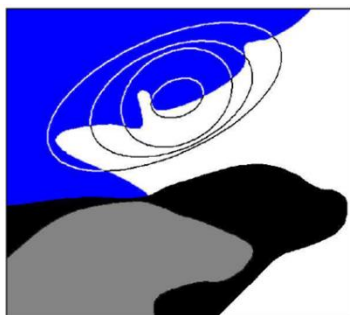


Monitoring seals in France - 2019: Extended summary of the annual report of the National Seal Network



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This report is a 13-pages extended summary of the full report written by the same authors in French on the monitoring of seal colonies in France (50 PP)

The National Seal Network in France is coordinated by the *Délégation de façade Manche Mer du Nord* of the French Office of Biodiversity (OFB) since 2018. It now includes all institutions (NGOs, local managers, national agencies, *etc*) monitoring seal colonies along the French coast, as well as rehabilitation centres and research groups working on seals in France. The full 2019 report is the second annual report summarizing grey and harbour seal trends in France as well as the main scientific studies currently conducted on these species in France, and the present report is the first extended summary in English of this annual report.

Seal censuses in France started in 1986 for the soonest ones. They are now conducted anywhere when at least ten seals haul-out frequently, along the coasts of mainland France (from the Belgium border to south-western Brittany) and Saint-Pierre-et-Miquelon overseas (south of Newfoundland, Canada). Most of these seal haulout sites are protected areas (marine national parks, Special Areas of Conservation, other Nature reserves). Different monitoring methods are applied in order to adapt to the variety of coastal substrates and sizes of haulout sites. Censuses are either conducted from land, at sea or by aerial surveys. In most cases they are conducted at low tide, and seals are counted on their haulout sites as well as in the water if they are in close vicinity of the haulout site. All figures provided below constitute relative abundances, based on the maximum number of seals counted simultaneously in a given area on a given day/tide. For pup production, the total number of pups is usually estimated from multiple censuses, taking into account the age class of the counted pups during each successive survey.

In all study sites censuses are conducted at least once during the moulting period and once during the breeding season, but in most sites monthly censuses are planned year-round (weather permitting). In mainland France, the grey seal moult spans from January to March, and the grey seal breeding season is between October and January. Harbour seal breeding season is in July and moulting in August.

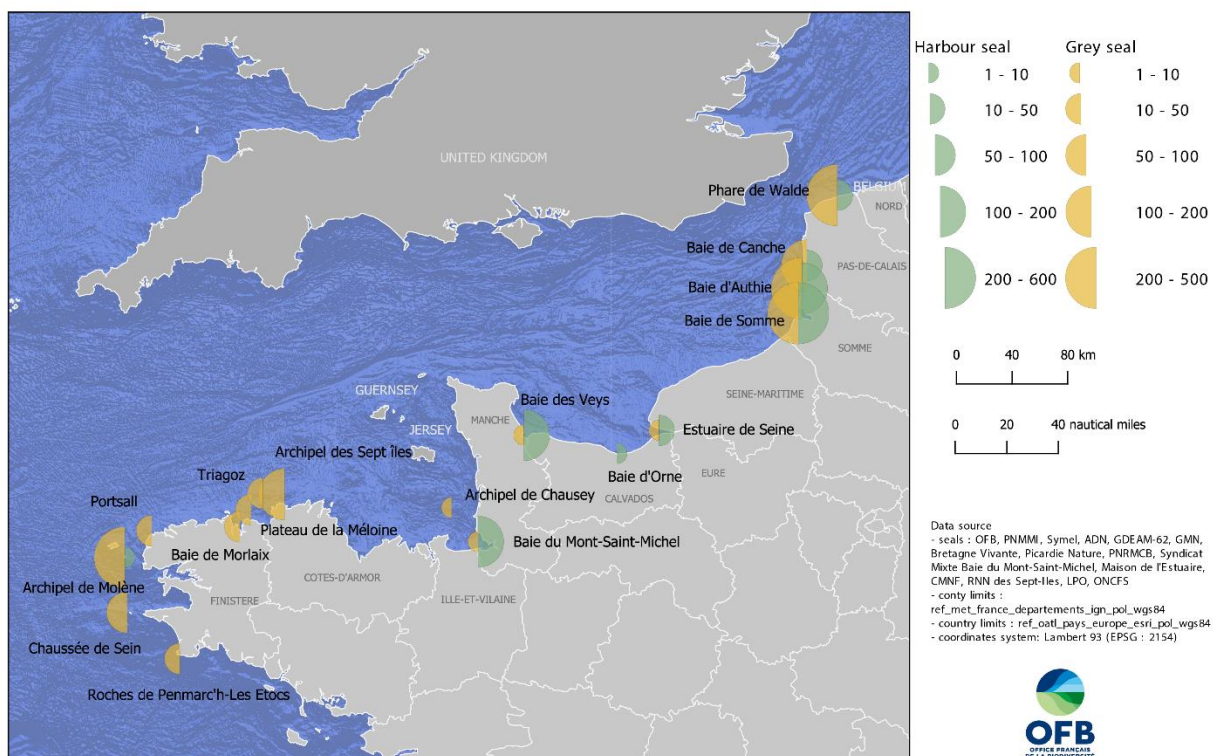


Figure 1: Distribution map of grey and harbour seal maximum haulout numbers in mainland France in 2019

In mainland France, harbour seals use preferably the Channel and Southern North Sea (Fig 1), while grey seals are present in the same areas as well as western Brittany. With almost 800 seals, the *baie de Somme* holds the first seal haulout site in mainland France. Overseas, in Saint-Pierre et Miquelon, censuses over the whole archipelago showed that harbour seals were the main seal species hauling out in the area, with up to 1631 individuals counted, versus 449 grey seals (Table 1).

Table 1: Cumulative (pups) or maximum (other age classes) numbers of grey and harbour seals counted on their haulout sites in France (mainland and overseas) in 2019. NA: Not assessed.

Sites (from north-east to south-west for mainland France)	Grey seals			Harbour seals	
	Pup production	Maximum number of seals hauled out during Summer	Maximum number of seals hauled out during moult (February-March)	Pup production	Maximum number of seals hauled out during moult (late July-early Sept)
Phare de Walde	0	282	117	0	16
Baie de Canche	0	0	108	4	49
Baie d'Authie	0	225	4	3	153
Baie de Somme	2	223	150-200	142	575
Estuaire de Seine	0	9	1	0	16
Baie de l'Orne	0	0	0	0	8
Baie des Veys	0	9	0	46	193
Archipel de Chausey	0	6	7	0	0
Baie du Mont-Saint-Michel	0	4	0	29	108
Sept-iles	51	48	132	0	0
Triagoz	0	19	3	0	0
Baie de Morlaix	0	23	13	0	0
Plateau de la Méloine	0	29	NA	0	0
Portsall	0	14	7	0	0
Archipel de Molène	19	215	231	0	6
Chaussée de Sein	0	68	79	0	0
Penmarch/Les Etocs	0	16	3	0	0
Saint-Pierre et Miquelon	0	449	NA	NA	1631

There is a strong geographical limit between the harbour seal and grey seal breeding colonies' distribution (Fig 2). With a total pup production of 224 in 2019, the harbour seal is the first breeding seal species in mainland France, with breeding mainly occurring along the Channel coasts. This represents 26 more pups than in 2018. Grey seal pup production also increased in mainland France with 72 pups in 2019 versus 50 in 2018. Only harbour seals are breeding in Saint-Pierre et Miquelon but the pup production is not monitored to date.

Grey seal pup production

The total pup production keeps increasing (Figure 3). Most grey seal pups are born in the *Sept-Îles* archipelago (71% of grey seal pups in mainland France, Figure 3), where the highest inter-annual rate of increase was also recorded (+16,7 % per year since 2005). In the *Archipel de Molène* (26% of grey seal pup counts) an increasing number of pups are also counted, especially these last years (+10,4 % per year). Lastly in *Baie de Somme*, only 1-2 grey seal pups are recorded each year.

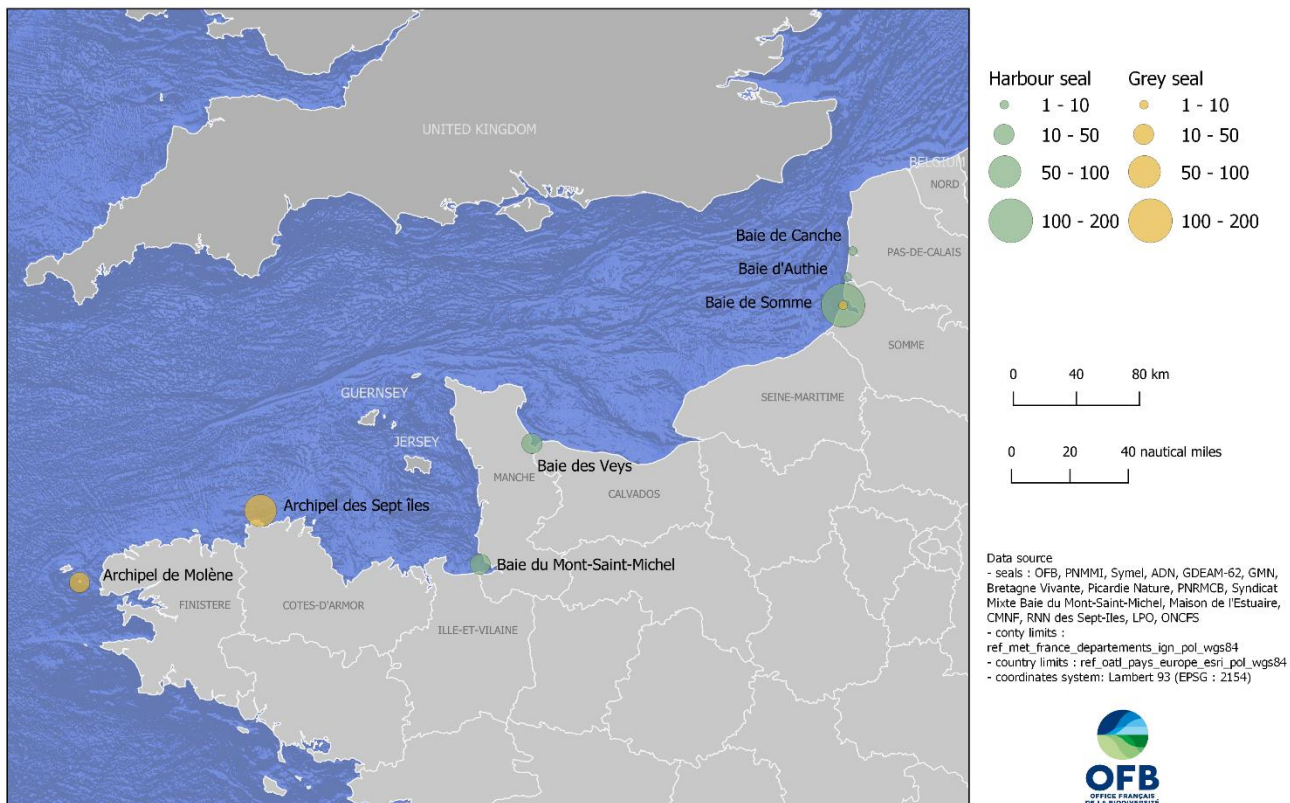


Figure 2: Distribution of grey and harbour seal pup counts in mainland France in 2019.

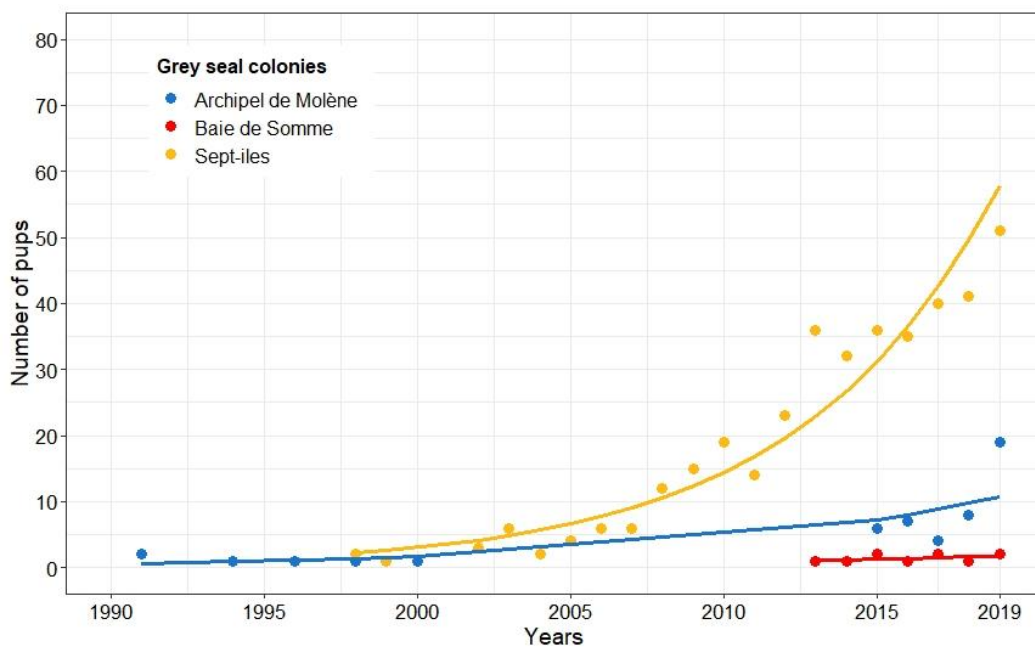


Figure 3: Trends in grey seal pup numbers in mainland France, from the 1990's to 2019.

Grey seal censuses during the moult

During the moult (February-March), grey seals can be observed in the North-eastern Channel (*phare de Walde*, *Baie de Canche* and *Baie de Somme*), and in Brittany (*Sept-Îles*, *Archipel de Molène* and *Chaussée de Sein*, Figure 4). The 3 main haulout sites during the grey seal moult are also breeding sites. In 2019, for the second time the maximum number of hauled out moulting grey seals was recorded was in the *Molene archipelago* (231 seals), followed by *Baie de Somme* (150-200 seals) and *Sept-Îles* (132 seals). On the other haulout sites, around a hundred seals haul out during the moult. In Normandy, no grey seal was recorded during this time of year, with the exception of a single individual in *Estuaire de Seine* (Figure 4). In the other areas the grey seal abundance is low with a maximum of a dozen seals.

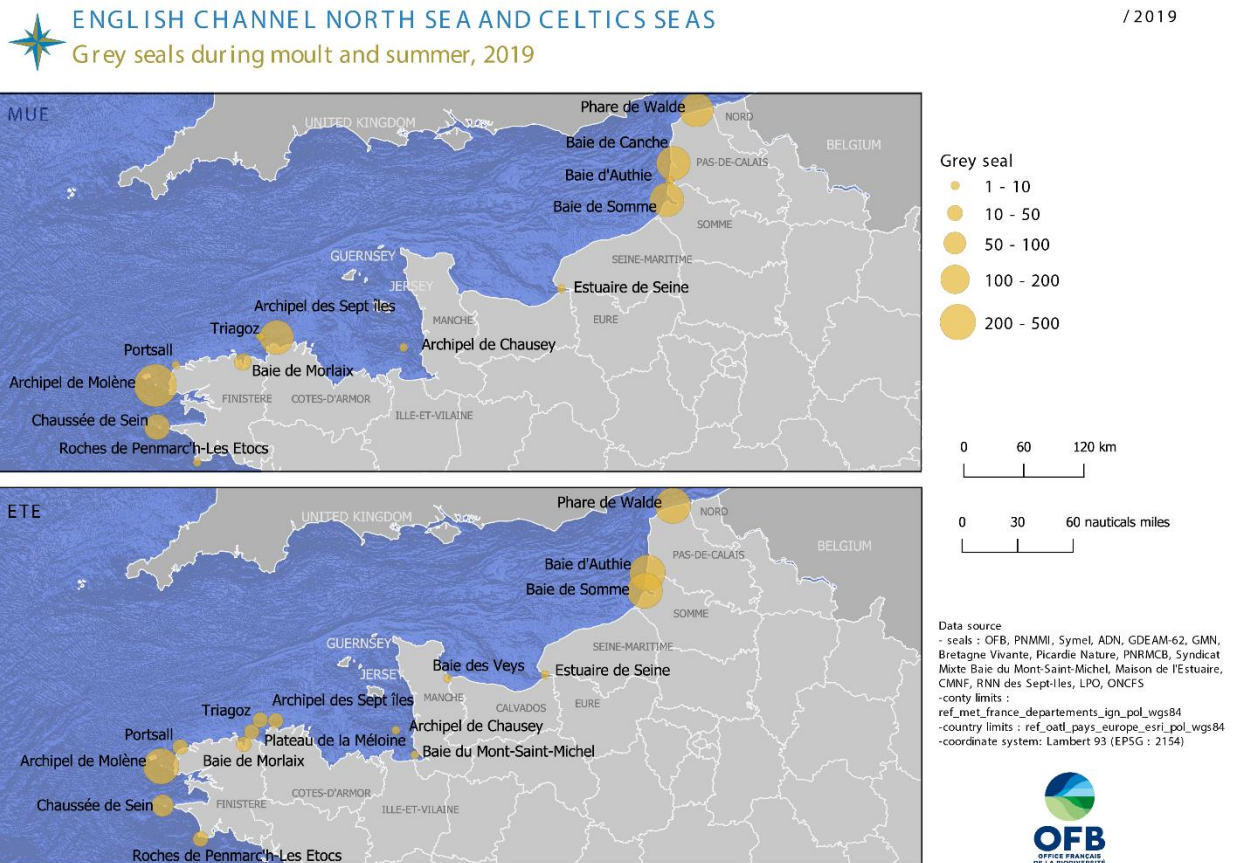


Figure 4: Distribution of grey seals during the moult (upper map) and Summer (lower map) in mainland France in 2019.

Monitoring grey seal numbers during Summer

Summer as defined here corresponds to the moulting season for harbour seals, i.e. from late July to early September. In Summer 2019, grey seals were observed along the whole coastline (Figure 4). The haulout site where the maximum number was recorded was the *phare de Walde* with a maximum of 282 hauled out seals, then the *Baie d'Authie*, *Baie de Somme* and *Archipel de Molène*, with 215 to 225 seals maximum. The *Archipel de Molène* is the only haulout site used by a significant number of seals year-round. Other haulout sites in Brittany and along the Channel host between 14 and 68 individuals, while in the other sites only 10 or less grey seals are reported during Summer.

Figure 5 shows the trends in maximum grey seal numbers for the most important haulout sites in mainland France, since censuses are conducted. The highest rate of increase is in *Baie d'Authie* (+34,4 %/year), followed by *Phare de Walde* and *Baie de Somme* (+27,8 % and +18,7 % per year respectively). Those sites are located in the north-eastern Channel, close to the larger grey seal colonies of England and the Netherlands where grey seal numbers have also increased exponentially since 2010. Grey seals are observed in *Baie*

d'Authie and *Phare de Walde* since the 2000's only. The two other grey seal colonies in Brittany also show positive trends with +12,1 %/year for *Sept-Îles* and +6,6 % per year in the *Archipel de Molène*.

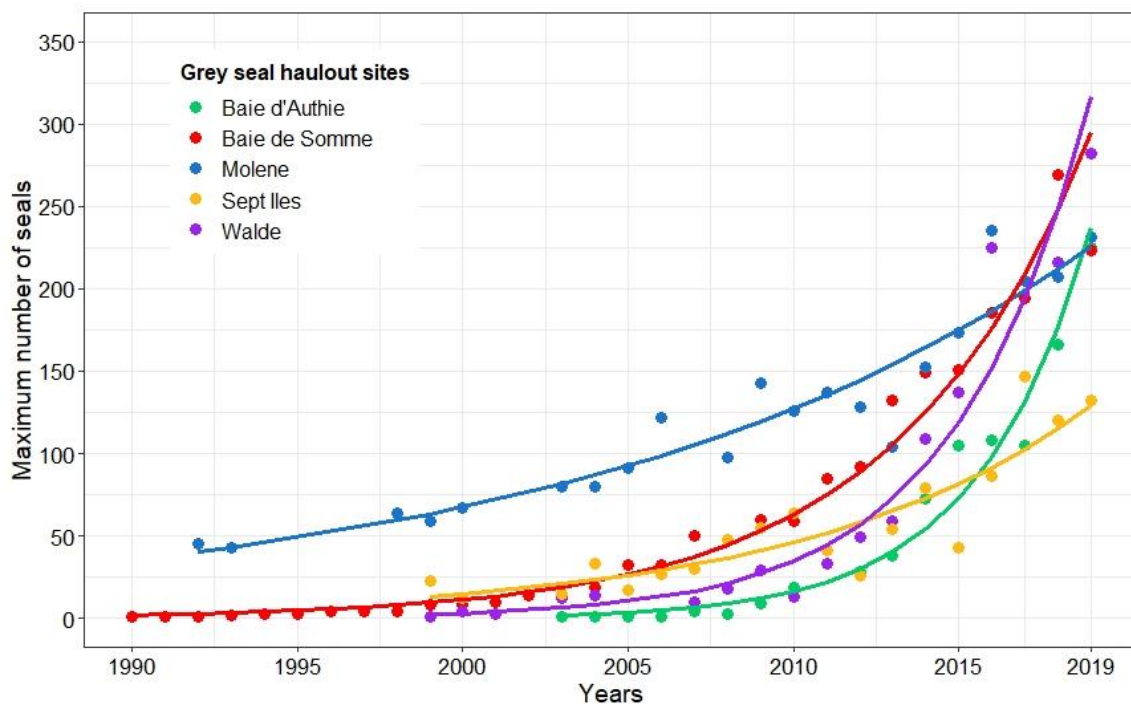


Figure 5: Trends in maximum grey seals numbers in the five main haulout sites in mainland France, from the early counts in the 1990's or 2000's to 2019.

Harbour seal pup production

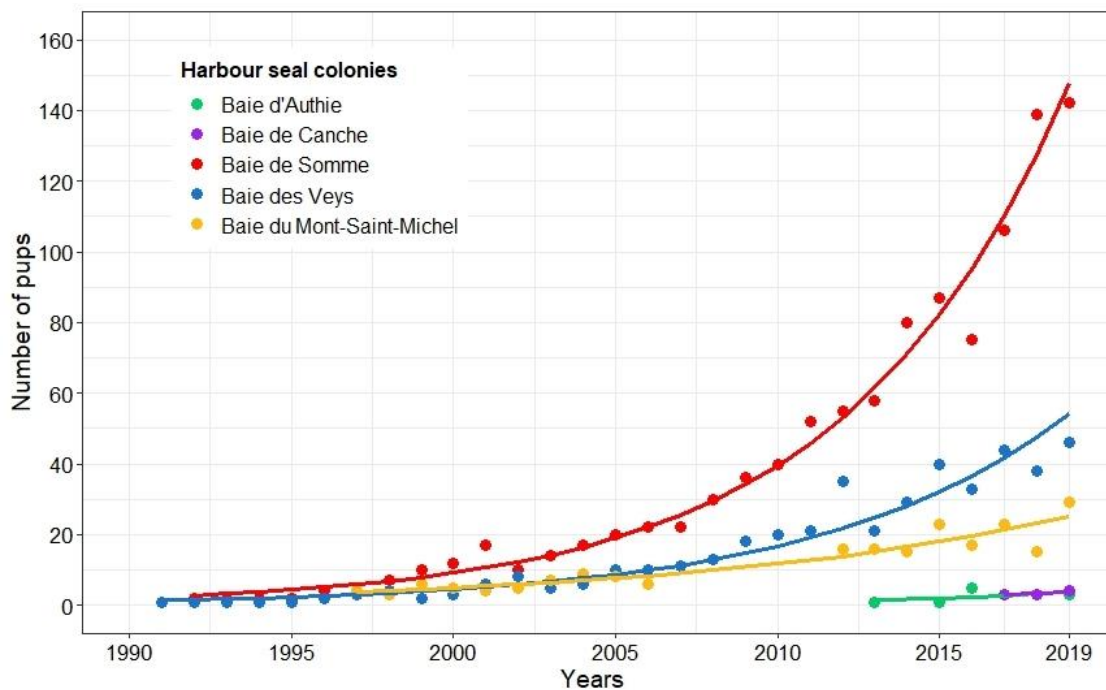


Figure 6: Trends in harbour seal pup production in mainland France, from the early counts to 2019.

Harbour breeding in 2019 was observed in five colonies, similarly to previous years. They are all located in the *Hauts de France* and in *Normandy* (Figure 2). With a total of 142 pups counted, the *baie de Somme* is the main breeding colony for harbour seals in mainland France, where 63% of the national harbour seal pup production is recorded (Figure 8), followed by *baie des Veys* (46 pup, i.e. 21 %) and *baie du Mont-Saint-Michel* (29 pups i.e. 13%). In *baie de Canche* and *Baie d'Authie*, in close vicinity of *baie de Somme*, less than 5 pups are recorded. For the record, harbour seals also breed in *Saint-Pierre et Miquelon* in the Western Atlantic, but pup production is not censused yet.

Figure 6 presents the trends in harbour seal pup production, per colony. Unsurprisingly, with an increase of +15.7% per year, the *baie de Somme* shows the strongest rate of increase since the first births in 1988, and this increase is especially observed since 2005.

Harbour seal censuses during the moult

During the moult, in August-September 2019, most harbour seals were observed in the Channel and southern North Sea, with the exception of 6 individuals in the *Archipel de Molène* (western Brittany; Figure 7). The highest numbers are recorded in *Baie de Somme*, with a maximum of 575 seals hauled out simultaneously. The *baie des Veys* comes second with 193 individuals, and in *baie d'Authie* and *baie du Mont-Saint-Michel* between 100 and 150 seals are counted at maximum. In the other sites, less than 50 harbour seals are counted during the moult, and the *Archipel de Chausey* doesn't seem to be used by harbour seals during this period.



ENGLISH CHANNEL NORTH SEA AND CELTICS SEAS

Harbour seals during moult in 2019

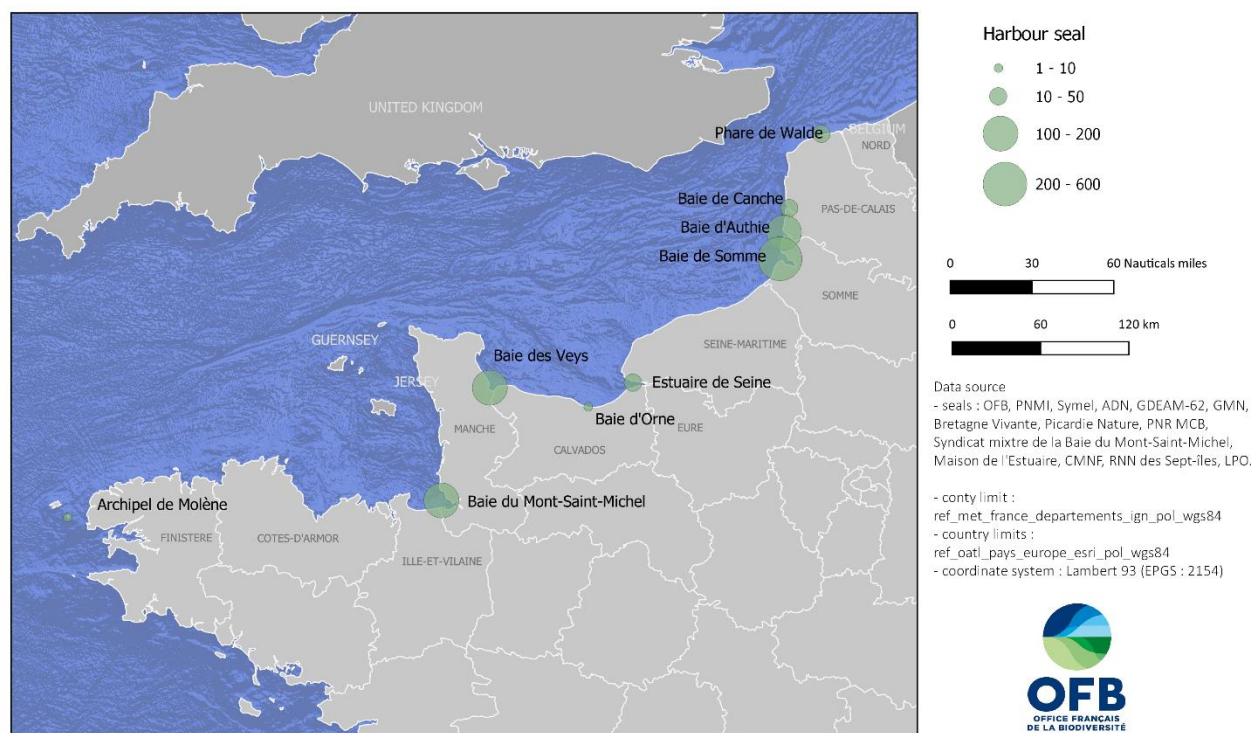


Figure 7: Distribution of harbour seals numbers during the moult (mainland France– 2019)

Figure 8 shows the trends in maximum numbers of harbour seals in the main colonies since their natural recolonization. Harbour seals in *baie d'Authie* were observed at a later date than in other sites but their rate of increase is higher (+24%/year), especially since 2010. This was particular true in 2019, with 28% more individuals counted compared to 2018. In *Baie de Somme* and *baie des Veys*, the two main colonies, harbour seal numbers keep increasing, with +13,2 % and +12,3 % per year respectively, with a marked increase

since 2005. The colony in *baie du Mont-Saint-Michel* increases regularly (+ 8,8%/year) at a rate similar to the rate of increase of its pup production.

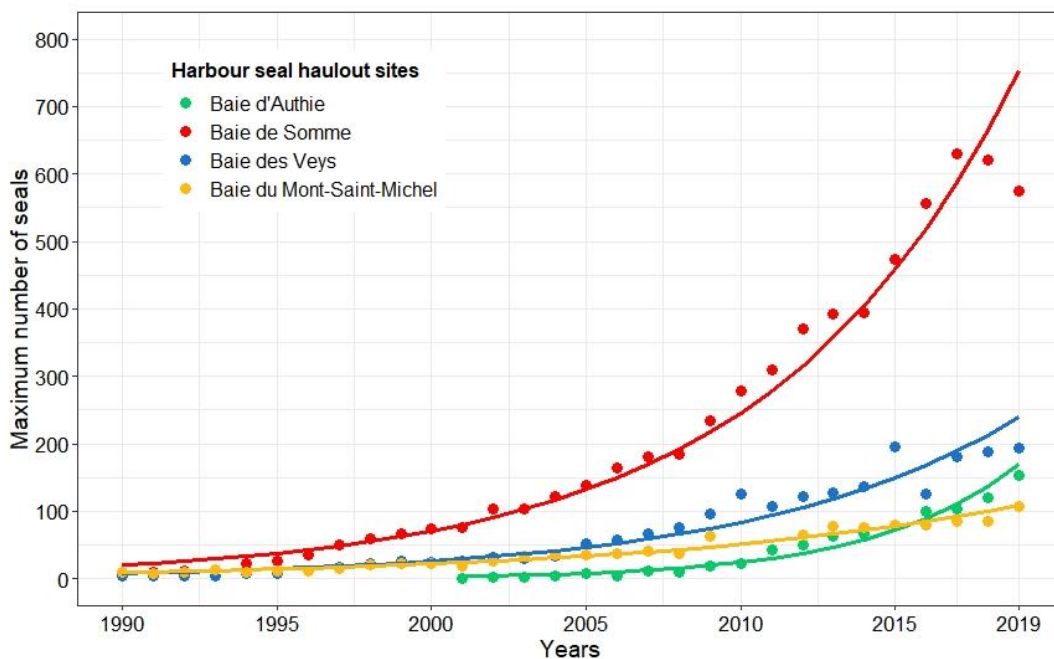


Figure 8: Trends in maximum numbers of harbour seals hauled out in the four main colonies in mainland France, from 1990 to 2019.

Overseas : Saint-Pierre et Miquelon

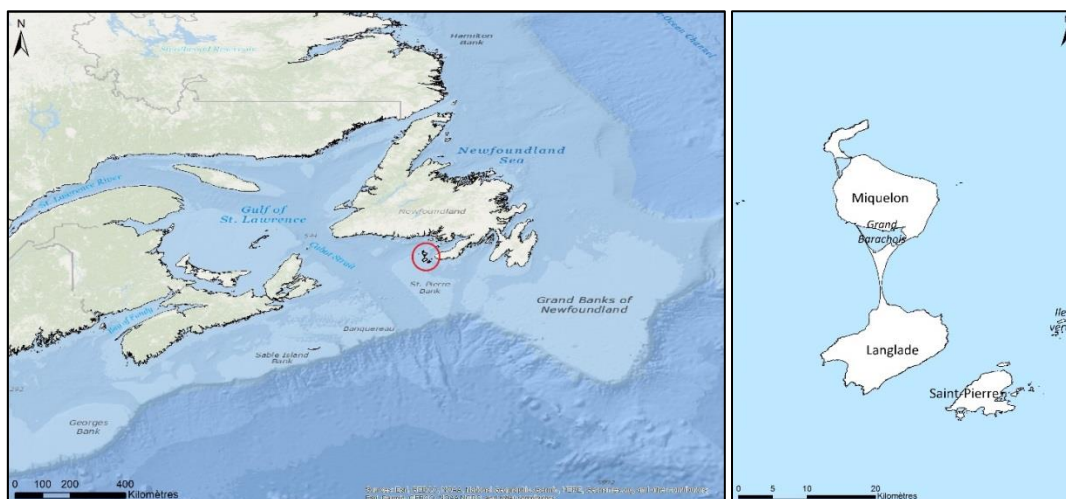


Figure 9: Saint-Pierre-et-Miquelon: geographical context and main islands of the archipelago.

To date, 7 full surveys of the whole archipelago were conducted (Table 2): 2 in 2016 (July and November), 3 in 2018 (April, July and October), and 2 in 2019 (May and August). Daily total numbers of seals were lowest in April or November (2018 and 2016 respectively) with 930 or 960 seals (both species combined), while usually 1000 and 1500 seals were counted between May and August (with a maximum of 2084 seals in August 2019).

More grey seals are counted during Summer (449 seals) than during the moult (May-June in the region; 297 seals, cf. Table 2). Such numbers make *Saint-Pierre et Miquelon* the French site with more grey seals,

together with the *Phare de Walde* in mainland France (282 seals during summer 2019). Seal numbers seem to increase since 2016 (first full surveys of the area), but it is yet too early to statistically confirm those trends over the long term.

Harbour seal numbers are also high, exceeding the counts recorded in mainland France. During Spring and Summer (May to October), harbour seals represent 80% of all seals counted in *Saint-Pierre et Miquelon*. This proportion reaches 90% in November. In 2019, from mid-July to late August, 1631 seals were counted, while this total was only 732 during Spring.

Table 2: grey and harbour seal numbers counted in Saint-Pierre et Miquelon from 2016 to 2019. NA: Not assessed.

Year	Grey seals			Harbour seals			Unidentified seal species		
	Moult (May-June)	July-August	Pre-breeding (Oct-Nov)	Breeding (May-June)	Moult (July-August)	Post-moult (Oct-Nov)	May-June	July-August	Oct-Nov
2016	NA	349	95	NA	728	856	NA	332	5
2017	NA	NA	NA	NA	NA	NA	NA	NA	NA
2018	147	259	377	773	944	879	9	34	9
2019	297	449	NA	732	1631	NA	29	9	NA

Contacts and useful links

Site	Structure	Contact address	Useful links
Phare de Walde	Mammalogical Coordination of the North of France	info@cmnf.fr jkarpozopoulos@nordnet.fr	http://www.cmnf.fr/
Baie de Canche	GDEAM-62 Group for the protection of the environment of Montreuil and Pas-de-Calais.	etude.Gdeam-62@orange.fr standard gdeam.asso@orange.fr	03 21 06 50 73
Baie d'Authie	Berck sur Mer Nature Discovery Association	adn.62600@gmail.com	www.facebook.com/ADN.Berck
Baie de Somme	Picardie Nature	sarah.monnet@picardie-nature.org contact@picardie-nature.org	http://www.picardie-nature.org/
Estuaire de Seine	Estuary House Maison de l'Estuaire	Thomas.lecarpentier@maisondelelestaire.org	www.maisondelestaire.org
Estuaire de l'Orne	Normand Mammalogical Group (GMN)	1018 Boulevard du Grand Parc 14 200 Hérouville-Saint-Clair m.francou@gmn.asso.fr 09.54.53.85.61	http://www.gmn.asso.fr/index.php?post/Nos-actions-en-faveur-des-mammif%C3%A8res-marins
Baie des Veys	Cotentin and Bessin Regional Natural Park, Beauguillot NNR	jfelder@parc-cotentin-bessin.fr 3, village Ponts d'Ouve, Saint-Côme-du-Mont - 50500 Carentan-les-Marais	https://parc-cotentin-bessin.fr/
Havre de Sienne	Association Avril	Jeremy.lefebvre@associationavril.org 0233190035	http://www.associationavril.org/ http://vigiedeshavres.associationavril.org/
Baie du Mont Saint-Michel	Syndicat Mixte Baie du Mont-Saint-Michel	a.hemon@rcm-mtstmichel.fr	http://www.projetmontsaintmichel.com/les_travaux/environnement.html
Archipel des Sept-îles	NNR Sept-Iles-LPO	pascal.provost@lpo.fr armel.deniau@lpo.fr	
Baie de Morlaix	Bretagne Vivante	david.hemery.bv@gmail.com	
Triagoz	French biodiversity office Departmental service Côtes d'Armor	olivier.auge@ofb.gouv.fr	
Plateau de la Méloine	Bretagne Vivante	david.hemery.bv@gmail.com	
Portsall	French biodiversity office, Departmental service Finistère	myriam.gueguen@ofb.gouv.fr	
Molène	Iroise Marine Natural Park	cecile.gicquel@ofb.gouv.fr yannis.turpin@ofb.gouv.fr	https://parc-marin-iroise.fr/
Chaussée de Sein		livier.schweyer@ofb.gouv.fr	
Les Etocs	French biodiversity office -DFM Atlantique	marie.le-baron@ofb.gouv.fr	
Les Glénan	Bretagne Vivante	marion.diard@bretagne-vivante.org margot.leguen@bretagne-vivante.org	https://www.bretagne-vivante.org/
St Pierre et Miquelon	Direction des Territoires de l'Alimentation et de la Mer de Saint-Pierre et Miquelon	frank.urtizbera@equipement-agriculture.gouv.fr Direction des Territoires, de l'Alimentation et de la Mer Boulevard Constant Colmay, BP : 4217 - 97500 Saint-Pierre et Miquelon	http://www.saint-pierre-et-miquelon.developpement-durable.gouv.fr/