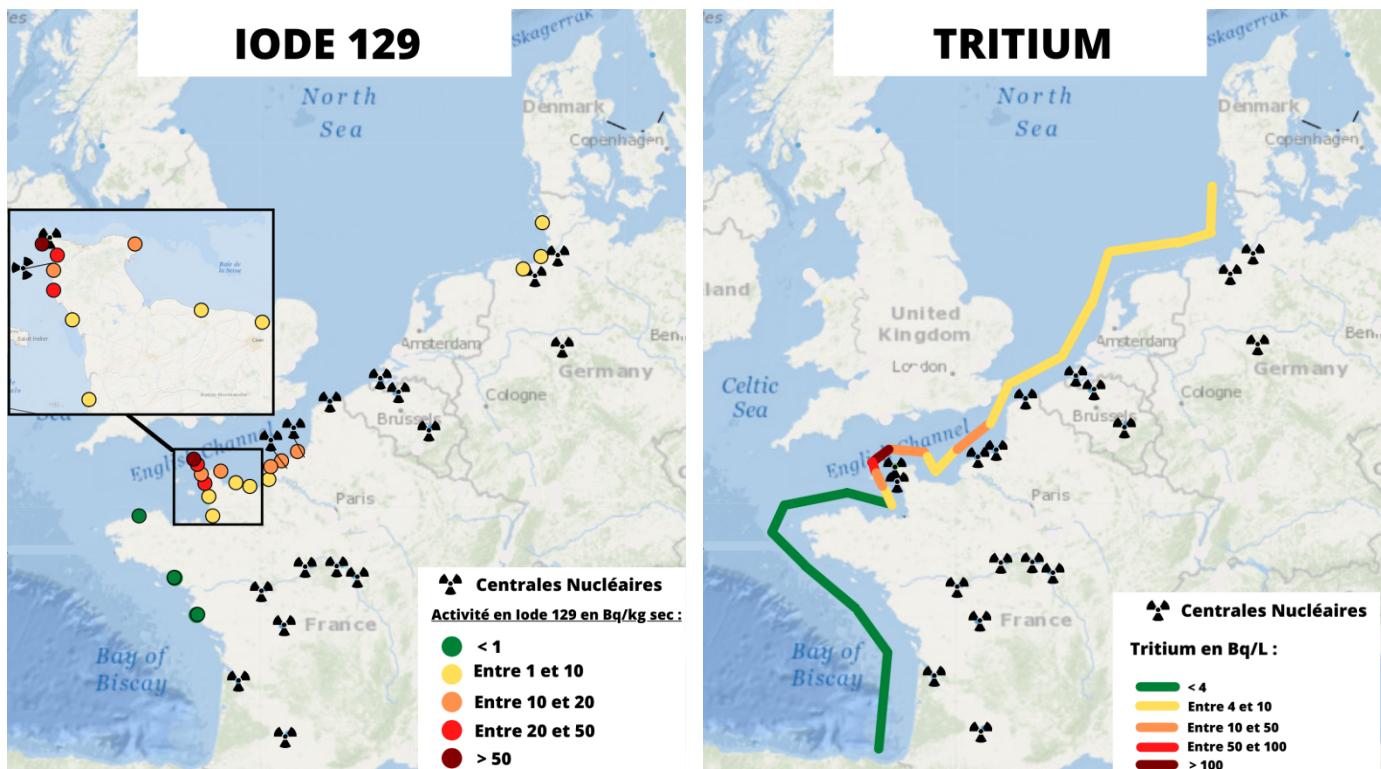


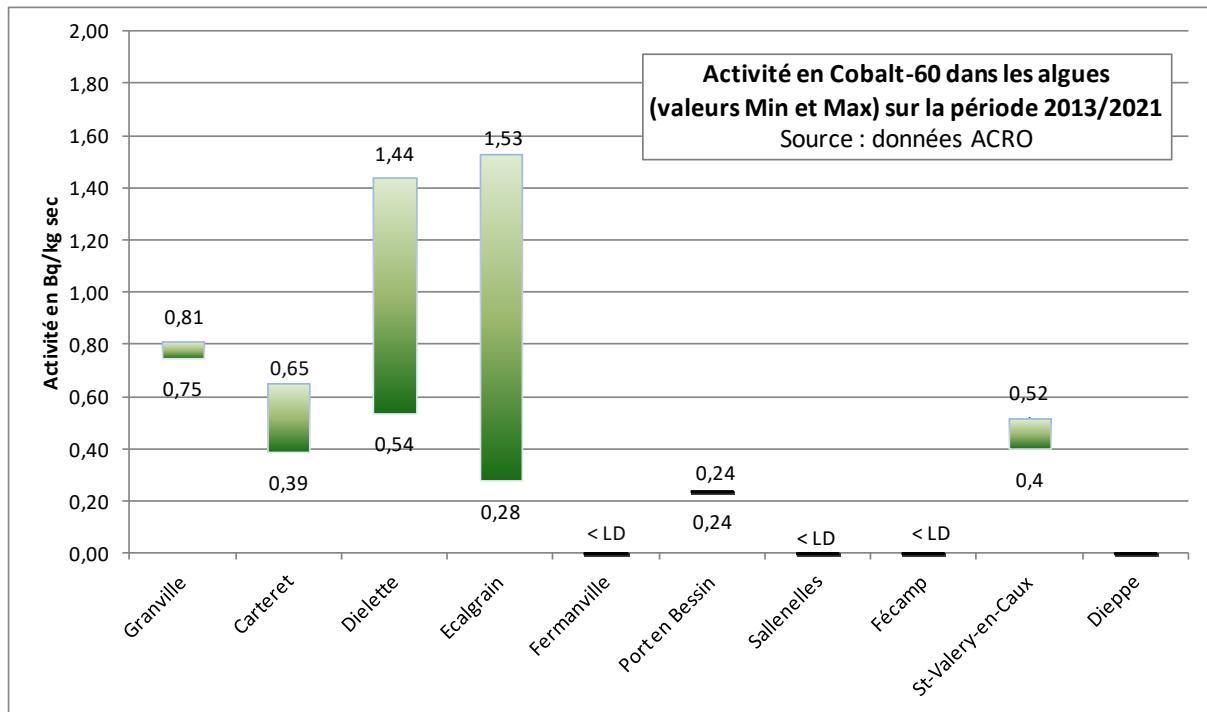
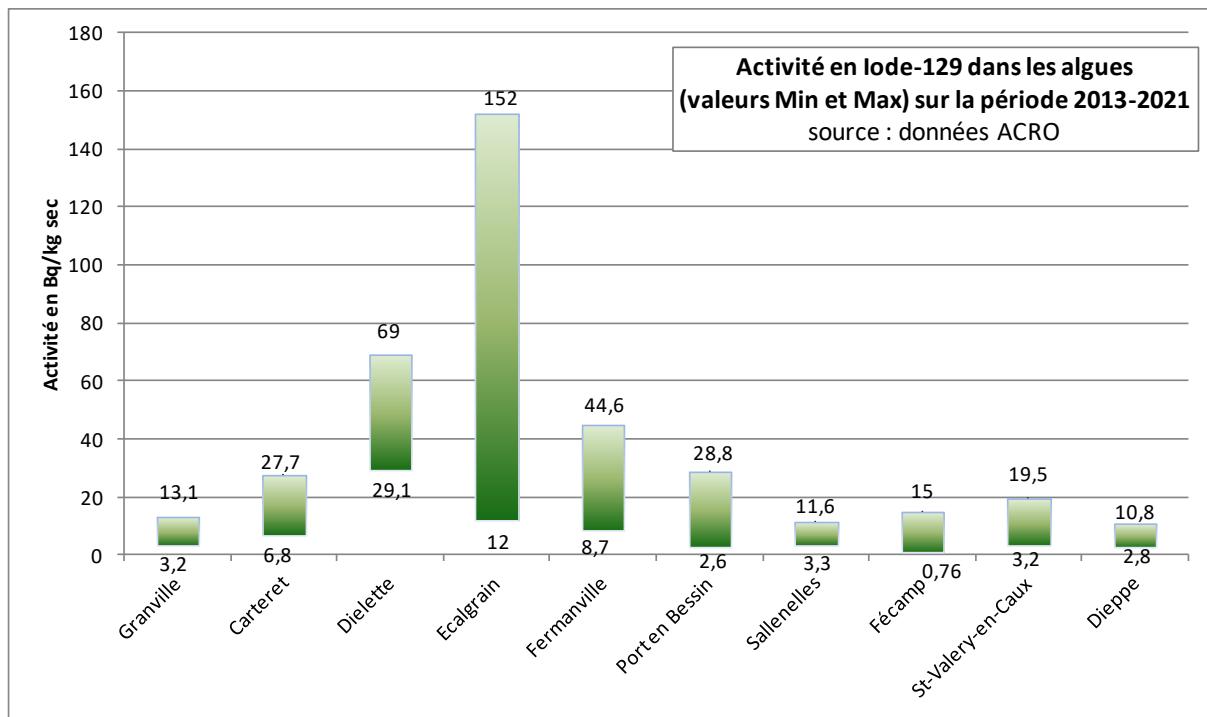
# Iodine-129 and tritium levels on the Atlantic, Channel and North Sea coasts

## Summary



## Iodine-129 and cobalt-60 along the Channel coastline

Results of ACRO's regular monitoring along the Channel coastline



## Iodine-129 levels from the Basque coast to Denmark

In 2021, ACRO completed its regular monitoring of the Normandy coastline with a sampling campaign from the Basque coast to the Danish border.

### Results of sampling from the North Sea to Denmark (summer 2021)



Sample	Brown algae		
Sampling place and date	Nordhenham, Germany 04/08/21	Cappel-Neufeld, Germany 03/08/21	Strucklahnungshörn, Germany 02/08/21
Iodine 129	<b>1.70 ± 0.35</b> Bq/kg dry	<b>2.30 ± 0.39</b> Bq/kg dry	<b>2.90 ± 0.42</b> Bq/kg dry

### Results of sampling on the Atlantic coast and in the Channel (summer 2021)

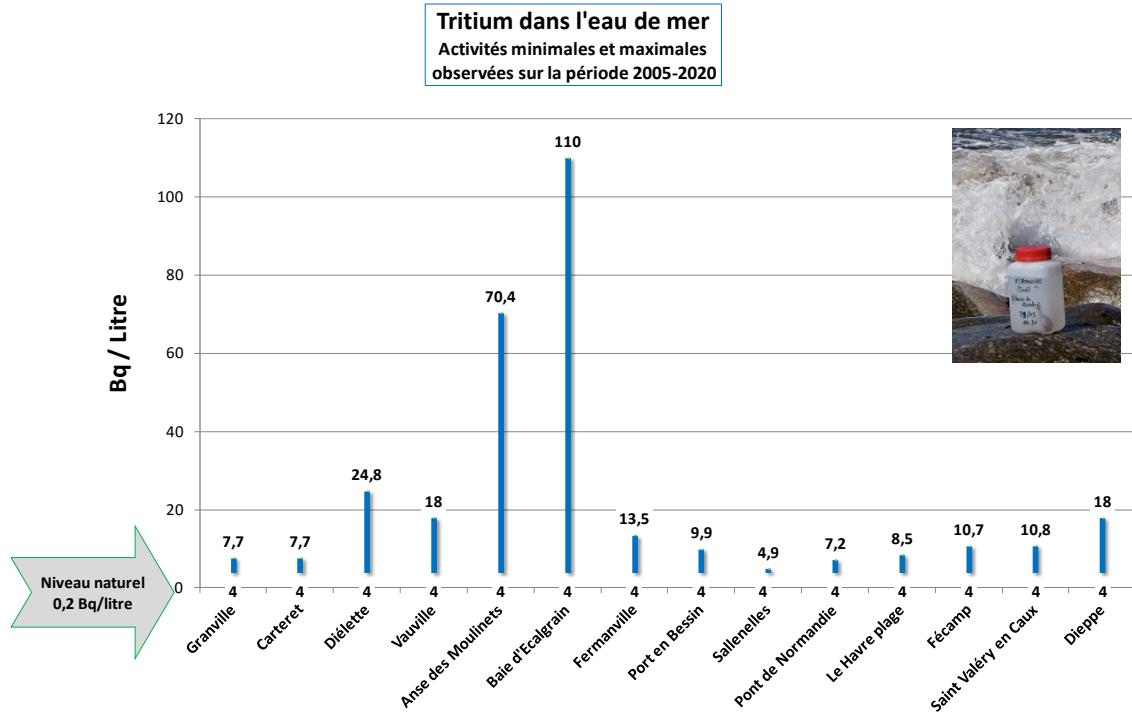
Sample	Brown algae		
Sampling place and date	Port Meleu, France (44) 15/07/21	Sable d'Olonne, France (85) 04/09/21	Pleumeur Bodou, France (22) 06/09/21
Iodine 129	< 0.94 Bq/kg sec	< 0.77 Bq/kg sec	< 0.74 Bq/kg sec

The iodine-129 released at La Hague by ORANO follows the sea currents towards northern Europe; **this element is still detectable in algae up to more than 1000 km to the north-east**. It is not identified in samples collected on the Atlantic coast.

We did not detect cobalt-60 in these algal samples.

## Tritium in seawater

Results of ACRO's regular monitoring along the Channel coastline



For comparison, outside the areas influenced by discharges from nuclear facilities, tritium levels in seawater are of the order of 0.1 to 0.2 Bq/L.

## Tritium in seawater from the Basque coast to Denmark

Results of the sampling campaign in the North Sea to Denmark (summer 2021)



Sample	Seawater								
Sampling place and date	Gravelines France 08/08/21	Krummhorn Germany 05/08/21	Nordenham Germany 05/08/21	Loxstedt Germany 04/08/21	Cappel-Neufeld, Germany 03/08/21	Altenbruch Germany 04/08/21	Balje, Germany 04/08/21	Strucklahn unghörn Germany 02/08/21	
Tritium	<b>5.1 Bq/L</b>	< 4 Bq/L	< 4 Bq/L	<b>4.4 Bq/L</b>	< 4 Bq/L	<b>4.8 Bq/L</b>	< 4 Bq/L	< 4 Bq/L	

## Results for the Atlantic and Channel coasts (summers 2020 and 2021)

Sample	Seawater						
Sampling place and date	Cap Breton, France (40) 29/07/20	Marennes, France (17) 02/08/20	Sable d'Olonne, France (85) 04/09/21	Port Meleu, France (44) 19/07/21	Pornic, France (44) 07/08/20	Névez France (29) 10/09/21	Pleumeur Bodou France (22) 06/09/21
Tritium	< 4 Bq/L	< 4 Bq/L	< 4 Bq/L	< 4 Bq/L	< 4 Bq/L	< 4 Bq/L	< 4 Bq/L

## Carbon-14 in the Channel and North Sea

Extracts from the IRSN Normandy and Hauts-de-France radiological survey for carbon-14 in algae (source IRSN)

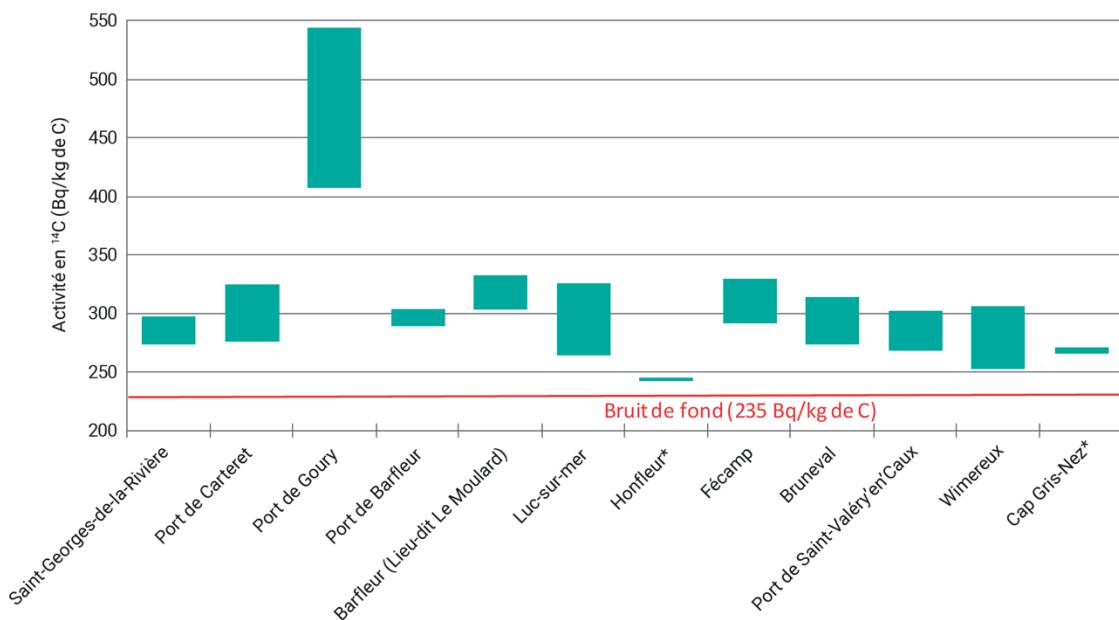
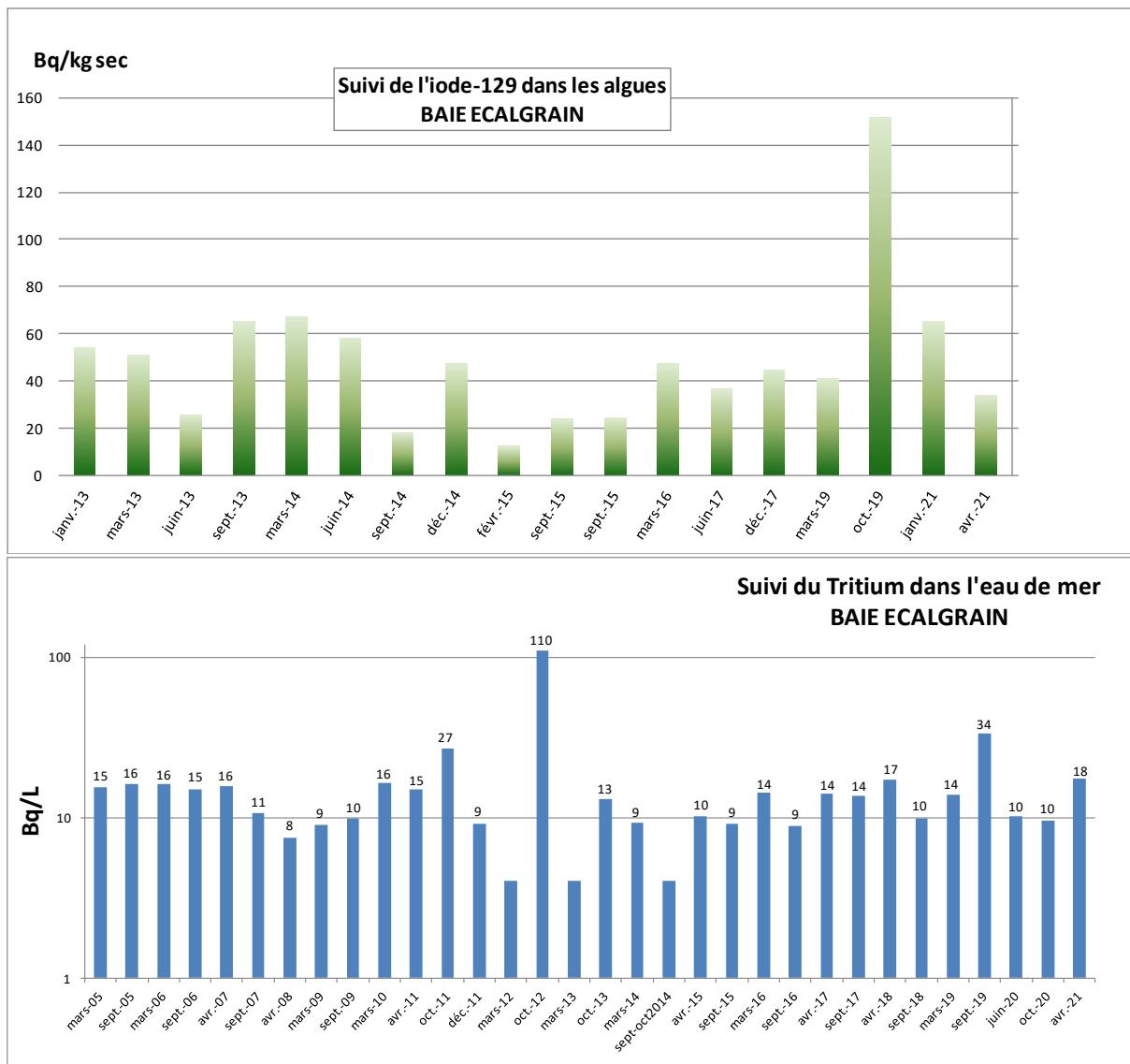


Figure 30 : Gamme d'activité en carbone 14 dans les algues brunes observée sur la période 2000-2014 par l'IRSN (les algues brunes prélevées sont de l'espèce *Fucus serratus*, sauf pour les sites marqués d'un (\*) où il s'agit de *Fucus vésiculeux*)

Carbon-14 levels in crabs and scallops sampled in the Baie de Seine by the IRSN also significantly exceed natural levels. And fish taken off the coast of the Cotentin peninsula almost all show specific activities above 300 Bq/kg of carbon.

## Time evolution of iodine-129 and tritium levels

Results of ACRO's regular monitoring along the Channel coastline



Iodine-129 and tritium are systematically measured, respectively, in seaweed and seawater collected in Ecalgrain Bay, in La Hague (50).

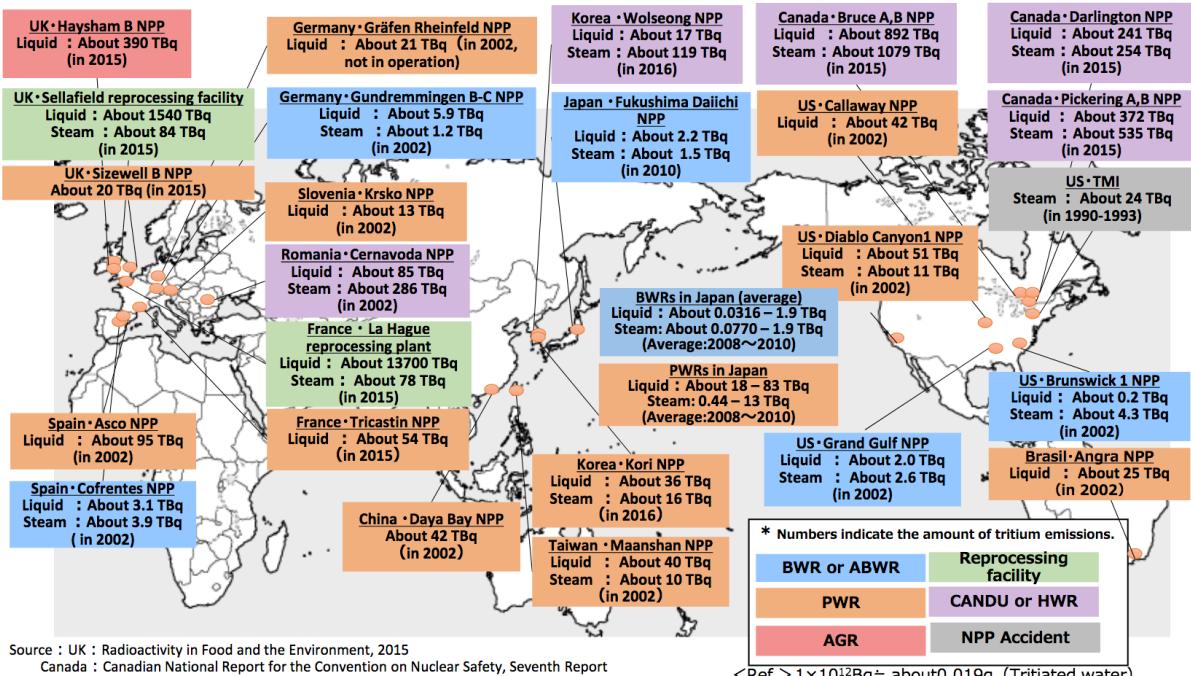
The levels observed in recent years show no downward trend in discharges.

# Tritium discharges around the world

Japanese government's assessment of tritium discharges worldwide

## The key of the report(8): Examples of tritium emission

[Ref.]Annual Tritium emissions from nuclear facilities around the world



Source : UK : Radioactivity in Food and the Environment, 2015

Canada : Canadian National Report for the Convention on Nuclear Safety, Seventh Report

France : Tritium White paper 2016

Korea : FY2016 Survey on environmental radioactivity around the nuclear power plant and evaluation report, KHNP

Other countries : UNSCEAR[2008 Annual report] Japan : Fukushima Pref. and TEPCO report 2010 (data period from April 1, 2010 to March 11, 2011)

# The Citizens' Watch

The Observatoire citoyen de la Radioactivité dans l'Environnement (O.C.R.E.) is a unique monitoring network that provides information on the levels and trends of radioactivity in the environment. Based on citizen vigilance, the Observatory, set up by ACRO, allows any person to get involved in an active approach to environmental monitoring and to become a "voluntary sampler".



## CALL FOR DONATIONS

See our results : <https://www.acro.eu.org/resultats/> or via the QRCode



Programme of our next sampling campaign, from 5 to 8 October 2021:

**DU 5 AU 8 OCTOBRE 2021**  
CAMPAGNE DE PRÉLÈVEMENTS POUR LA SURVEILLANCE  
RADIOLOGIQUE DU LITTORAL NORMAND

**ACRO**  
ASSOCIATION POUR LE CONTRÔLE  
DE LA RADIOACTIVITÉ DANS L'OUEST

**OBSERVATOIRE CITOYEN  
DE LA RADIOACTIVITÉ**

Ces campagnes de prélèvements sont ouvertes à tous !  
Rejoignez les équipes de préteurs volontaires.

PRÉTEUR VOLONTAIRE, POURQUOI PAS VOUS ?

**OBSERVATOIRE CITOYEN  
DE LA RADIOACTIVITÉ**  
LE PLANNING

**MARDI 5 OCTOBRE**  
BAIE DU MONT SAINT MICHEL  
Rdv à Granville à 13h30, parking de l'église du Roc.

**MERCREDI 6 OCTOBRE**  
COTENTIN

- Rdv à Barneville-Plage à 14H30, sur le parking face à la mer.
- Rdv à Diélette à 14h30, plage du Platé.
- Rdv à la Baie d'Ecalgrain à 14h30, sur le parking.
- Rdv à Fermanville à 16h00 au port de Cap Lévi.

**JEUDI 7 OCTOBRE**  
PLAGES DU CALVADOS

- Rdv à Port en Bessin à 17h00, au marché aux poissons sur le port.

**VENDREDI 8 OCTOBRE**  
ESTUAIRE DE L'ORNE

- Rdv à Sallenelles à 9h00, devant la Maison de la nature.

PLAGES DE SEINE MARITIME

- Rdv à St-Valéry en Caux à 9h00, parking du casino.

Prélèvements dans le respect des normes sanitaires.

**CONTACT**  
02 31 94 35 34  
06 52 82 39 44

**ACRO** PRÉTEUR VOLONTAIRE, POURQUOI PAS VOUS ?