



# Ukrainian fisheries monitoring and sturgeon bycatch assessment results

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# Legal Framework for Resolving the Problem of Sturgeon Bycatch in Ukraine

All species of sturgeon (6) living in the waters of Ukraine are listed in the Red Book of Ukraine (2009), and in accordance with the Law "On the Red Book of Ukraine" (2002), have a special protected status.

- *Huso huso*,
- *Acipenser ruthenus*,
- *Acipenser sturio*,
- *Acipenser nuvidentris*,
- *Acipenser stellatus*
- *Acipenser guldenstaedti*

МІНІСТЕРСТВО ОХОРОНИ НАВКОЛИПНЬОГО  
ПРИРОДНОГО СЕРЕДОВИЩА УКРАЇНИ  
НАЦІОНАЛЬНА АКАДЕМІЯ НАУК УКРАЇНИ

Червона книга  
**України**

**ТВАРИННИЙ СВІТ**

Під загальною редакцією члена-кореспондента  
Національної АН України  
І.А. Акімова

Київ  
Видавництво  
«Глобалконсалтинг»  
2009

In December 2020, Ukraine adopted the “Action Plan for the Conservation of Sturgeon (*Acipenseridae*) in Ukraine for 2021-2030”. The Action Plan identifies that the most important threat to the existence of sturgeon at present is overexploitation of populations, which is carried out in the form of targeted illegal fishing (poaching) and bycatch in fishing gear during commercial fishing. The Action Plan provides for the creation of a pilot system for monitoring bycatch.

- Responsibility for the implementation of this point of the Action plan is assigned to:
- Ministry of Environmental Protection and Natural Resources of Ukraine
  - State Ecological Inspection
  - State Agency of Melioration and Fisheries of Ukraine (with Fish Inspection)
  - Other state structures, scientific and public organizations (including WWF - Ukraine) may be involved by agreement.



\* Затверджений Постійною комісією Бернської Конвенції про охорону дикої фауни та флори і природних середовищ існування в Європі 27.06.11.2018

\*\* Затверджений Наказом Міністерства захисту довкілля та природних ресурсів України № 391 26.12.2020

\*\*\* 10 000 екземплярів стерляді прісноводної у 2021 році та 1 500 екземплярів осетра руського і 1 000 стерляді прісноводної у 2023 році вступили WWF Україна в Дніпрі

The powers and responsibilities of the State Fisheries Agency of Ukraine to monitor fisheries and protect sturgeon fish are defined in the Law of Ukraine "On Fisheries Management, Commercial Fishing and Protection of Aquatic Biological Resources" (2012, Articles 9, 15, 18 and 19).



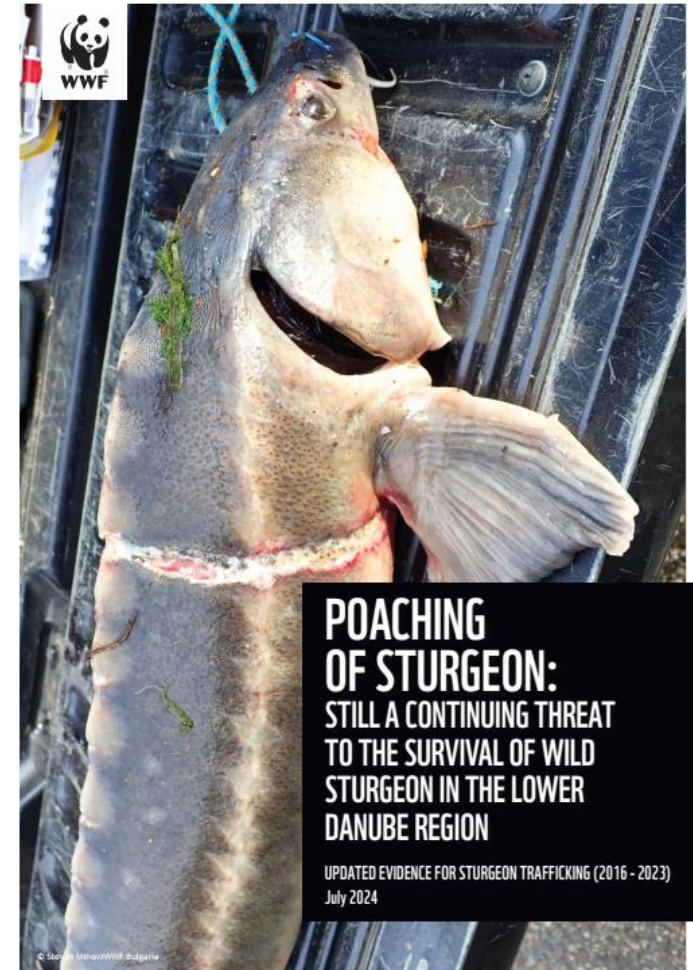
The algorithm of actions for fishermen in the case of bycatch of sturgeon according to the “Rules of Commercial Fishing in the Black Sea Basin” (2023) and the annually approved Fishing Regimes in the Black Sea Basin is as follows:

"In the case that species of aquatic biological resources that are listed in the Red Book of Ukraine (including sturgeon fish species and their hybrids) fall into the fishing gear, they must be returned to the habitat regardless of their condition, about which the fishermen are obliged to notify the territorial body of the Fish inspection and the State Ecological Inspection immediately after the end of the fishing operation. "

## How does Ukrainian official fisheries monitoring work in reality?

In terms of controlling poaching, it is extremely ineffective. In the latest WWF report (July 2024) provides data on the detection of 94 cases of poaching and trafficking of sturgeon in Ukraine in 2017-2023 (12 cases per year).

It is absolutely clear that the figures provided are very small and do not reflect the real scale of sturgeon poaching. According to conservative estimates, only a few percent of such cases are publicized.



The reasons for the ineffective fight against poaching can be explained by corruption of regulatory bodies and lack of interest in real counteraction to poaching and trafficking.

The situation is even worse with regard to collecting information on sturgeon bycatch during legal fishing. According to information from responsible employees of the Fisheries and Ecological inspection of the Odessa region, there have been no cases in recent years where fishermen themselves would report forced bycatch of sturgeon.



# Reasons why fishermen do not report by-catch

- According to the law, a fisherman is not responsible if he released the sturgeon in time. But he is afraid that because of such bycatch, the inspection may close a certain area for fishing or prohibit the use of certain fishing gear, and he will lose his job.
- Another reason is the general mistrust and even hostility of fishermen to all regulatory bodies





## Scientific research

Scientific research on sturgeons in the Danube and the Black Sea region of Ukraine is carried out on a proactive basis through participation in national and international projects related to ichthyological monitoring:

- “Ichthyological monitoring during the operation of the Danube-Black Sea shipping route”, Ukraine (2010-2024);

- “Evaluation of survival and distribution in the Black Sea of young sturgeons stocked experimentally in the Lower Danube”, Romania (2013-2015);

- “Select activities of the mid-term strategy towards the sustainability of Mediterranean and Black Sea fisheries implemented (BlackSea4Fish)”, GFCM (2018-2021),

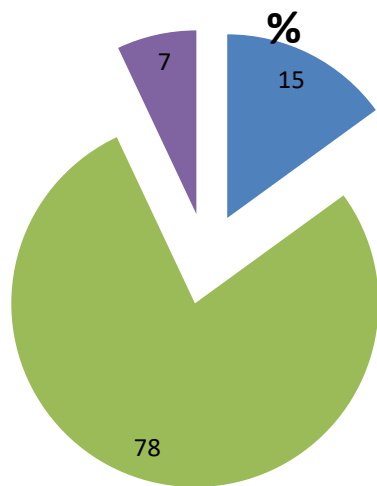
as well as through the support of non-profit organizations, primarily WWF-Ukraine.

The Danube River. One boat is used for ichthyological monitoring on the Danube (Vilkovo). The main objects of research are Danube shad and *Cyprinidae*. Fishing is done with drift nets (120 m long). In addition to fine-mesh research fishing gear (10-20 mm), standard commercial nets are used – for shad fishing (30-36 mm) and general fishing (40-80 mm). An average of 70-80 fishing operations are made per year. The amount of sturgeon bycatch in 2017-2023 ranged from 43 to 208 individuals of 4 species per year (an average of 97 individuals per year). More than 90% of the bycatch is YOY juveniles, share of 1-3 year old juveniles – 8-9%, adult fish – about 1%. The number and species composition of sturgeon bycatch undergo significant changes from year to year. The peak of YOY bycatch occurs in June-early July, which corresponds to the end of the Danube shad fishing season.

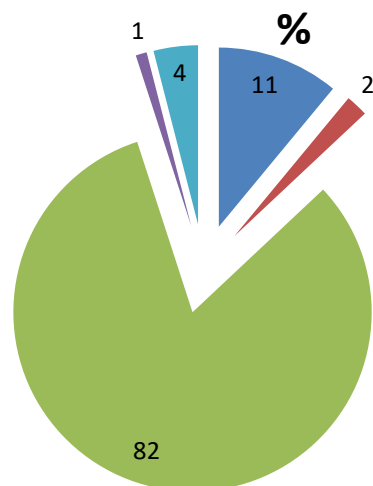


The value of the sturgeon bycatch (CPUE) per effort (standard operation) of drift nets in the lower Danube in 2017-2023.

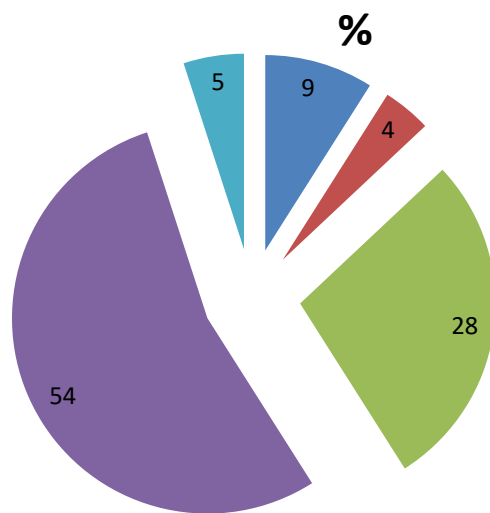
<b>Рік</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>CPUE</b>	1,85	0,56	0,35	0.61	1,10	1,07	1,13



- A. stell.
- A. guld.
- A. ruth.
- H. huso



- A. stell.
- A. guld.
- A. ruth.
- H. huso
- hybrid st. x ruth.



- A. stell.
- A. guld.
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- H. huso
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The species ratio of YOY sturgeon in the bycatch of research fishing gear in the lower Danube in 2021-2023

Considering that commercial fishermen often use nets with larger mesh, it can be assumed that the average by-catch of YOY juveniles per fishing boat will be approximately two times lower – about 45-50 individuals per year. About 400 boats are involved in fishing in the lower section of the river, so the forced bycatch of sturgeon fingerlings alone can be up to **20 thousand individuals**. YOY juveniles have no commercial value, so they are all, of course, released back into the river. The only question is what proportion of these fish can survive after being caught.



In addition, during the Danube shad fishing season, on average, one larger sturgeon (mainly stellate sturgeon) weighing 1-5 kg or more is caught per 0,5 ton of shad. In total, the by-catch of older sturgeon groups in shad nets during the season can be **800-1000 individuals**. Another **500 sturgeon** of different ages can be caught in the nets when fishing for *Cyprinidae* in late summer - autumn. The fate of this part of the bycatch is not so clear. Small fish are apparently released, while larger ones are hidden.



In Vilkovo, there is also a specialized poaching fishery for beluga. Poachers use trammel nets with a mesh size permitted for catching *Cyprinidae*, but from a much thicker and stronger thread. **From 7 to 10 individuals of large beluga** with a total weight of up to 1-1.5 tons are caught per year. Further up the Danube, in the area of Kiliya, illegal fishing for sterlet is carried out, which is caught not only with gill nets, but also with fyke nets. The catch volume can be estimated at no less than **1,5-2 thousand sterlet** per year.



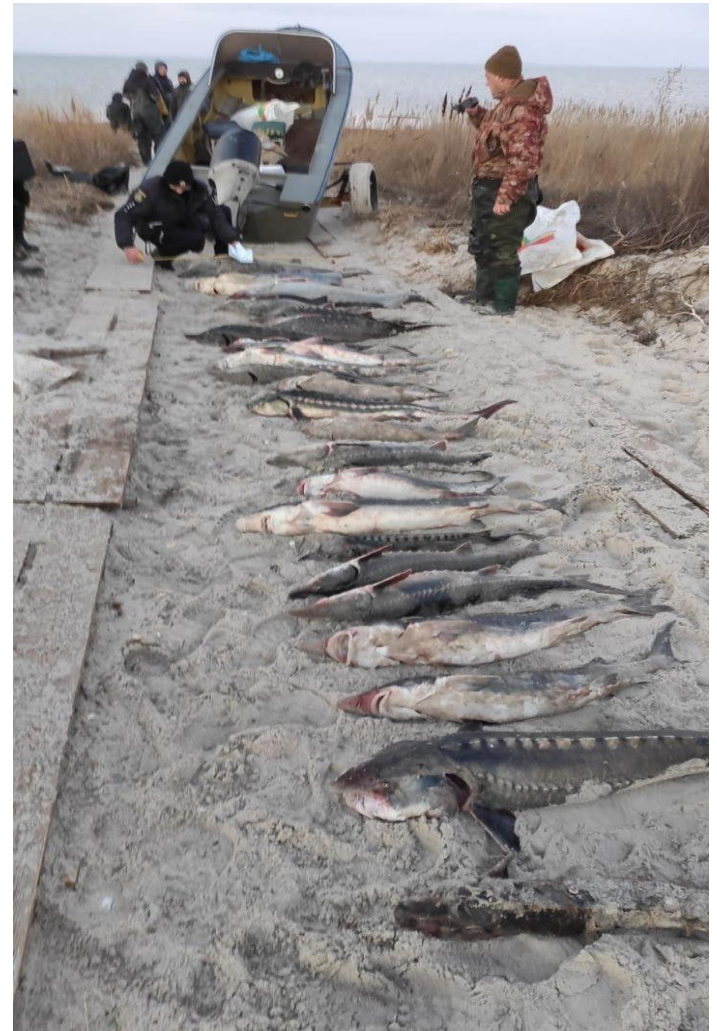
# Northwestern Black Sea (NWBS)

Bycatch of sturgeons of different ages and sizes is observed in a variety of fishing gear – different gill nets, trawls, beach and fixed seines and even in dredges when catching gobies and rapana. The most significant bycatch of sturgeon is in gill nets for catching So-iuy mullet *Planiliza haematocheilus* (mesh size 45-70 mm), river flounder *Platichthys flesus* (50-70 mm), dogfish *Squalus acanthias* and stingrays *Dasyatis pastinaca*, *Raja clavata* (100-120 mm). In gill nets for specialized catching turbot (180-220 mm), bycatch of large adult beluga and, to a lesser extent, Russian sturgeon is observed.

These fishing gear catches sturgeons that have commercial value and are therefore released into the water very rarely. Fishing at sea with gill nets is carried out by hundreds of boats over a significant water area, so it is very difficult to control.



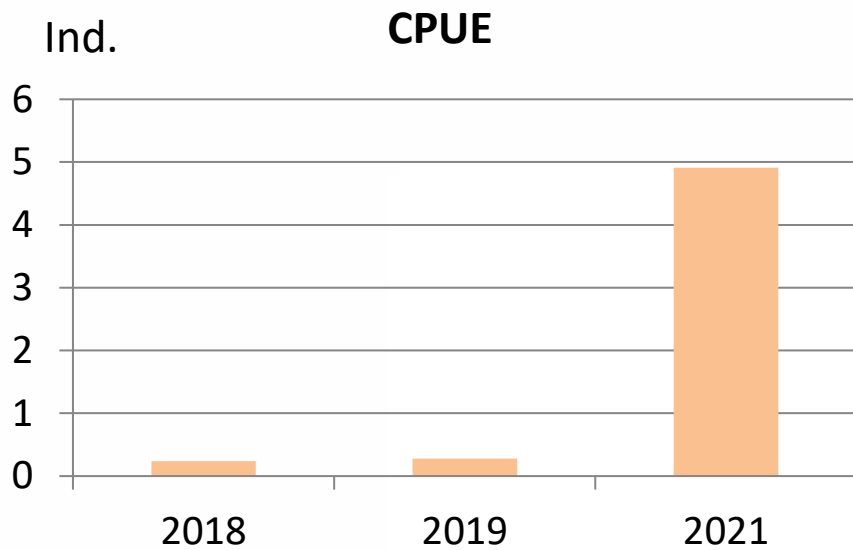
The largest sturgeon by-catches were traditionally observed in the eastern part of the NWBS off the coast of the Kherson region and Crimea. According to the Odessa center of YugNIRO, in the area of the Tendra Spit in the period before the Russian aggression, the by-catch of stellate sturgeon per net per day decreased from 0.7 individuals in 2008 to 0.05 individuals in 2013, and Russian sturgeon, respectively, from 0.2 to 0.05 individuals. Considering that the total number of such nets in the NWBS was in the thousands, and the average time of their installation was about 100-150 days per year, the sturgeon bycatch could amount to **several tens of thousands of individuals per year.**



The by-catch of sturgeon in trawls during sprat fishing is not so significant. The control capabilities on registered vessels are much better. Tracking the location of the vessel, video surveillance on deck, control in the port, prevent the concealment of prohibited by-catch. In addition, the number of trawl vessels operating in the NWBS has decreased from 40 in 2013 to 6 in 2021.

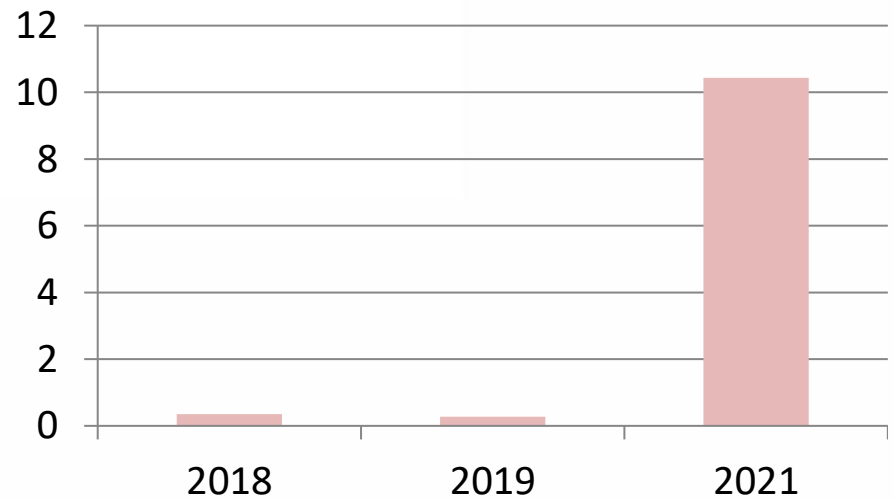


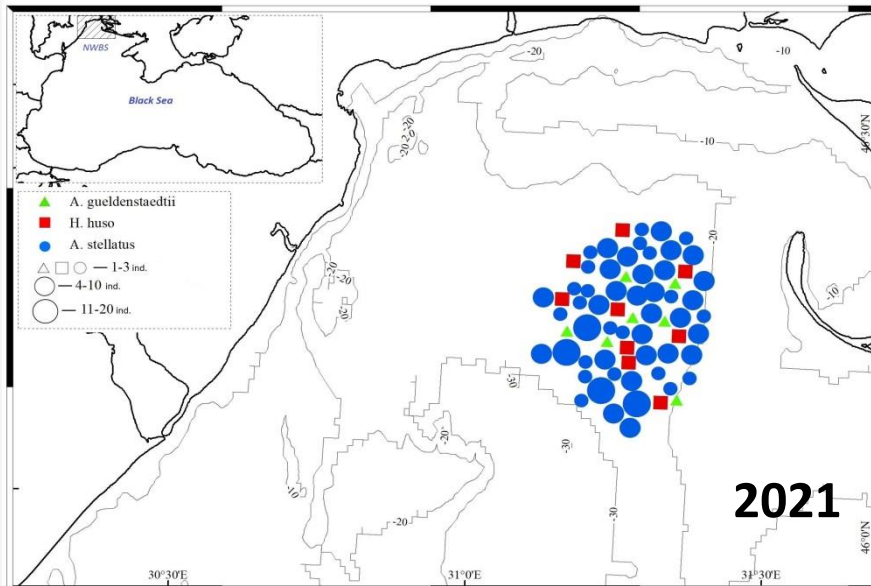
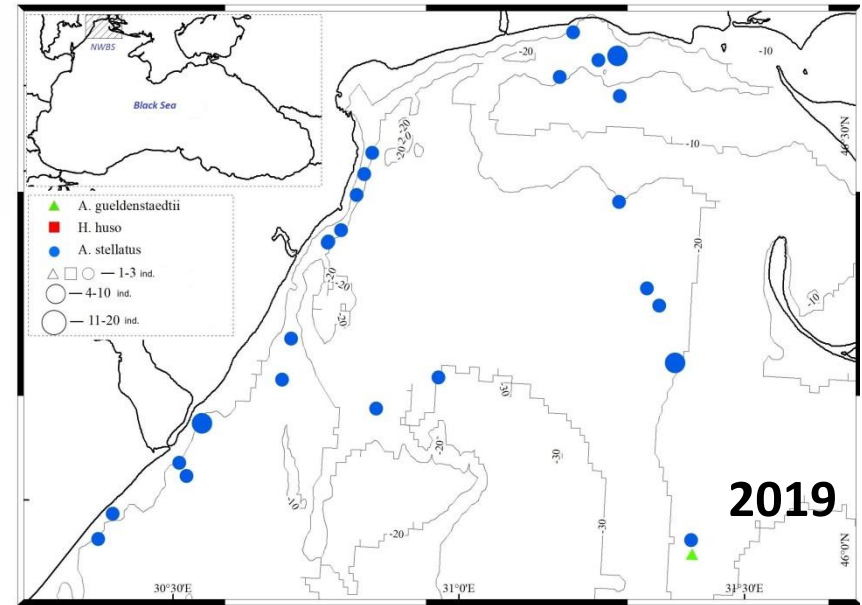
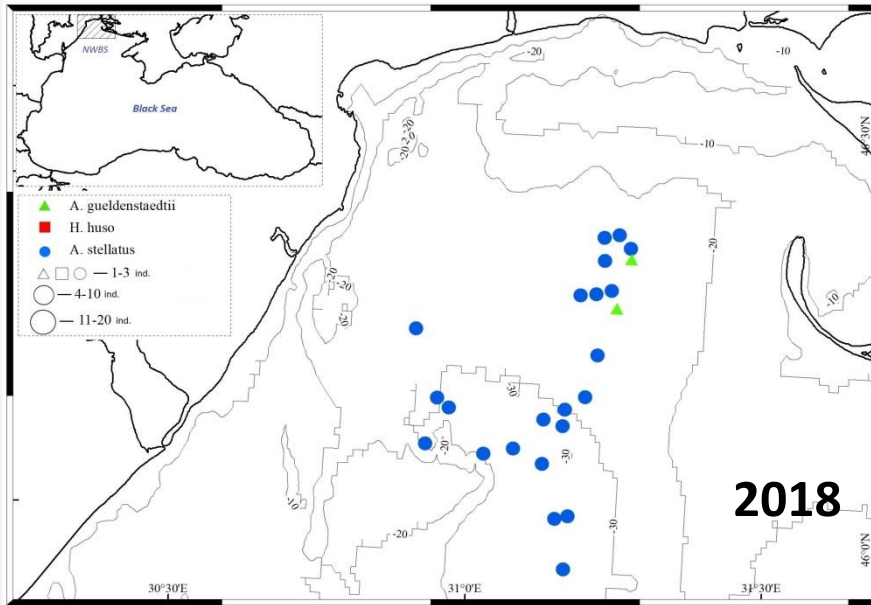
Observations carried out on trawl vessels in 2018-2021 made it possible to establish that the number of sturgeon by-caught per trawl operation has increased significantly during this period. In 2018, it amounted to 0.24 individuals, in 2019 - 0.28 individuals, and in 2021 - already 4.9 individuals. If in 2018 the by-catch of one individual of sturgeons accounted for 5.8 tons of sprat, in 2019 - for 2.3 tons, then in 2021 - only 1.5 tons of sprat. Taking into account the known volumes of sprat catch over these years, the amount of sturgeon bycatch by trawl vessels increased from approximately **300 individuals in 2018 to 1,100 individuals in 2021**. It can be assumed that a significant impact on the growth in the number of sturgeon (primarily stellate sturgeon) was exerted by a decrease in the pressure of IUU fishing due to the closure of a large part of the NWBS water area for fishing by the Russian fleet after the occupation of Crimea in 2014.



CPUE,  
the number of sturgeons  
caught per one trawl operation

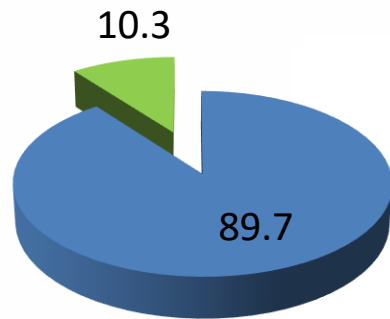
Sturgeon by-catch,  
kg per 1 ton of sprat





Distribution of sturgeons by-catch while trawl fishing in the North Western part of the Black Sea in 2018, 2019 and 2021

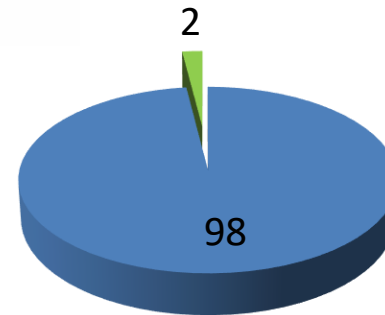
2018



%

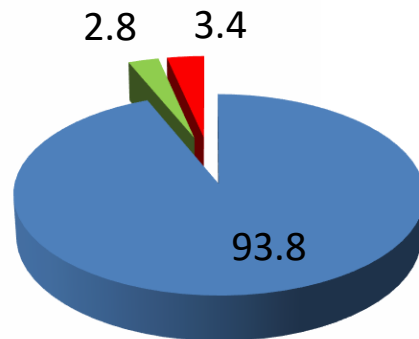
- *A. stellatus*
- *A. gueldenstaedtii*
- *H. huso*

2019



- *A. stellatus*
- *A. gueldenstaedtii*
- *H. huso*

2021



- *A. stellatus*
- *A. gueldenstaedtii*
- *H. huso*

Species composition of sturgeon by-catch in the NW Black Sea in 2018, 2019 and 2021

After the war began in early 2022, Ukrainian commercial fishing in the NWBS almost completely ceased. In the Danube, its scale also decreased threefold. It is quite obvious that the negative impact of fishing on sturgeon populations in the NWBS has also significantly decreased over the past 3 years. One of the indirect proofs of this fact is the extremely rare recent cases of wild sturgeon being sold in Odessa markets.



# Actions to reduce bycatch of sturgeon in Ukrainian fisheries

## *Changing the characteristics of fishing gear*

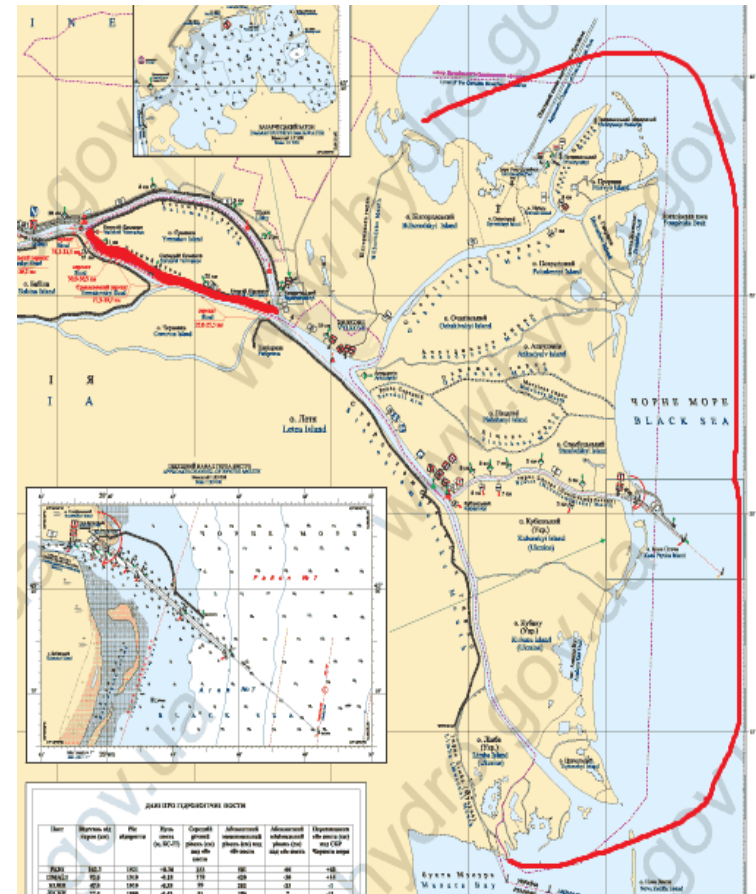
- Since 2010, the Fishing Regime in the Black Sea basin has limited the height of gillnets for catching turbot to eight rows of mesh. In this case, the weights must be attached directly to the bottom of the net. Reducing the height of the gillnets has virtually no effect on turbot catches, but significantly reduces the bycatch of sturgeon.
- Since 2014, a similar height limitation has been introduced for river flounder gillnets in the Black Sea (taking into account the smaller mesh size, the height of the nets was limited to 20 rows of mesh).
- Since 2017, a limit was set on the height of fishing drift nets in the Danube - up to 6 m. The minimum permitted mesh size of the outer layers of trammel nets (200 mm) and the maximum thickness of the net thread (1.2 mm) were determined. These changes should reduce the bycatch of large sturgeon breeders that rise to the river to spawn (primarily beluga).
- Since 2020, the minimum mesh size in drift nets for shad fishing in the Danube has been increased from 28 to 32 mm. This measure has led to a certain reduction in the bycatch of downstream migrating sturgeon juveniles YOY.

All these changes were made to the latest edition of the Rules for Commercial Fishing in the Black Sea Basin (2023).



## *Closure of certain valuable water areas to fishing*

- Since 2018, the Fishing Regime has prohibited the use of anchored gillnets with a mesh size of more than 45 mm for non-specialized fishing in the entire area in front of the mouths of the Danube River, with a total area of 24 thousand hectares. Since increased bycatch of sturgeon in such nets was constantly observed in this area.
- Starting from 2022, the Order of the Ministry of Nature Protection of Ukraine introduced a year-round ban on fishing in the Straight arm (22-31 km) of the Danube, since monitoring studies have shown its great importance for migrations of both juveniles and sturgeon breeders.



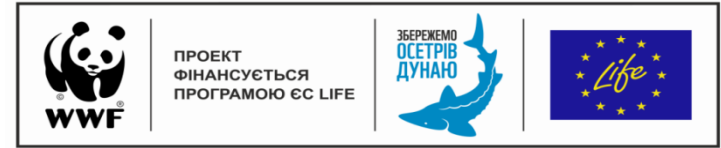
## *Temporary closure of fishing*

In periods when, according to the results of scientific studies, there is a mass downstream migration of YOY sturgeons, the Fish inspection authorities can introduce a temporary ban for 5-10 days on fishing in the Kiliya arm of the Danube. On June 28, 2023, the Odessa Fisheries Department adopted Order No. 211 on the temporary suspension of fishing with nets in the lower reaches of the Danube River until July 7, 2023 in order to prevent mass bycatch of belugas YOY.



# Public awareness

Propaganda campaign implementation aimed at explaining the fishermen and the local population of the importance of protection and restoration of sturgeon, is necessary for an effective fight against illegal catches and illegal trade in sturgeon fish. Since 2016, the WWF project in Ukraine for the preservation of sturgeons – “LIFE for Danube Sturgeons” was carried out. Within the framework of the project, many public events, meetings, trainings, and “Sturgeon Guard” practice for students were held. These actions had a certain resonance and positive effect.



Unfortunately, it must be acknowledged that all these measures are palliative and do not bring us noticeably closer to solving the problem of reducing bycatch.

***Thank you for your attention***

