivers Prypiat and Tsyr between Vetly, Birky and Tsyr (UA-14). The part of the area is under influence of drainage canals;

Three wooden dams with sluices were constructed on the central canal during October 2005. Water levels in these habitats will be adjusted with the help of these dams during "dry season" in 2006-2008.

During 2010-2014 the number of AW was very high on the territory (1-2 males/ha).

Towards favorable conservation status
Ukraine

In the autumn of 2012, an area of 25 hectares was chosen on the monitoring site for cleaning it from the bushes (UA-14. Upper Prypiat, area between Vetly, Birky and Tsyr).

This area was cleared from bushes in winter and early spring of 2013. Young shoots were cut down in winter 2013/2014.

In 2014, 21 males were counted during the evening census on area of 10 hectares. For comparison, 11 males were counted on this area in 2010.

Towards favorable conservation status
Ukraine

Majority of AW sites within protected area

Regular monitoring of sites

Small scale of restoration works

Poor economic situation

NEED FOR BIG CONSREVATION PROJECTS

Conclusions

- We failed to meet the short term ISAP target;
- We have lost the HU population and next are on the brink of extinction
- We have learned, and now we know how to save the Aquatic Warbler in breeding areas
- We have limited capacity
- To meet 2020 ISAP target and to save AW WE SHOULD ACT NOW!

Thank for your attention