Role of the Republic of Belarus in conservation of the European eel world population

Second Meeting of Range States for the European Eel
Malmo, 15 May 2018

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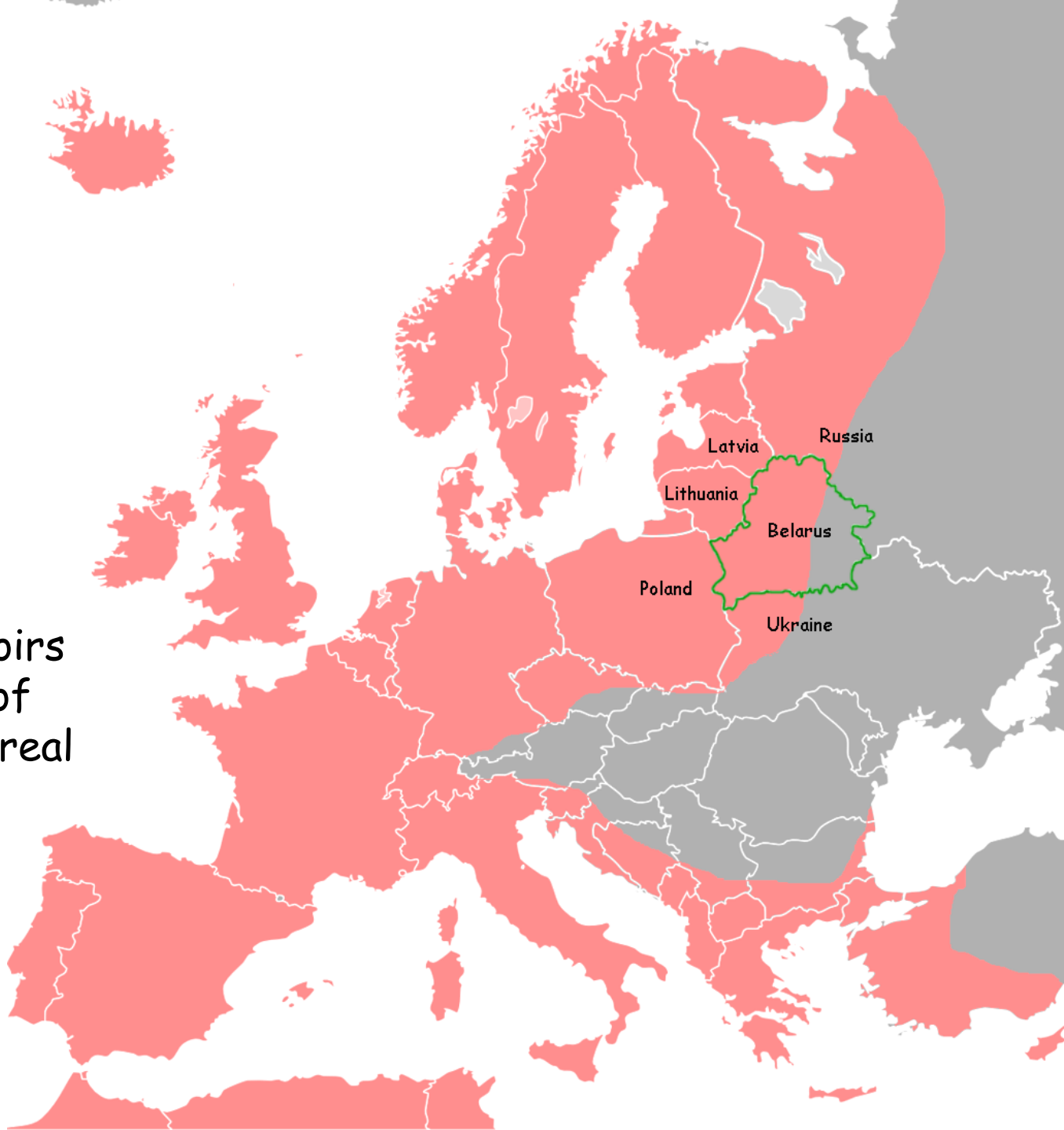
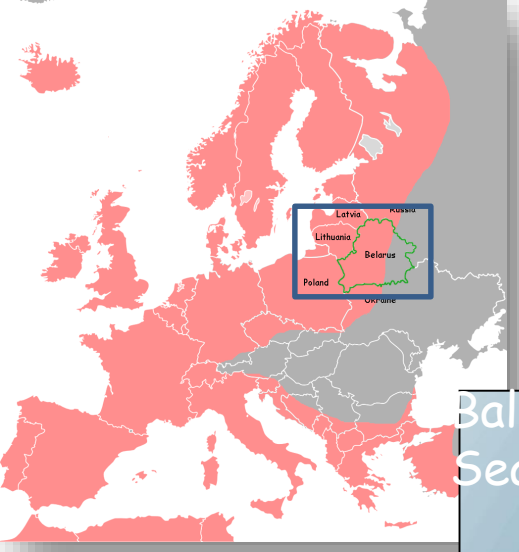
Inland water reservoirs of Belarus are part of natural trophic eel areal





Historically eel came in a natural way up to 50s of the XX century from the Baltic Sea upward the Western Dvina (Daugava) and Neman (Nemunas) Rivers and its feeders up to its damming

Zap. Dvina (Daugava) River Basin

Neman River Basin

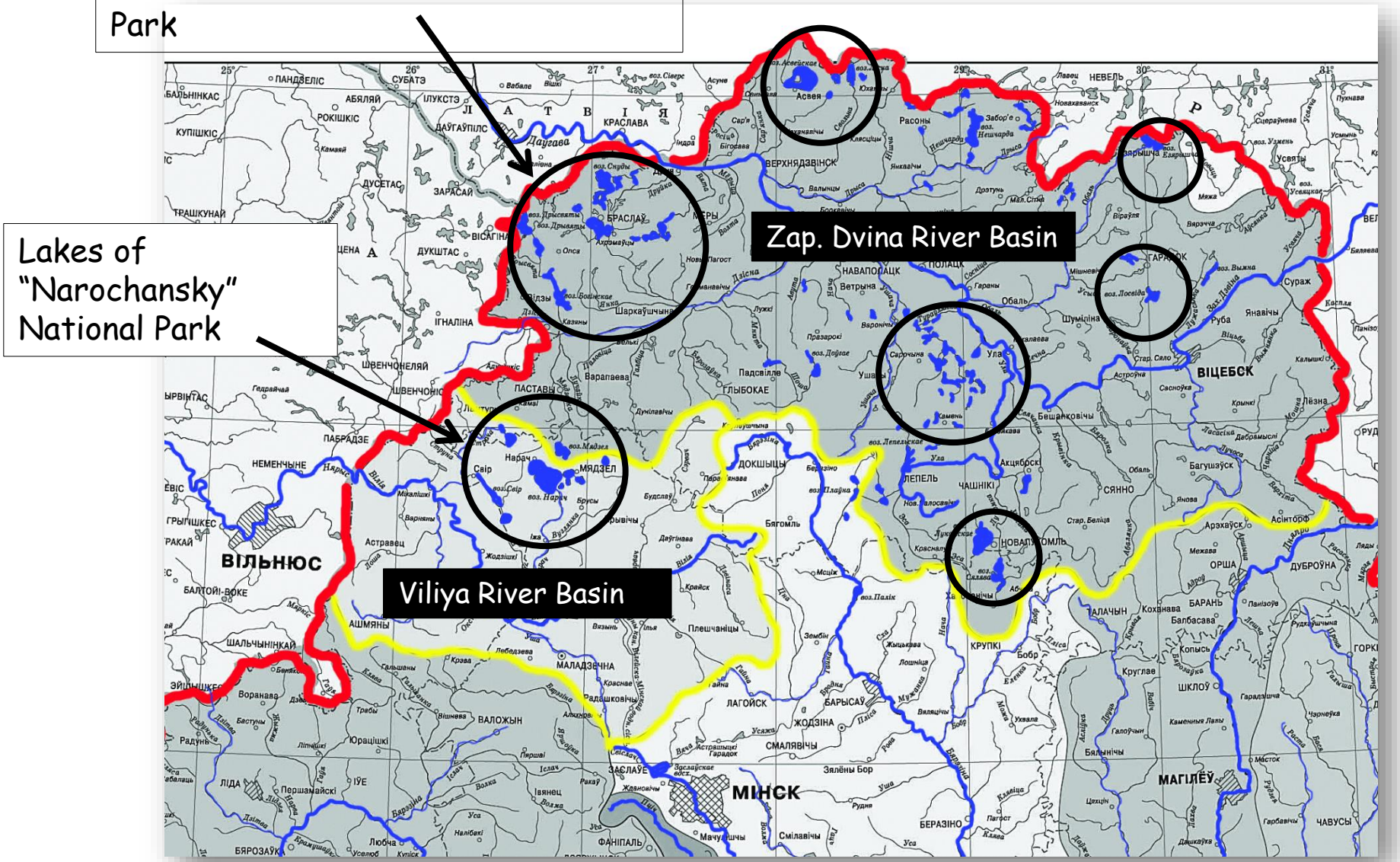
Baltic Sea
Estonia
Latvia
Russia
Lithuania
Russia
Poland
Belarus
200 Kilometers
N

Restocking indicators of inland water basins by European eel in Belarus (1956 - 2008)

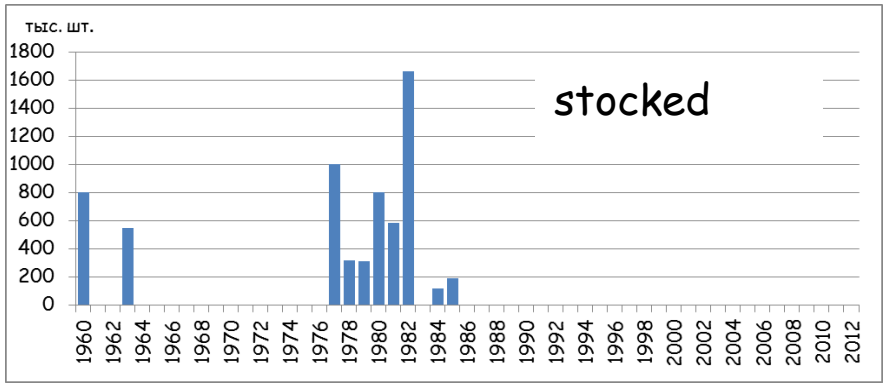
River basin	Stocked water reservoirs		Number of juvenile eel stocked	
	units	%	Thousand of units	%
Neman	11	22,00	18 527,3	25,83
Western Dvina	39	78,00	53 194,2	74,17
IN TOTAL	**50**	100	**71 721,5**	100

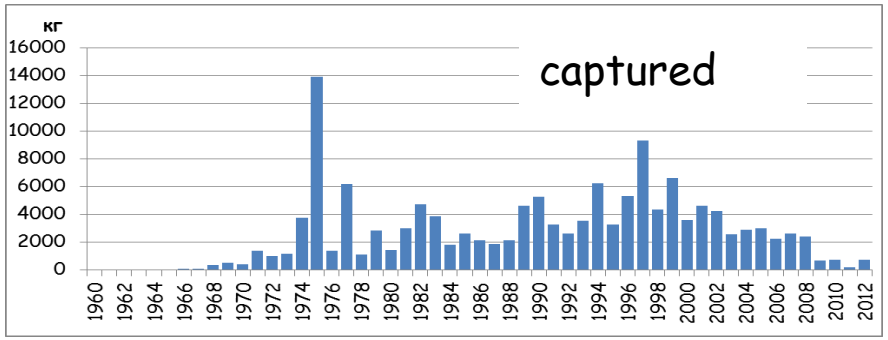
Stocking has been made into water basins of the rivers which were used for migration traditionally (Neman and Western Dvina)

Stocking material - from Great Britain and France

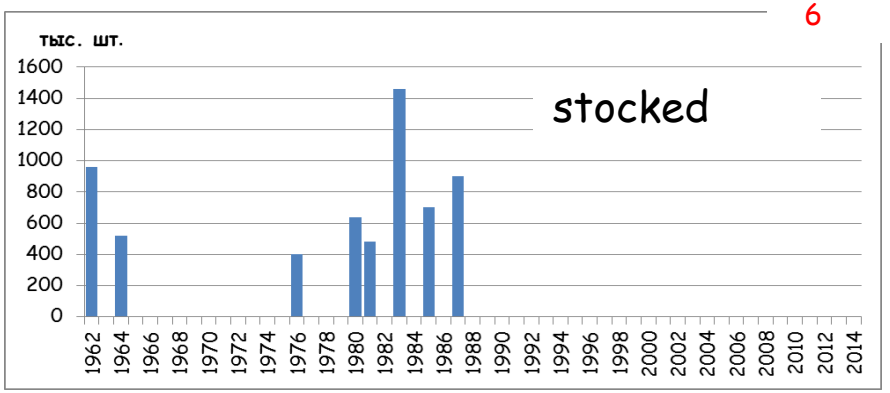


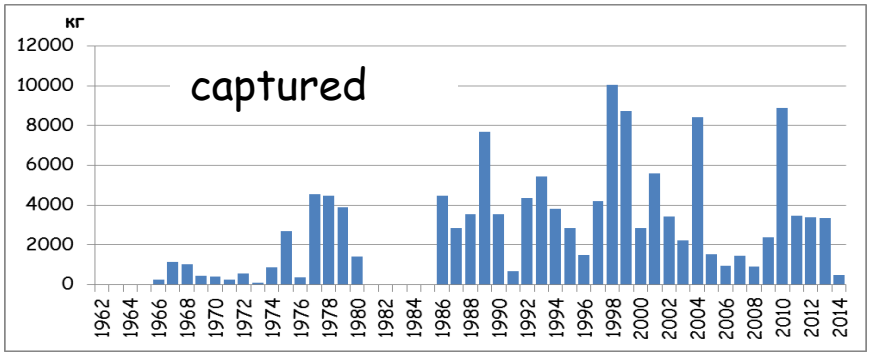
Basic lake systems of Belarus stocked with eel





Nescherdo lake
(Western Dvina (Daugava) river basin)

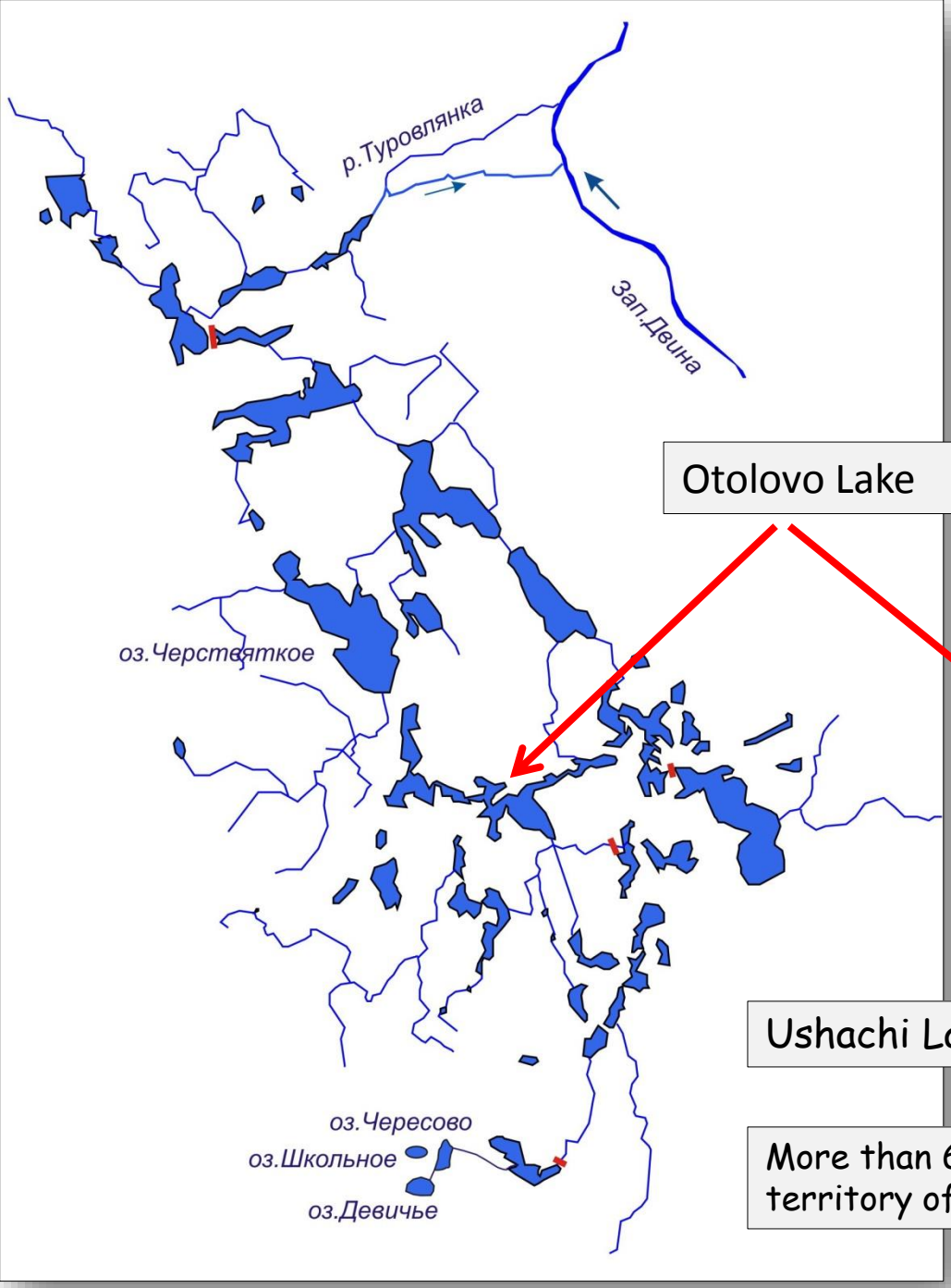




Svir' and Vishnevo lakes (Neman
(Nemunas) River basin)

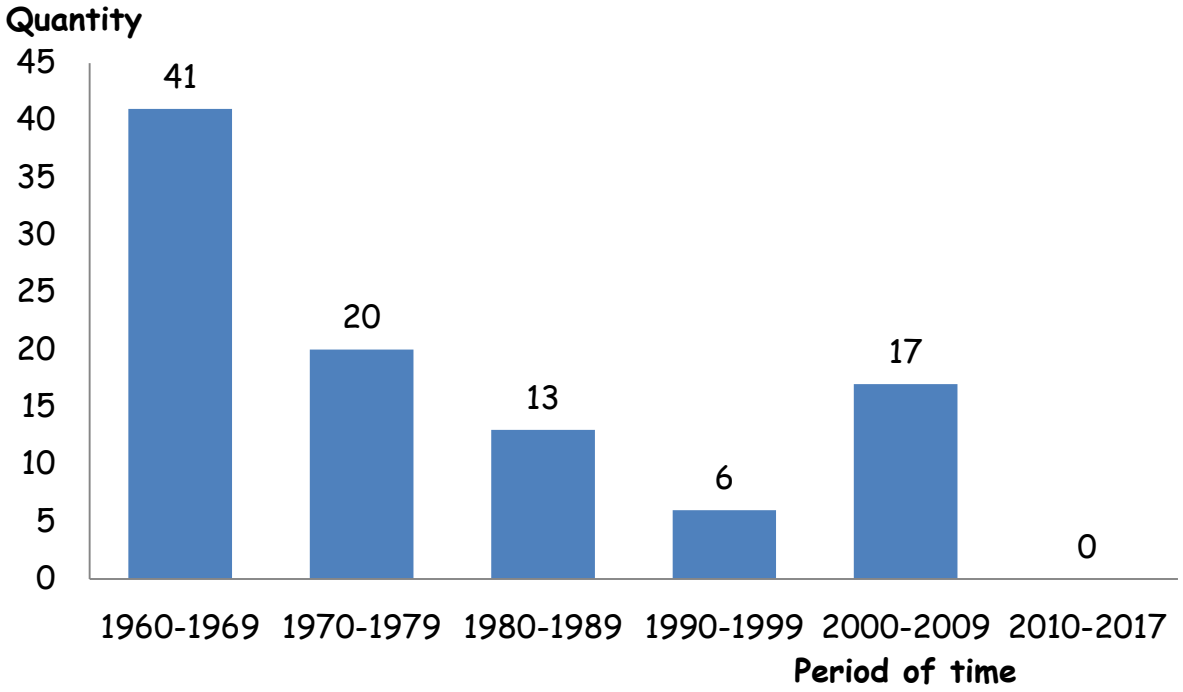
At present inland water reservoirs of Belarus are inhabited by eel stocked after 1985.
(24 lakes were stocked in total, including 5 in Neman River basin and 19 in Western Dvina River basin).

Otolovo Lake was stocked with eel in 2007 (96,6 thousand of units)



Ushachi Lakes group

More than 60 lakes with total territory of 7 500 ha



Quantity of water reservoirs in Belarus stocked with eel in different periods

Since 2008 the deliveries of eel (stocking material) to Belarus have been discontinued in connection with the Resolution of the EU Council dated 18.09.2007 № 1100/2007

There are two main issues which have significant importance for natural eel reproduction:

- conditions to reach downstream migrant stage in the nursery grounds and
- possibility for unhampered downstream migration

Commercial return of eel in water reservoirs of Belarus is indirect indicator of escapement index

Pre-war stocking - 5,7 %

Stocking in 50th-60th – 10 %

At the beginning of XXI century - 4 %

2 peaks of mass migration of silver eel from Belarus: spring (maximum in May) and autumn (maximum in September)

Specialized fishing of migrating eel in Belarus is permitted during 2 spring months only in places specified by appropriate Resolution of the MNREP.
Fishing is implemented by special stationary and portable traps

Проект

МИНИСТЕРСТВО ПРИРОДНЫХ РЕСУРСОВ И ОХРАНЫ ОКРУЖАЮЩЕЙ СРЕДЫ РЕСПУБЛИКИ БЕЛАРУСЬ

ПОСТАНОВЛЕНИЕ

№ г. Минск

Об определении мест и условий промыслового вылова угря без соблюдения промысловой меры в рыболовных угодьях в 2017 году

На основании пункта 105 Правил ведения рыболовного хозяйства и рыболовства, утвержденных Указом Президента Республики Беларусь от 8 декабря 2005 г. № 580 «О некоторых мерах по повышению эффективности ведения охотничьего хозяйства и рыбохозяйственной деятельности, совершенствованию государственного управления ими», и пункта 9 Положения о Министерстве природных ресурсов и охраны окружающей среды Республики Беларусь, утвержденного постановлением Совета Министров Республики Беларусь от 20 июня 2013 г. № 503 «О некоторых вопросах Министерства природных ресурсов и охраны окружающей среды Республики Беларусь», Министерство природных ресурсов и охраны окружающей среды Республики Беларусь ПОСТАНОВЛЯЕТ:

1. Установить, что промысловый вылов угря без соблюдения промысловой меры в период с 1 апреля по 30 мая 2017 г. в Минской области и с 10 апреля по 8 июня 2017 г. в Витебской области осуществляется:

стационарными ловушками в водотоках по перечню согласно приложению 1;

переносными ловушками с ячеей не менее 16 миллиметров:

на акватории водоемов в радиусе не более 250 метров от мест впадения, истока водотоков или соединения с другими водными объектами по перечню согласно приложению 2;

в реках по перечню согласно приложению 3.

2. Настоящее постановление вступает в силу после его официального опубликования.

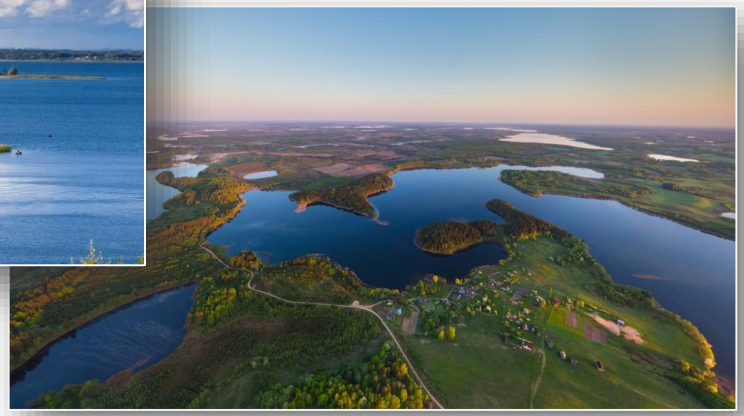
Министр А.М.Ковхуто

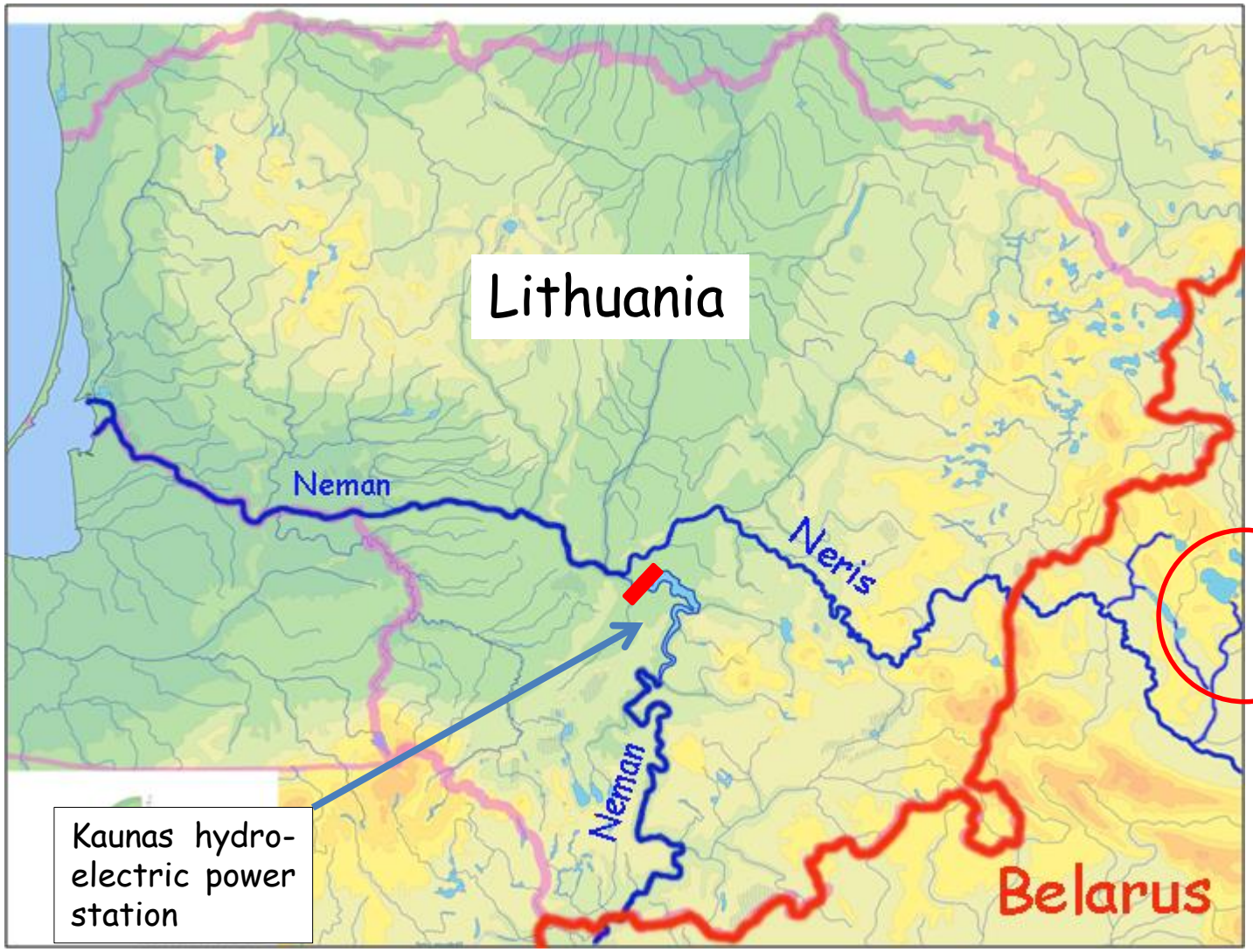
At the initiative of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus the research project "Estimate the amount of annual European eel downstream migration from Belarus water basins to transboundary river basins with a view to sustainable use of eel resources" was carried out by the Center for Bioresources of the National Academy of Sciences of Belarus"

This has been determined that escapement index of migrating eel from water basins of Belarus in spring period of the years 2014-2016 amounts to 61,21% on the average from total migrating eel quantity which is higher than that one established by the Resolution of the EU Council dated 18.09.2007 № 1100/2007

More than 10 thousand lakes in Belarus

Potentially there are 318 lakes with total territory of more than 91 thousand ha which can be used as eel nursery grounds

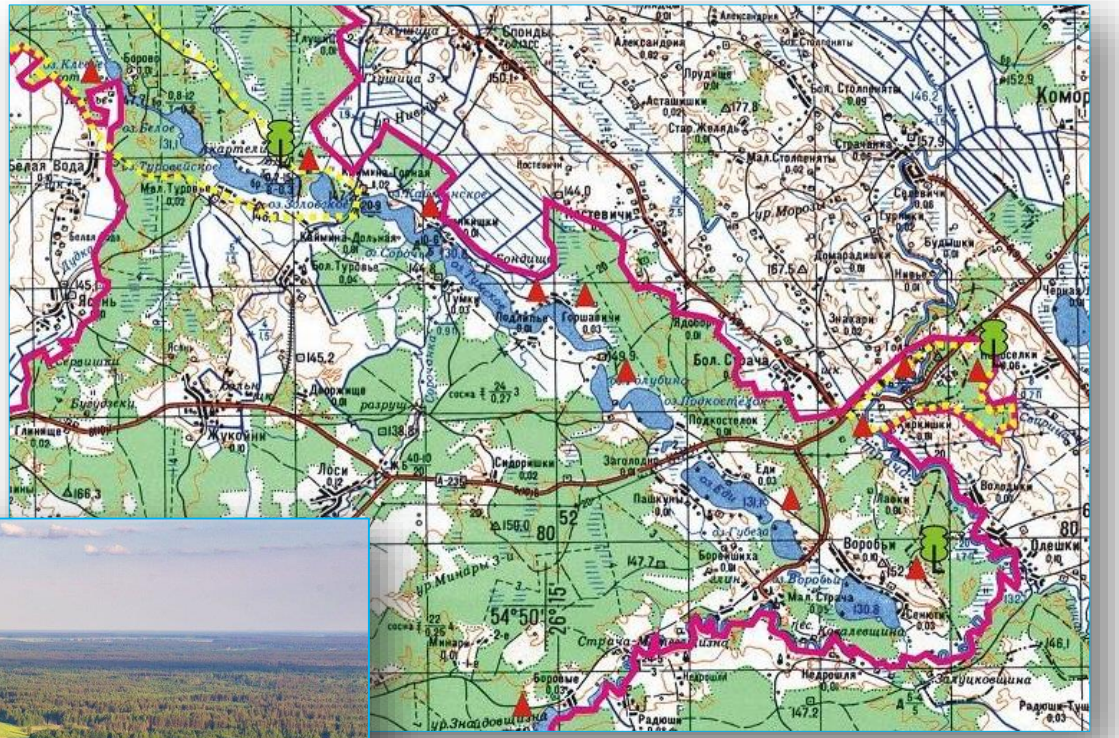




Free-flowing way of the European eel migration from Belarussian water reservoirs to the Baltic sea

Belarus could make accent on stocking Viliya (Neris) river basin

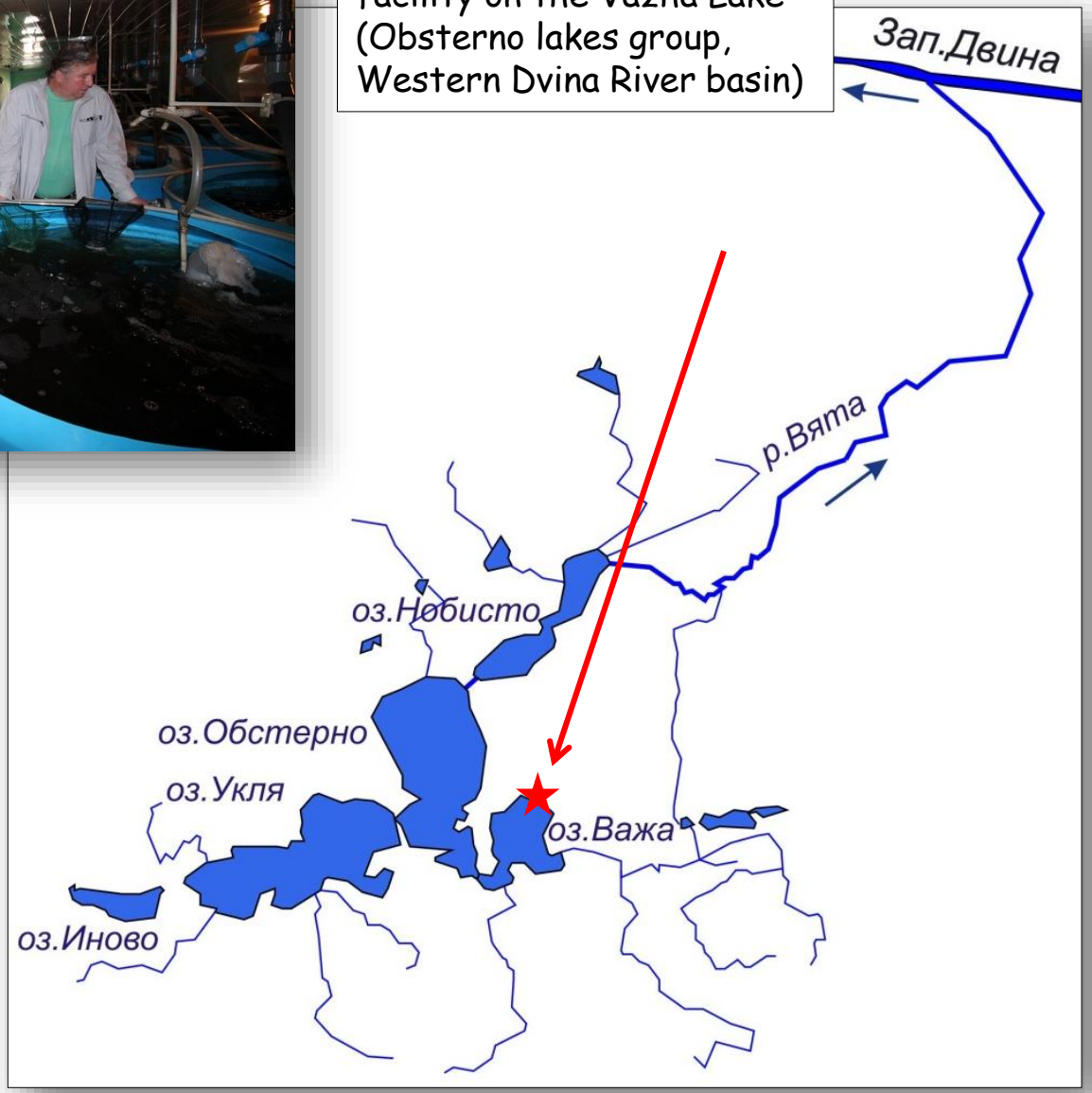
Besides abovementioned lakes of "Narochansky" National Park there is great potential in this river basin for eel



Republican Landscape Reserve "Sorochanskie Lakes"

14 lakes which are going one by one as integrated water chain of 18 km

Specialized glass eel facility on the Vazha Lake (Obsterno lakes group, Western Dvina River basin)



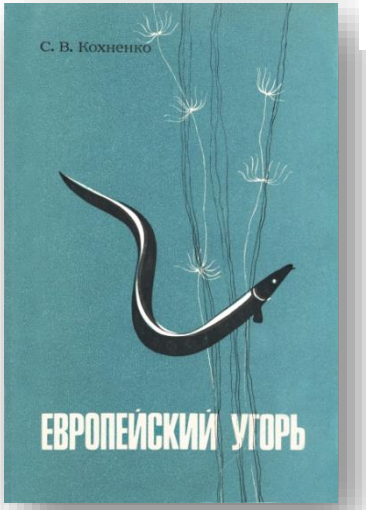
There are technical capacities enabling to increase the survival of the stocking material by keeping it for a longer period and rearing of glass eel on specialized fish-breeding farms (there are 5 such fish-breeding farms in Belarus)

Dr. Serafim V. Kohnenko

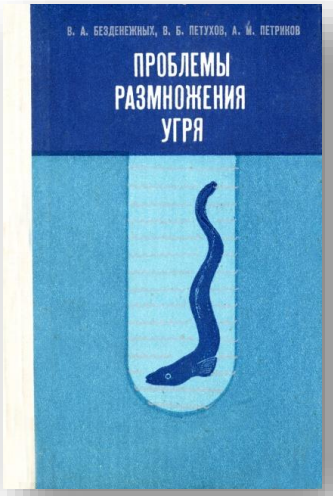
The works were started in the early 50s of the XX century

Main publications

Biology and distribution of eel, 1958



European eel, 1969

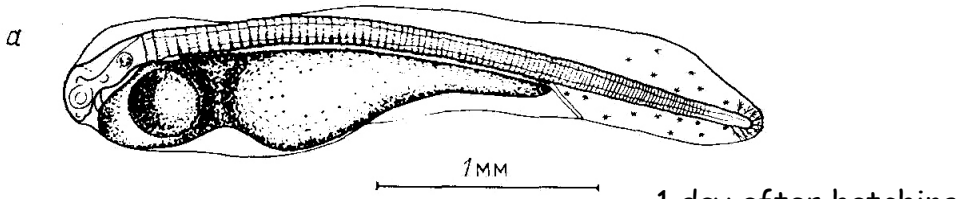


Issues of eel reproduction, 1983

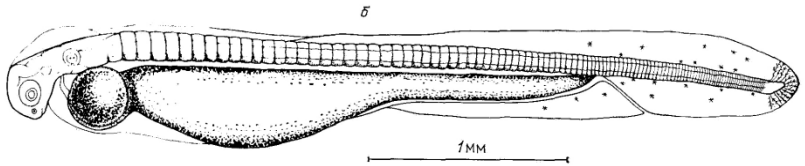
Ecological and physiological plasticity of the European eel *Anguilla anguilla L.*, 1977

In 1975 eel reproductive products were obtained for the first time in the USSR

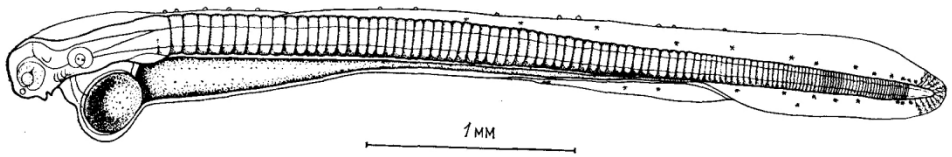
In 1982 fertilization of eggs was made and viable larvae were received for the first time in the world experimental practice.
Embryogenesis and eel larvae early life stages have been described



1 day after hatching

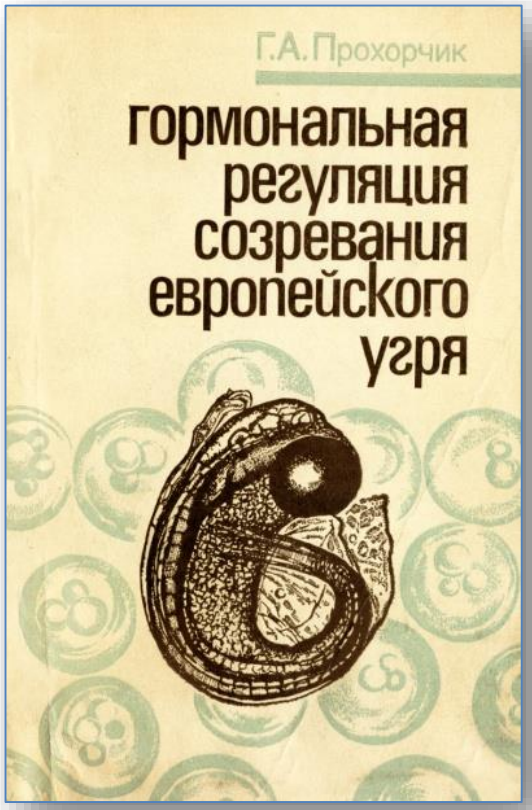


2 days after hatching



4 days after hatching

Prolarvae of the European eel



Hormonal regulation of eel maturation, 1990

European eel is native representative of ichthyofauna of Belarus.

Inland water reservoirs of Belarus are part of natural trophic eel areal where it came in a natural way from the Baltic Sea upward the Western Dvina (Daugava) and Neman (Nemunas) Rivers and its feeders up to its damming

As the result of damming mass natural migration of eel to inland waters was practically stopped

Eel fishery in Belarus is based exclusively on stocking of inland water reservoirs with elvers

Regular stocking of Belarussian water reservoirs with elvers made this possible to form numerous local populations achieving migrating stage

Belarus has big potential with water reservoirs which can be used as eel nursery grounds

Complex system of measures was developed and under implementation in Belarus on protection and recovery of the stock of European eel, including measures on implementation of EU Council Regulation dated 18.09.2007 № 1100/2007 :

-Fishing of eel is strictly licensed

-Amateur (recreational) fishing of eel forbidden

-Eel inhabits mainly in the lakes on the territory of National Parks what guarantees additional protection

-Eel Recourse Management Plan for the period up to 2020 has been developed

-Escapement index of migrating eel from water basins of Belarus in spring period amounts to 60%

Belarus has school of thought on eel investigation with depth of practical experience

There are technical possibilities in Belarus to increase the survival of the stocking material by keeping it for a longer period and rearing of glass eel on specialized fish-breeding farms

Removal of a ban on supply of the stocking material to the Republic of Belarus will give possibility
(1) to maintain substantial part of natural trophic eel areal and

(2) to provide recruitment of its world population by means of brood fishes migrating to spawning places from Belarussian water reservoirs

Годы перекрытия плотинами ГЭС путей миграции угря в водоемы (из водоемов) Беларуси

ГЭС	Река	Год ввода
Кегумская (Латвия)	Zap. Dvina (Daugava)	1940
Плявинская (Латвия)	Zap. Dvina (Daugava)	1966
Рижская (Латвия)	Zap. Dvina (Daugava)	1974
Каунасская (Литва)	Neman (Neris)	1960

В 2005 г. в НП «Нарочанский» европейским угрем было зарыблено озеро Большие Швакшты. Всего в водоем было выпущено 444,5 тыс. шт. стекловидной личинки угря. Впервые нагуливающийся угорь был отмечен в промысловых уловах в озере в 2009 г., в последующие годы вылов нагуливающегося угря отмечается уже регулярно. Специализированный весенний (как и осенний) лов мигрирующего угря из данного водоема не ведется, и весь (100 %) покатный угорь из озера уходит по р. Страча в р. Вилия.

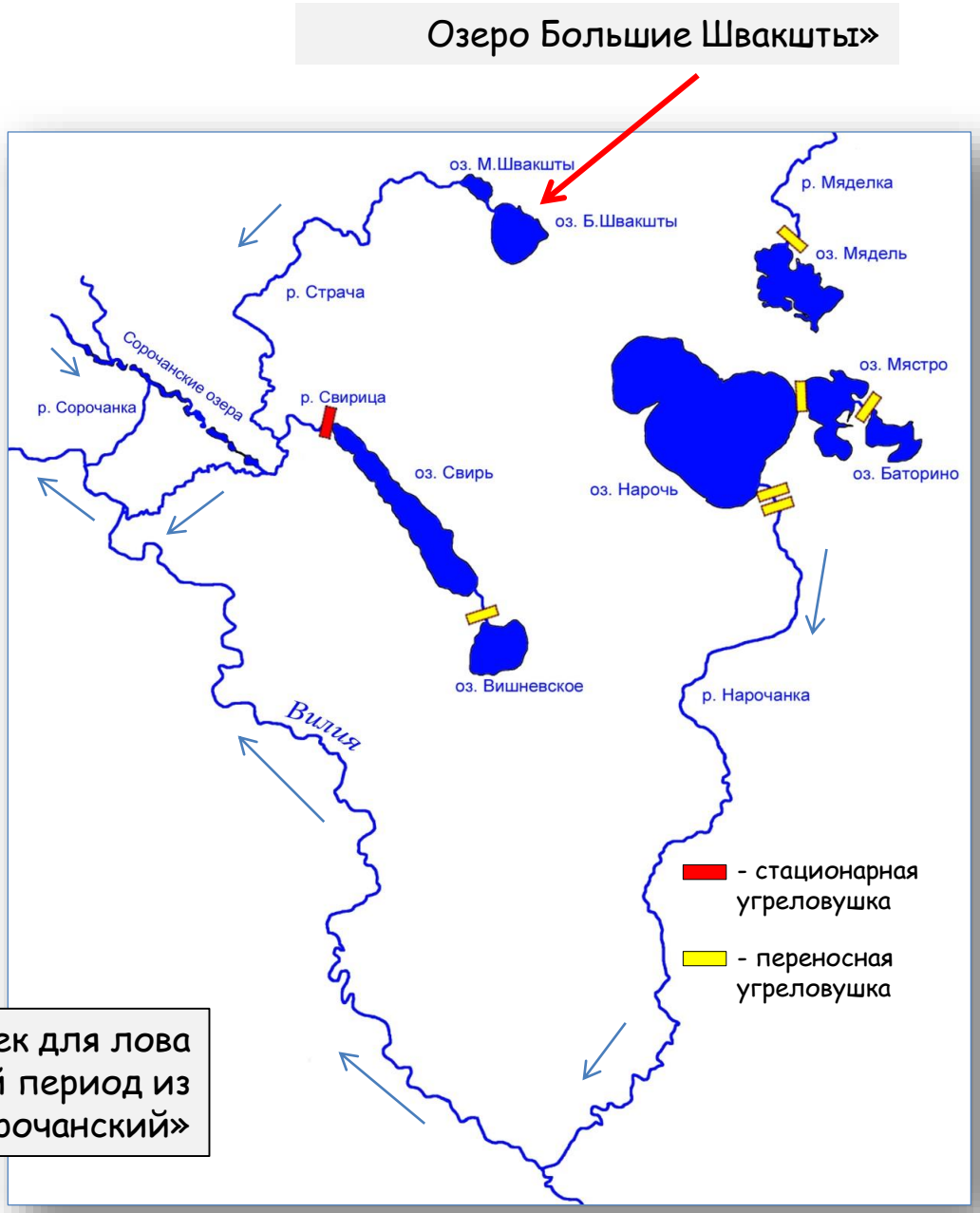


Схема расположения ловушек для лова мигрирующего угря в весенний период из водоемов НП «Нарочанский»