RAIMOUEST: the French fishery of rays in the Western English Channel (VIIe)

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Context

- Undulate ray landings ban since 2009
- Species abundant in the Normand-Breton Gulf (Southeast of ICES Division VIIe)
- Misunderstanding for fishermen

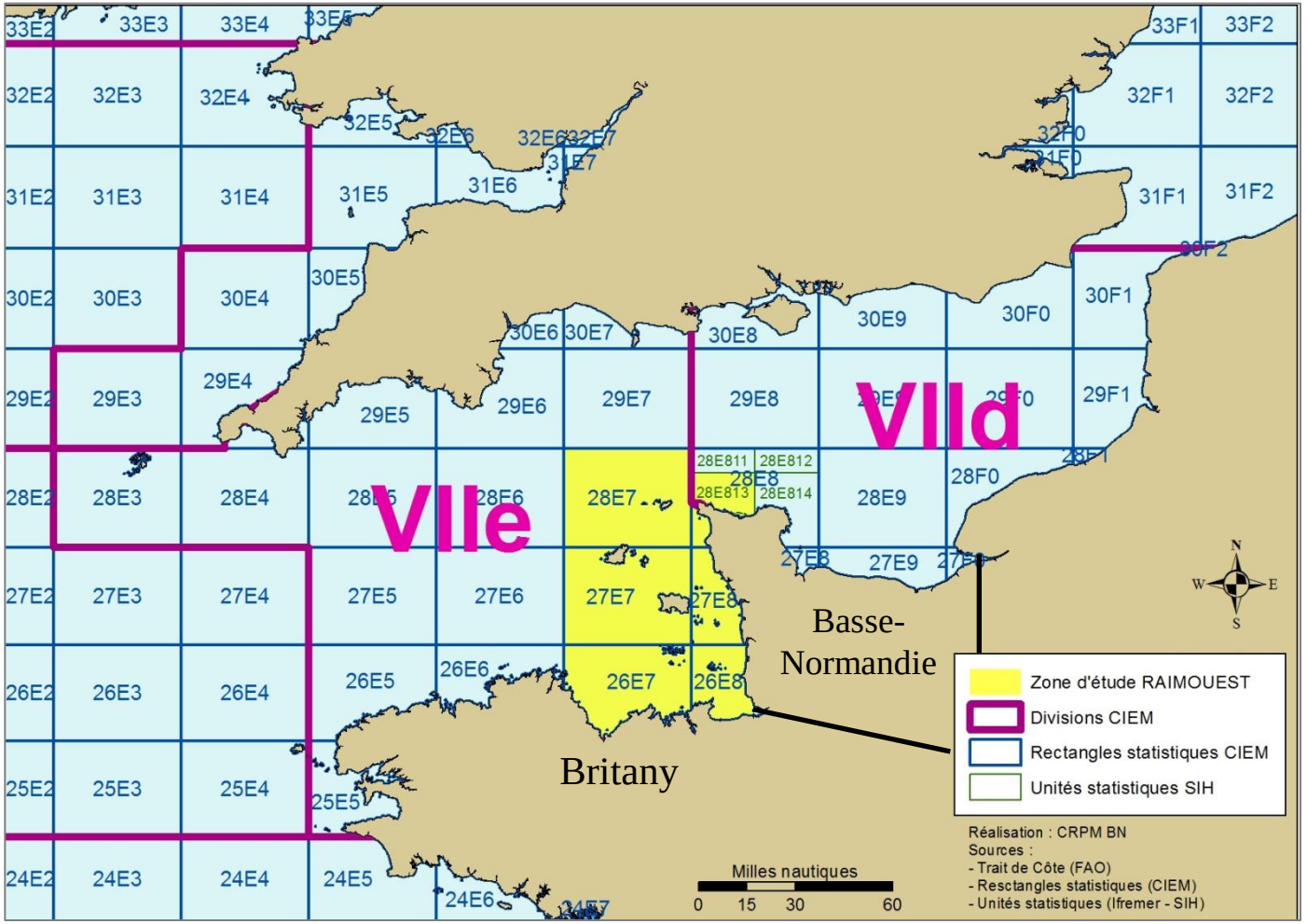
➔ RAIMOUEST project :

- To improve fisheries data on the main ray species caught in the NBG (focus on the undulate ray)

- Partnership with RECOAM project focusing on biological data

Purpose = to propose appropriate and concerted management measures for sustainable exploitation of rays

Study area



Study area (yellow) in the western English Channel

Fisheries data available

- Face-to-face interviews (n= 68)
- Total rays landings and effort data (logbooks)
- Basse-Normandie fleet sales at auction
- Sampling at sea aboard professional fishing vessels (2003 – 2014, n=7396 fishing operations)

Ray fisheries characteristics in the NBG in 2012

- 63 % of the French fleet operating in the NBG was involved in ray fishing (catching or having caught rays before the undulate ray landing ban)

=> **289 vessels, about half coastal trawlers/dredgers and half small size netters and longliners**

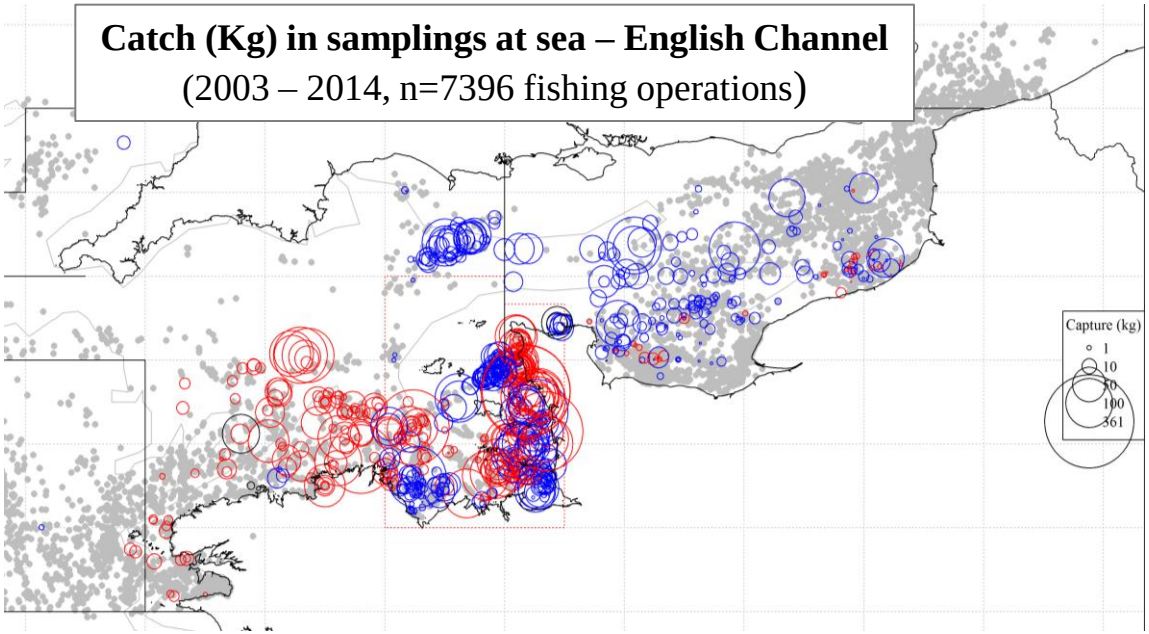
Ray fisherie fleet	Number of vessels	Total power (KW)	Average power (KW)	Average length (m)
Trawlers	133	25964	195	13.1
Netters	105	11319	108	9.0
Longliners	37	4464	121	9.3
Netters / Longliners	14	1604	115	9.4
Total	**289**	**43351**	**150**	**11.5**

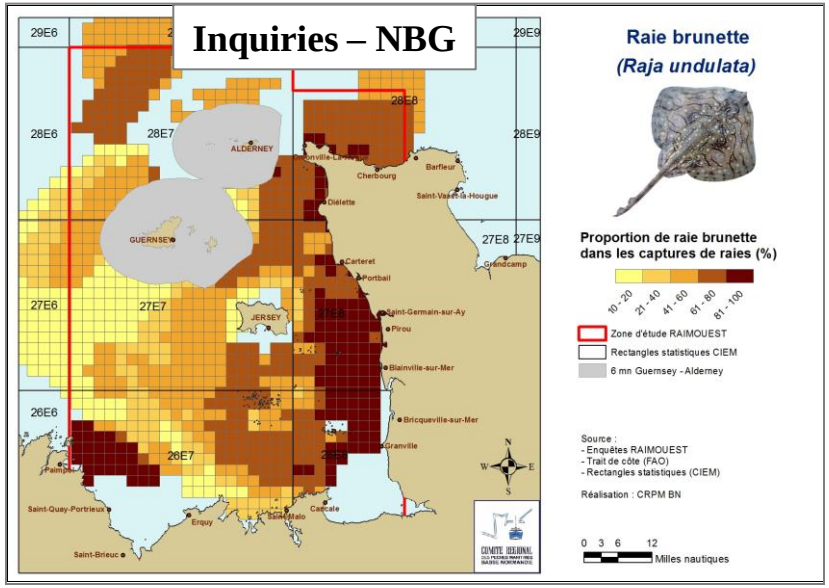
Rays species caught in the NBG

Species	Inquiries before 2009 GNB (%)	Sampling at sea 2005-2014 GNB (%)	Sales at Cherbourg auction 2008 (%)
R. undulata	**74**	**50**	**58**
R. brachyura	17	30	26
R. montagui	2	2	
R. clavata	5	5	10
R. microocelata	2	3	5
Raja spp.	-	11	-

Undulate ray is the main species caught in the NBG

Undulate ray spatial distribution

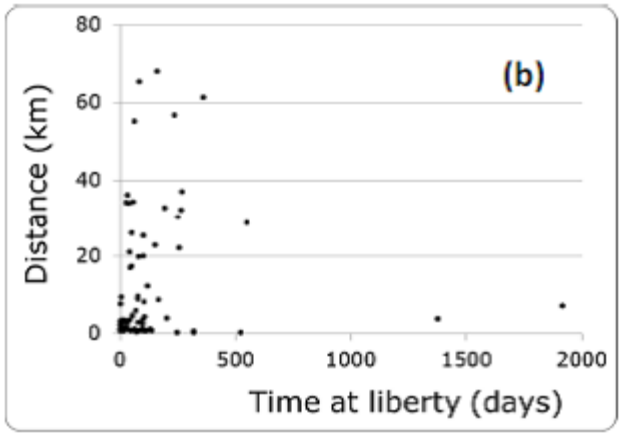




- **Local stock in the NBG (dominant on coastal waters)**
- **With some continuity with the Eastern English Channel and the Western part of the Western English Channel.**

Movements of undulate ray tagged in the NBG

(Stephan *et al.*, 2014 - Working paper presented at the 2014 WGEF)



Number of tagged skates : 1448

Number of recaptures : 77

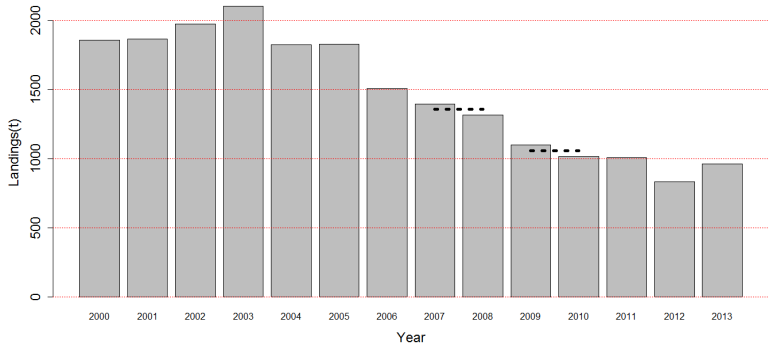
Preliminary results from the tagging/recapture operation in the Normand-Breton Gulf seems to show high site fidelity

Indicative level of undulate ray catches

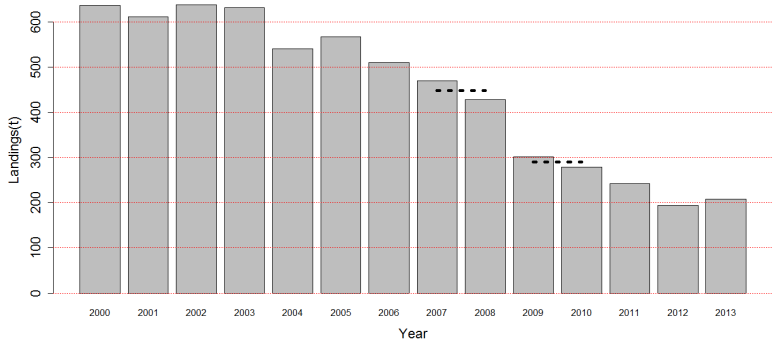
3 ways of analysis

1) Decrease in total French ray landings

French ray landings (all species) – 2000 /2013 - VIIe



French ray landings (all species) – 2000 /2013 - NBG



Decrease from 2008 et 2009 analysed as the minimal loss of undulate ray:

300 tons in VIIe - 160 tons in NBG

2) Undulate ray sales at auctions by the Basse-Normandie fleet before 2009 estimate

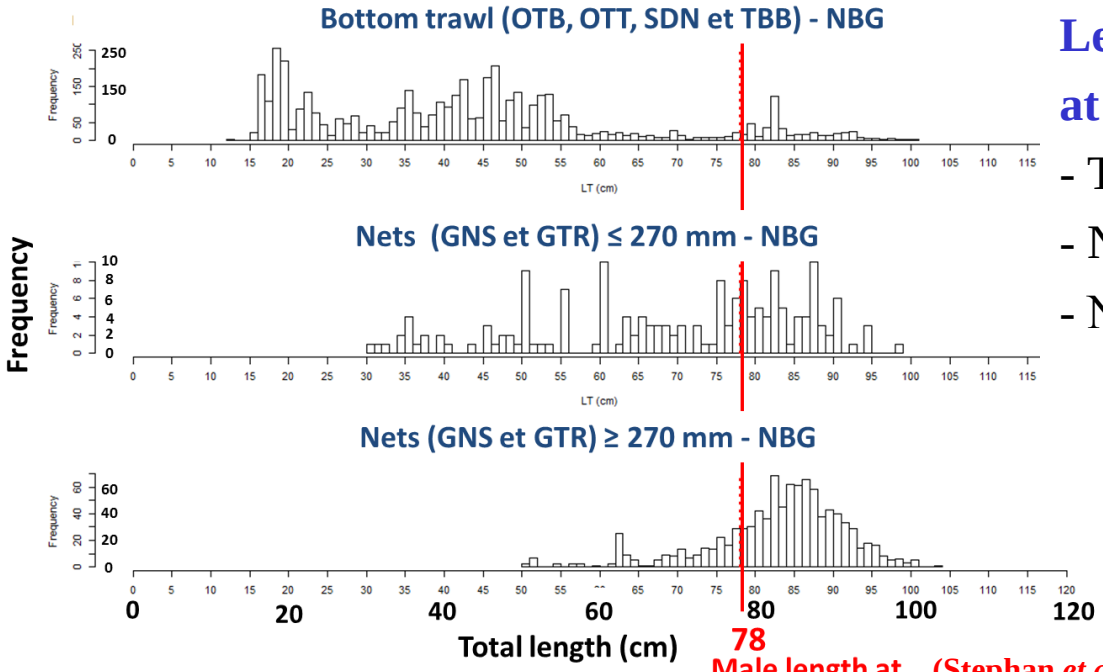
235 tons in VIIe and 35 tons in VIId

3) Discards raised at fleet level from samplings at sea

		Discards (kg)		
ICES Division	Fleet	2011	2012	2013
VIIe	OTB_DEF	848 429	658 008	738 616

Discards by the French bottom trawl fleet in VIIe in 2011-2013 were estimated at 750 tons

Length distribution of undulate ray catches



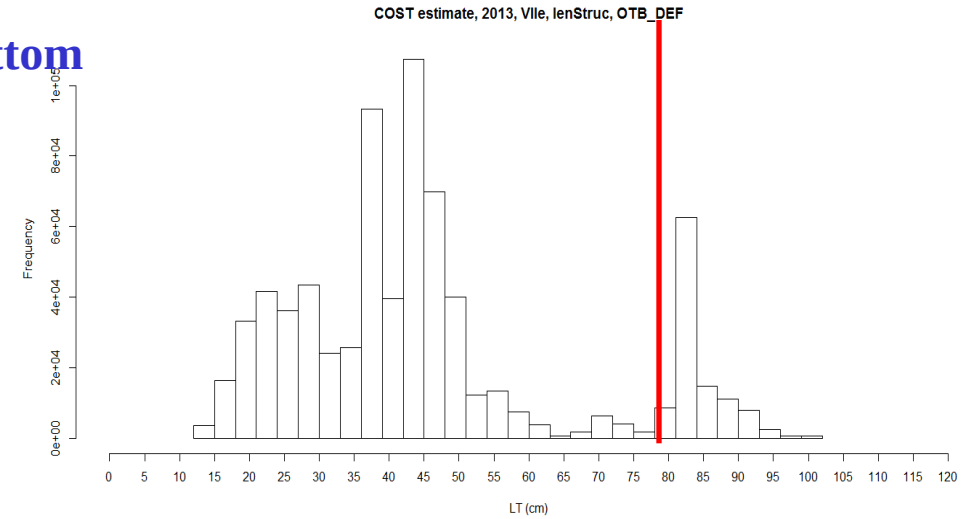
(Stephan *et al.*, 2014)

Length distribution in samplings at sea in the NBG

- Trawls: all sizes (majority of juveniles)
- Nets < 270 mm: large size distribution
- Nets ≥ 270 mm: target large individuals (majority of adults)

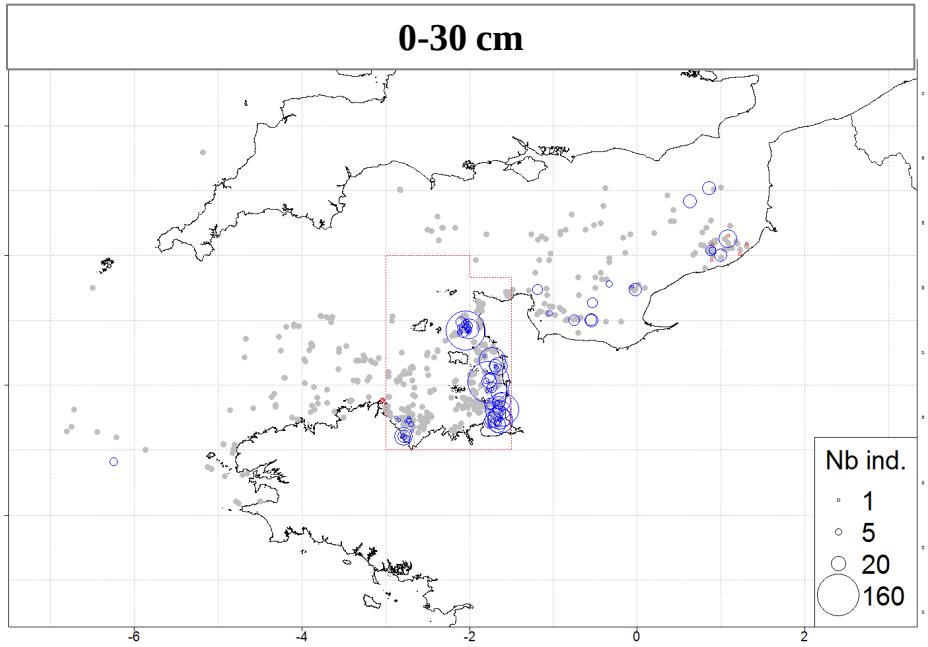
Length distribution of discards by French bottom trawlers in VIIe in 2013

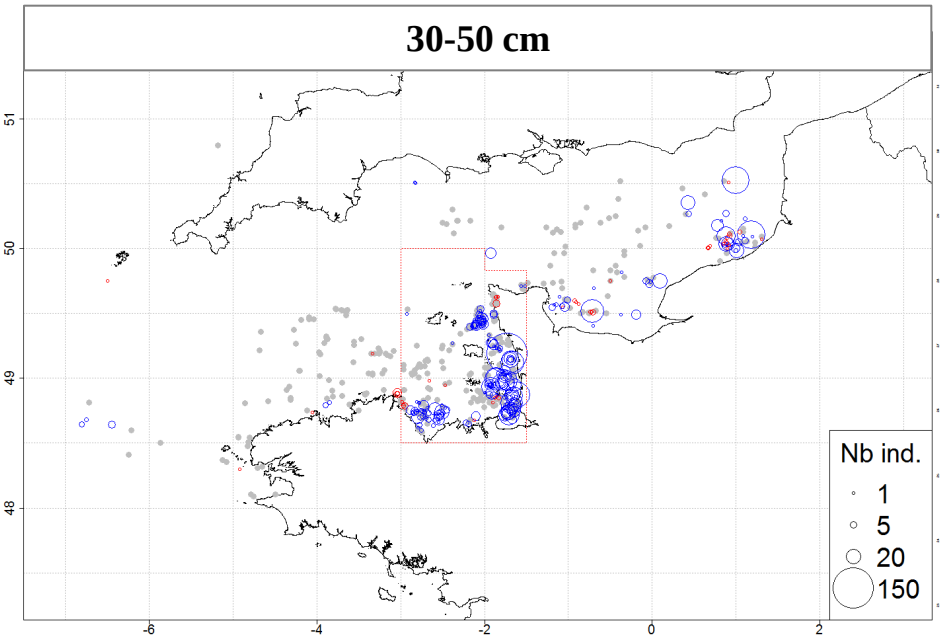
- Important proportion of juveniles
- Small proportion of large juveniles
- peak of adults

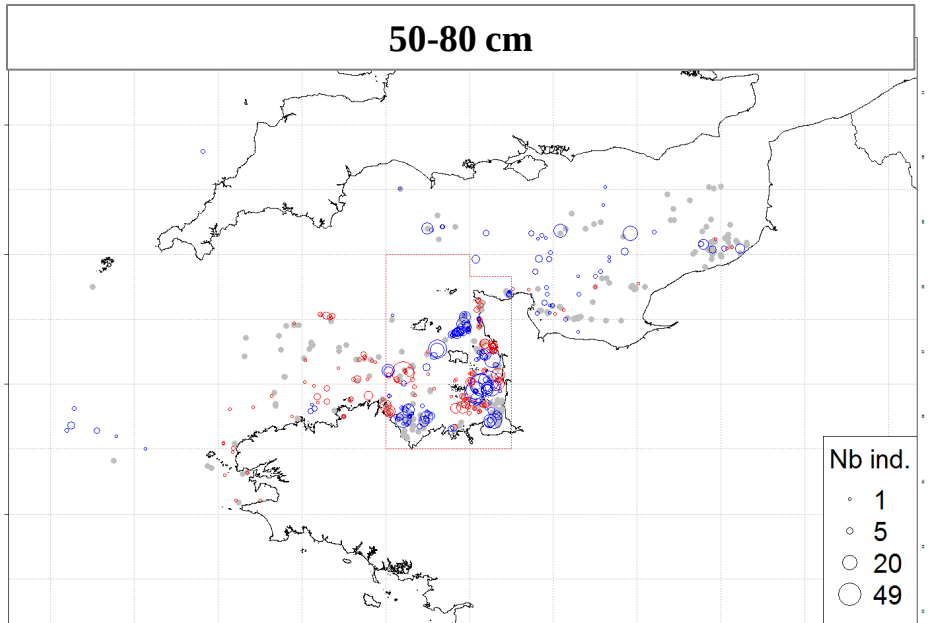


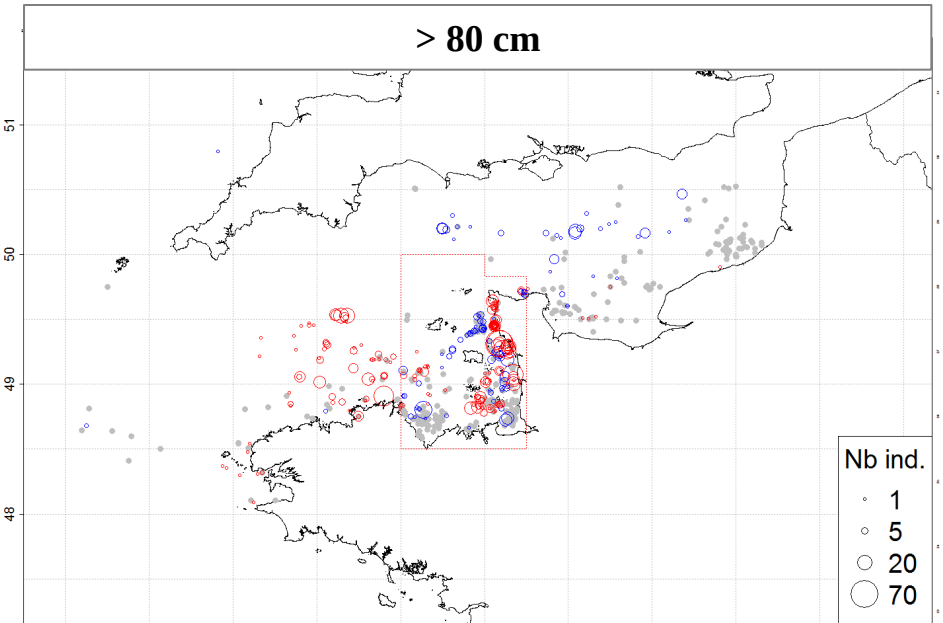
Undulate ray nursery areas

Catches by total length category in samplings at sea (2003 – 2014) ➔ **Small juveniles on coastal waters**









Conclusions

- Description of NBG rays fisheries characteristics, confirmation of socio-economical importance of rays in English Channel and impact of the ban of undulate ray in NBG.
- Stock identity: local stock in the NBG (main ray species in this area) with some continuity with other parts of the English Channel.
- Stock size: landings and sales at auctions before 2009 and discards estimate after provide indicative level => an important potential of landings.
- Sustainable fishing ? Population seems to be increasing. The likely quick positive effect of the ban indicate the reactivity of the stock. This reactivity allows to use other management measures.
- How to manage ? Knowledge provided by RAIMOUEST and RECOAM programs on fisheries and biology allow the definition of appropriate management measures (e.g. minimum landing size based on length at maturity, fishing effort restrictions by métier, nursery areas protection….).

Undulate ray spatial distribution in the Bay of Biscayf (VIIIab)