

➤ Marine sturgeon distribution, interactions with fisheries.

The case of the European sturgeon *Acipenser sturio*



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<https://www6.bordeaux-aquitaine.inrae.fr/eabx/EABX/FREEMA>

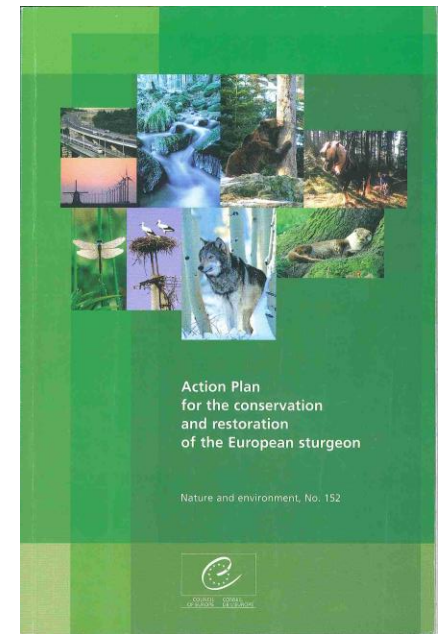
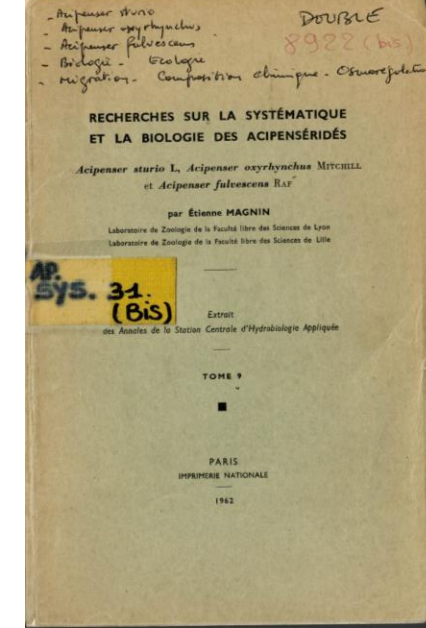
> Context

- *A. sturio* a large diadromous sturgeon
 - Reproduction in freshwater in spring
 - Leaving the estuary from 3 years (ca 70 cm TL)
 - Growing at sea with estuarine incursions
 - Reproduction
 - Male > 10 years, 120 cm TL
 - Female > 15 years, 150 cm TL
 - Maximum size > 350 cm TL
- Historically in Black sea rivers, secondly in Mediterranean (Pagés et al., 2009) and later in Atlantic and North Sea rivers (Chassaing et al. 2013, 2016, 2018)
- Overexploited species (caviar, 1920-1950) (Castelnaud, 2011; Williot & Castelnaud, 2011)
 - Most populations disappeared (Lassalle et al. 2011)
 - Only one remaining population, in the Gironde basin (Castelnaud et al. 1991)



➤ The Gironde population

- IUCN Critically endangered
 - Limited historic knowledge (Magnin, 1962)
 - Fishing ban from 1982, expanded in 2004
 - Strictly protected species
 - Bern Convention Action plan (Rosenthal et al 2007), French and German Action Plans (Gessner et al, 2010 ; MEDD, 2011)
 - Monitoring of the population in the wild
 - Ex situ stock
 - 1.7 M juveniles stocked in rivers (2007-2014, 2022)
- Survival in the wild is a key point for the success of this conservation



© Migado

➤ In the Gironde estuary

- We monitor sturgeons every two months by trawling (habitats, life traits, diet, health...)



(2009-2022)
1520 trawling tows
⇒ 494 captures *A. sturio*

➤ At sea

- Most of their life span
- Rare fish, sparse
- Very limited historic knowledge
- Limited biomonitoring tools (DST, Pop up tags)
 - Expensive
 - Unsecured data



➤ To get information at sea and to limit mortality



Esturgeon européen

- All sampled fish in estuary are tagged (pit + external)
- We set up a network of partners (fishers, marine labs, aquariums...) to gather information about sturgeon at sea (Castelnaud, 1988)
- In cooperation with commercial fishermen associations we have developed numerous tools to aware fishers and auctions staff about the protected status of this species and to get information from bycatch

En caso de captura accidental de un esturión europeo, conviene de:

1. Anotar su talla, su peso así como la fecha y el lugar de captura
2. Si porta una marca amarilla, dejarla en su sitio y anotar el número que en ella figura
3. Si lleva una baliza, quitarla y mandarla a la dirección indicada
4. **Soltarlo** sea cual sea su estado
5. **Declararlo** al 00 33 5 57 49 67 59 o en la página www.sturio.eu

Gracias por su vigilancia y su ayuda

NON L'esturgeon européen ne doit pas disparaître

En cas de capture accidentelle ayez le bon réflexe

1. **Notez** La date de capture, Sa taille, Son poids, Le lieu de capture
2. **S'il porte une marque, laissez-la en place et notez le numéro**
3. **Relâchez-le**
4. **Informez le Cemagref** par téléphone au **05 57 49 67 59** ou par courrier : 50 avenue de Verdun 33612 Cestas Cedex.

Campagne réalisée grâce à la participation du WWF-France, du ministère de l'Écologie et du Développement Durable, du ministère de l'Agriculture et de la Pêche, du Cemagref, de l'Agence de l'Eau Adour Garonne, des EPB Gironde, Garonne et Dordogne, de l'Union Européenne, de l'ADES et de l'École de la Mer de La Rochelle.

NEIN Der Europäische Stör darf nicht aussterben

Informations- und Aktionskampagne zu den Beifangrisiken beim Europäischen Stör
Internationaler Aktionsplan zur Erhaltung des Europäischen Störs

Der Europäische Stör
Als potentiell gefährlich, aber gleichzeitig aus dem westlichen Atlantik, ist eine vom Aussterben bedrohte Fischart. Auf der Liste der gefährdeten Arten steht der Europäische Stör. Aus der Liste der gefährdeten Arten ist der Europäische Stör gestrichen. Um ihn zu schützen, muss er nach dem Fang wieder freigelassen werden, damit sowohl der Fisch als auch der Transport und Verkauf der Fische nicht gefährdet werden. Zur Zeit laufen umfangreiche Maßnahmen, um die Art in europäischen Gewässern wieder anzusiedeln. Eine entscheidende Voraussetzung für diesen Erfolg ist dabei die Einhaltung der Fische in der gesamten Europäischen Gemeinschaft. Jeder Fischer, der einen Europäischen Stör fängt, ist verpflichtet, dies dem Cemagref zu melden.

RETTEN WIR DEN STÖR

Richtig handeln, um die Art zu retten!
Wissen / Schützen / Informieren / Sensibilisieren
Erfassen / Freilassen / Informieren
Eine individuelle Bewusstseinsbildung und eine entsprechend verteilte Bildung für unsere europäischen Väter

> SturWILD© INRAE



- A data base platform to record observations about sturgeons at sea (by catch, corpses...)
 - Voluntary declarations (1981-2022, N=1148)
 - Location and date of capture
 - Tag?
 - Length, weight
 - Healthy or injured
 - Fate of the fish (released alive, released dead, sold; seizure...)
 - Fishing gear, mesh size
 - Target species
 - ...
 - Historically by post mail and now by mail through their associations or directly on website www.sturio.fr

OK Sturio

DECLARATION DE CAPTURE DE POISSON OU CRUSTACE MARQUE

POISSON ESTURGEON

OU

CRUSTACE

LONGUEUR 1m 10

POIDS 12kg 400

MARQUE Cemaquif - France N° 0400

LIEU DE PECHE

LATITUDE

LONGITUDE

HAUTEUR D'EAU

ENGIN DE PECHE Filet grand mailage

NOM DU BATEAU

N° & QUARTIER

NOM DU PATRON

ADRESSE DU PATRON

14520 PORT-EN-BESSIN HUPPAIN

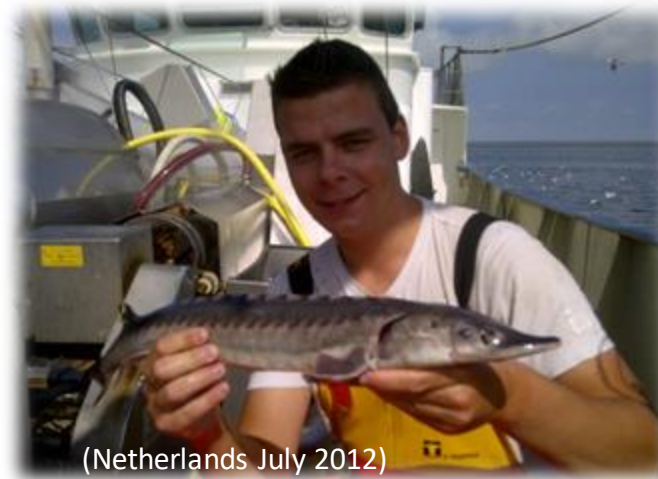
JOINDRE OBLIGATOIREMENT LA MARQUE QUI ETAIT AGRAFEE AU POISSON
OU AU CRUSTACE CAPTURE.

1. Port-en-Bessin, 28.04.2022

[Signature]



(Belgium, February 2007)



(Netherlands July 2012)



(UK, 1987)



(The Netherlands July 2007)



(Norway, 2008)



(France, July 2013)



(France, January 2016, tagged corpse)



(France, May 2021)



(The Netherlands, May 2021)



(Norway, Dec. 2016)



(France, April 2021)

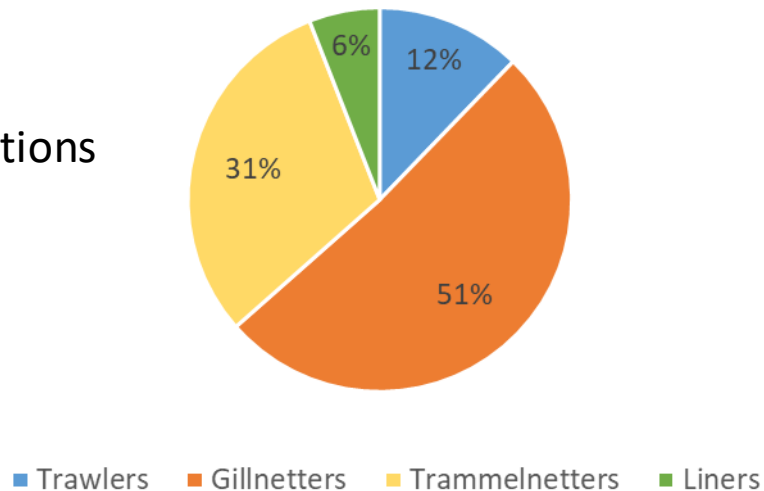


(Belgium, March 2017)

(UK)

Fishing gears and condition of the fish at capture

N=1148 declarations



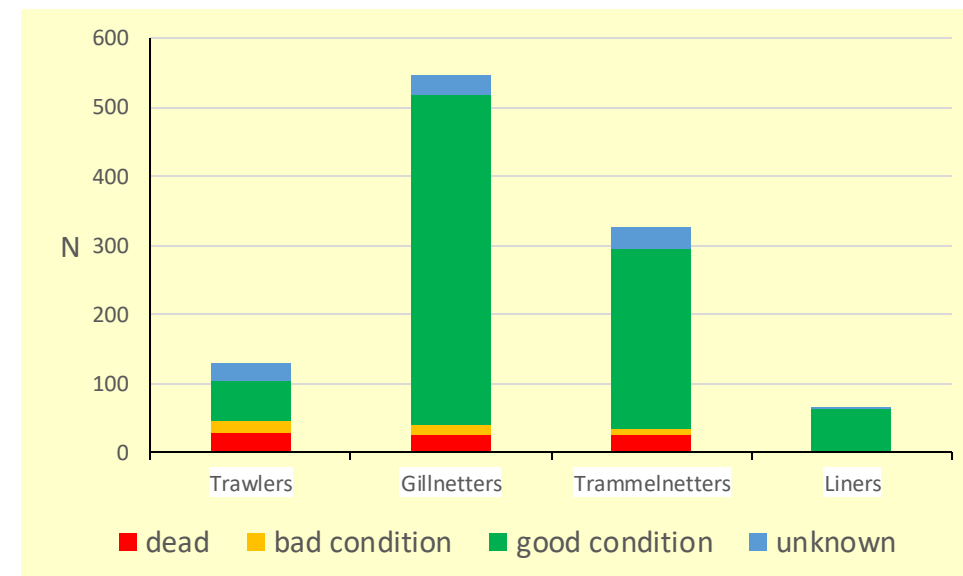
(France, March 2020 © Le Télégramme)
Caught in a gill net, good condition, released alive



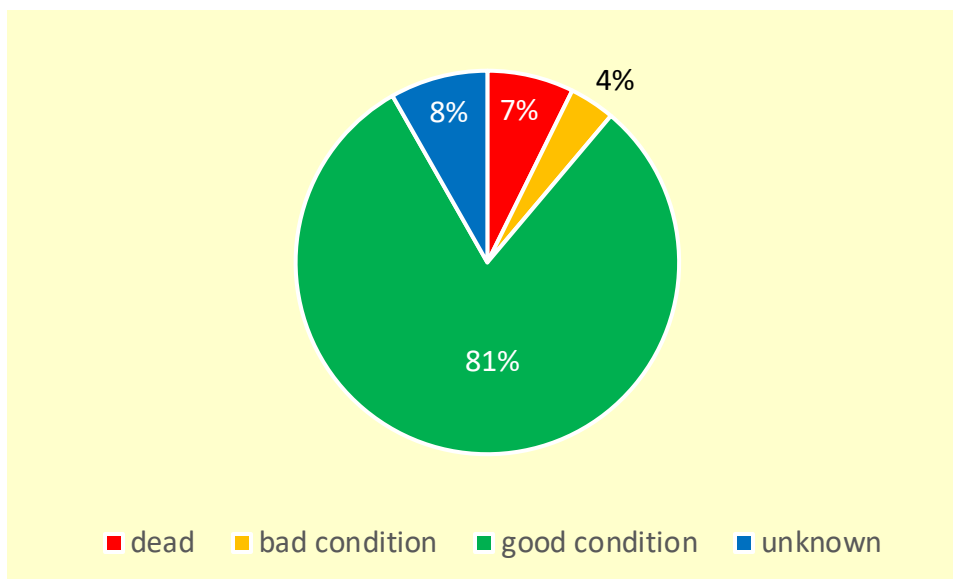
(France, August 2018) caught with a line, good condition, released alive



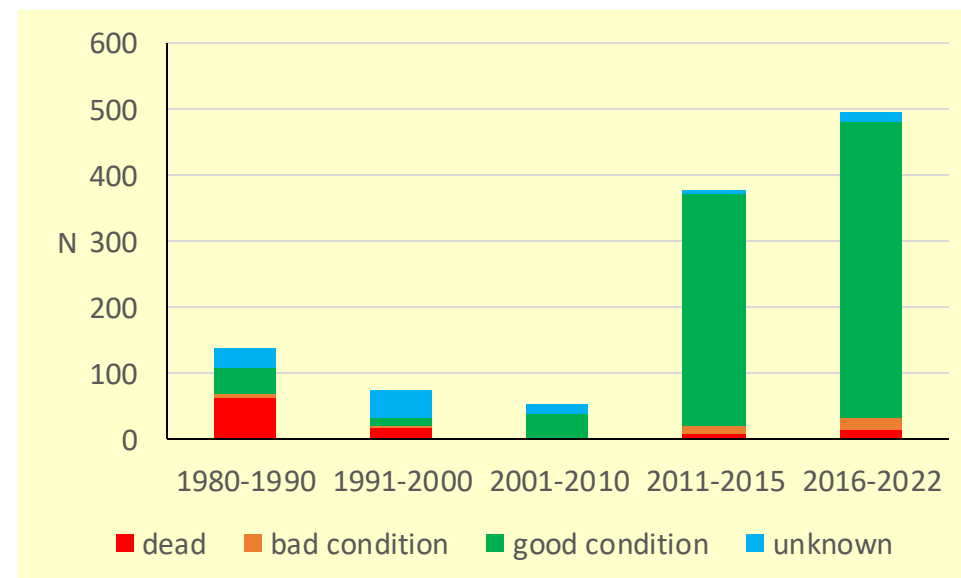
(France, December 2018)
Caught in a trawl, injured.



➤ Fishing gears and condition of the fish at capture



A decreasing rate of fish declared dead (Rochard et al 1997, Lepage & Rochard 2011)



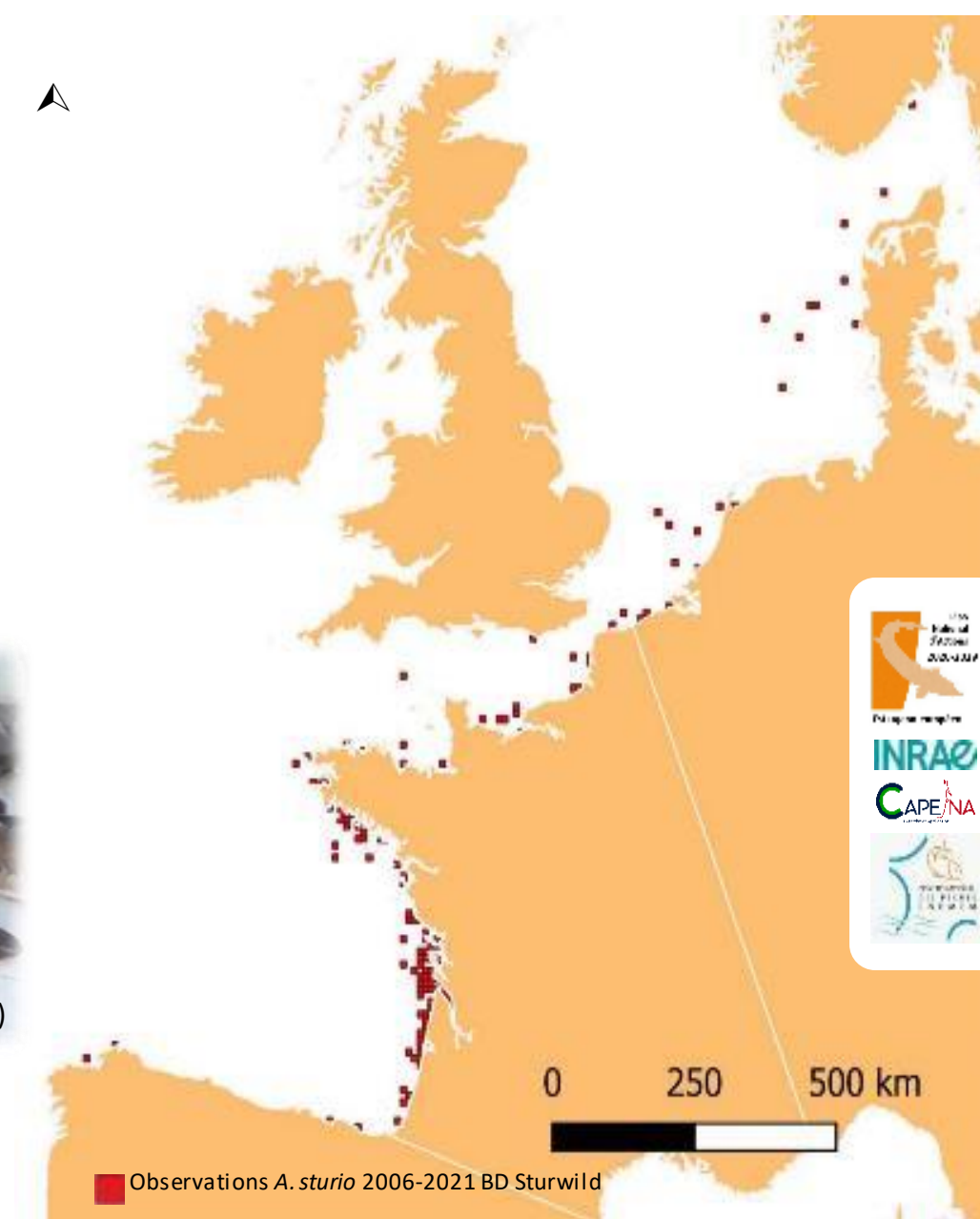
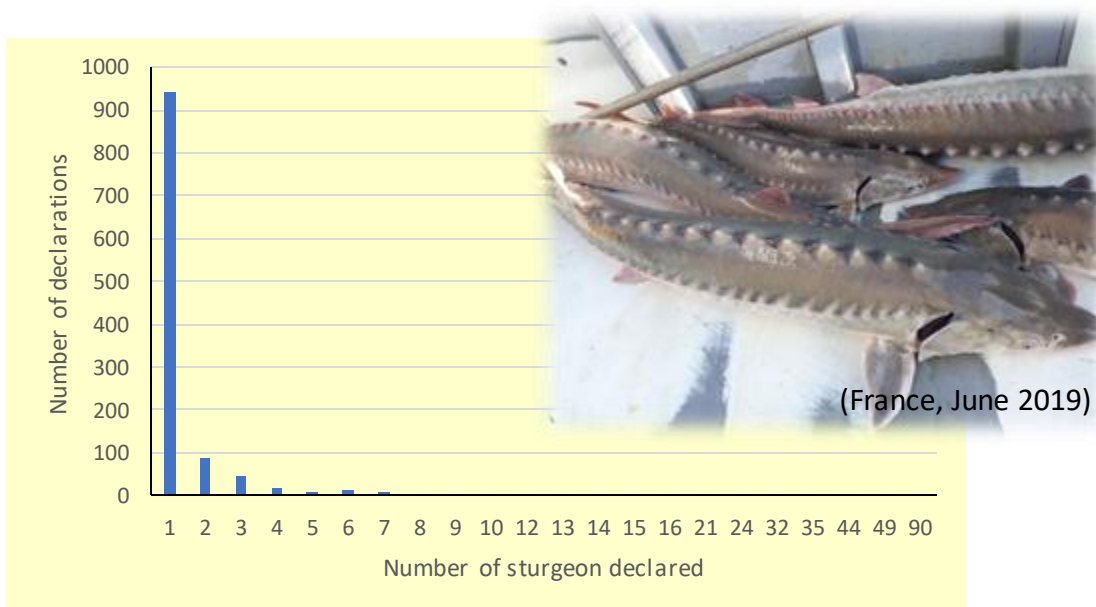
> Distribution

Information about 1828 individuals (2006-2021)

Bycatch N= 1824

Corpses on shore N=4

Thanks to cooperation with NGO, scientist and fishermen association in France, Belgium, Germany, Denmark, Norway, Spain, Portugal and UK

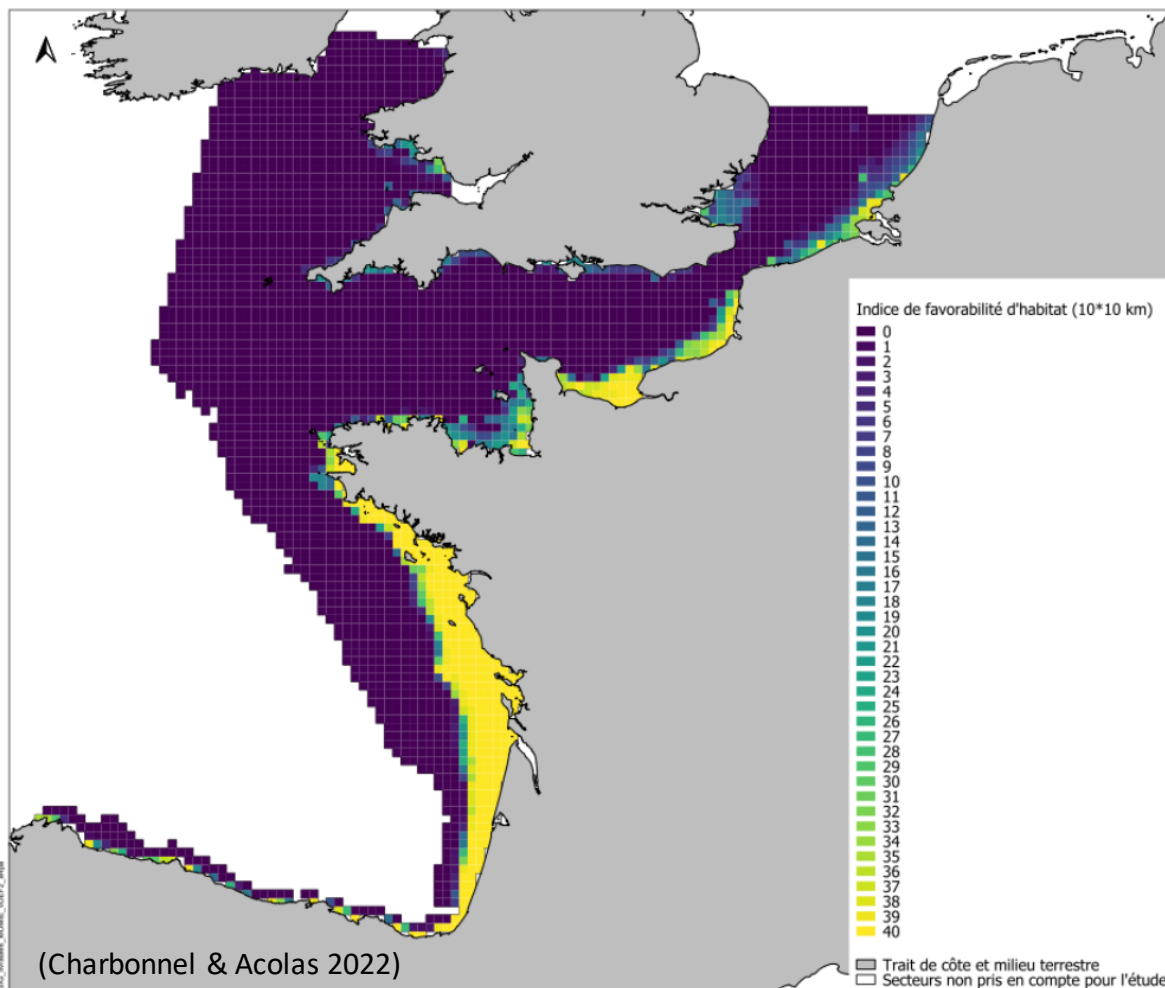


➤ Some ideas from bycatch declarations

- The number of sturgeon by-catch declared is a combined response of several factors:
- (1) the abundance of sturgeon at sea, which mainly depends on the strength of the cohorts (huge increase after stockings of 1,7M ind. 2007-2014)
- (2) the areas frequented and the gear used to target fish (we assume it has not changed during the study period)
- (3) tagged fish are overrepresented in declarations,
 - Tag induces a different behaviour of the fishermen, a certain protection...
- (4) the interest in cooperation of the fishermen
 - As the species is locally rare but the fishermen not aware about its status => very low
 - As the species is rare but fishermen informed => increase with awareness effort
 - When the local abundance increase, even with informed fishermen => decrease with lassitude
 - When there is a conflict between fisheries administration and fishermen => drastic decrease even when no direct link with sturgeon conservation
 - Decrease with the time, it is crucial to regularly repeat awareness campaigns
-

➤ Sturgeons' marine habitats

FACADE ATLANTIQUE FRANCAISE, MANCHE-MER DU NORD
Modélisation de l'habitat favorable à l'esturgeon européen sur la période 2012-2021



Estuarine, Coastal and Shelf Science

Available online 1 November 2022, 108136

In Press, Journal Pre-proof



Developing species distribution models for critically endangered species using participatory data: The European sturgeon marine habitat suitability

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➤ Fate of the fish?

- When fish are landed it's too late!

Some fish have been sold quite officially, even whereas species were strictly protected

- To increase information of fishers, auction staff, fisheries officers (Guth & Laurent 2004)
- And scientists !



(The Netherlands, 2007)



(UK 2004)



Sturgeon caught off Newhaven offered to Her Majesty the Queen

While out fishing from Newhaven in East Sussex, on his boat Bounty Hunter RX 448, fisherman Daniel Rathbone was somewhat surprised to see a 14kg sturgeon in his net. reports John Periam.

'I have been fishing here most of my life and this was very much a first for us. My crew Pat O'Gorman and Stefan Bryant were as surprised as I was, when we saw this head looking at us from the net.

'Back on shore we took it to local fish wholesaler MCB Seafoods at Newhaven where Mike Bish suggested we offer it to Her Majesty the Queen. Her office responded with grateful 'no', but suggested it could be sold, and the money given to charity.'





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GFCM online meeting, March 27 2023
Sturgeons in the Black Sea



EUROPEAN COMMISSION
DIRECTORATE-GENERAL
ENVIRONMENT
Biodiversity
Nature Conservation

Subject: Request to provide information to complete the tasks of the contract “Supporting Conservation Actions to Implement the Pan-European Sturgeon Action Plan”

3. carrying out a study on protecting sturgeons from by-catch

- Set up a group of experts: by catch experts X sturgeon experts (Europe and North America)
- Gather knowledge on sturgeon bycatch (Atlantic, Baltic, Mediterranean, Black sea)
- Propose measures to reduce bycatch or least to reduce consequences of bycatch
- Meeting(s) online in the first half of September
- Report by the end of the year

If interested to contribute to this work, in one way or another, let me know.



Thank you for
your attention

