Burning experience in Belarus

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The key Aquatic Warbler breeding habitats in Belarus



- Zvaniec, Sporava and Dzikaje hold **95%** of Belarusian and **46%** of the global AW population.

Main threats:

Floods

- Lack of water
- Overgrowing

One of main threats: overgrowing of open fen mires with reed

over the 5-year period with no fires, reed density has increased to 150-270 per m², rendering the habitat unsuitable for AW

ELECTRON BEAUTION

One of main threats:

overgrowing with bushes.

-overgrowing leads to decrease of the area of open fen mires and to fragmentation of suitable habitats.

Changes in the area of different ecosystems.

	Sporava	Zvaniec	Dzikaje
	1955-2006	1955-2006	1950-1996
Open fen mire	-20,9%	- 11,4%	- 10%
Forest and bushes	+19,1%	+13,5%	+8%

Zvaniec in 1950



Основные биотопы республиканского ландшафтного заказника "Званец" Zvaniec in 1996

One of main threats: accumulation of old vegetation

Main reasons of a thick layer of old vegetation formation:

- absence of spring floods;
 cessation of haymaking;
- absence of fire.

Impact of Dry Vegetation Accumulation on AW Population Density



The Law of the Republic of Belarus 10th July 2007. N 257-3 On Wild Animals Approved by Parliament

22nd June 2007.

Article 17. Paragraph 8.

Scientifically grounded **burning** of dry vegetation such as grasses, reeds and rushes is allowed with the purpose to improve living habitats of wild animals listed in the Red Book and species protected by International Legislation. The above mentioned works can be implemented on **Special Protected Areas** in case of absence of contradiction with established protection regime.

Presidential Decree

8th December 2005. N 580

On some measures to increase efficiency of hunting and fish industry and to improve their state management

Article 2. Paragraph 7.2.

While executing business and other activities in frame of **hunting areas** land users are forbidden to burn dry vegetation such as grasses, reeds, rushes and other wild plants in living habitats of wild animals. The only exception is scientifically grounded **burning** of above mentioned vegetation with the purpose to improve living habitats of wild animals listed in the Red Book of the Republic of Belarus.

Impact of Fires on the Aquatic Warbler

Scenario 1 – burning of peat - AW disappears within 2 years

Number Proportions of Invertebrae Groups at Different Checkplots



1.5 - 2 times decrease in number in burnt areas was reported for spiders and major taxonomic groups of insects: *Diptera, Coleoptera, Hemiptera, Homoptera*

Impact of Fires on the Aquatic Warbler

Scenario 2 – complete burning of old vegetation - AW density does not change, breeding success declines, density growing during subsequent years

Impact of Fires on the Aquatic Warbler

Scenario 3 – partial burning of old vegetation - AW density could grow

As well as old vegetation, fire also destroys osiers and young birches.

The main skill which helps the aquatic warbler to adapt to fires with the absence of old vegetation for disguising its nests is the ability to build them in original ways.

In a burnt-out tussock: -no dry grass because of fire.

Under cover of green vegetation only: -no dry grass because of fire.



Another adaptation to fires that the aquatic warbler has is the ability to bide its nesting time. With no old vegetation, a significant part of birds begin nesting only after green vegetation has fully developed and therefore can be used for disguise.

Favourable conditions:

2 peaks of nesting during the breeding season

Per year with vegetation burning: nesting period is prolonged



Required Conditions for Controlled Fire

• The mire surface should be covered with water or ice at or above the level of tussock tops

• The soil surface of mineral islands and other adjacent lands should be covered with snow or be wet enough to prevent spreading of fire

Such conditions can usually be observed in late autumn and at the end of winter





Advantages of Controlled Fire:

- improves vegetation efficiency
- leads to increase in insect biomass
- creates good nesting conditions due to the partial preservation of old vegetation
- creates new habitats for plants of open sedge fen mires by burning down dense reed beds
- prevents spreading of bushes
- a lower quantity of old vegetation decreases a chance of occasional fires during breeding season

Negative consequences of fires:

- remaining ash results water and soil mineralization speeding up natural succession;
- burning of old vegetation decrease the speed of peat formation.