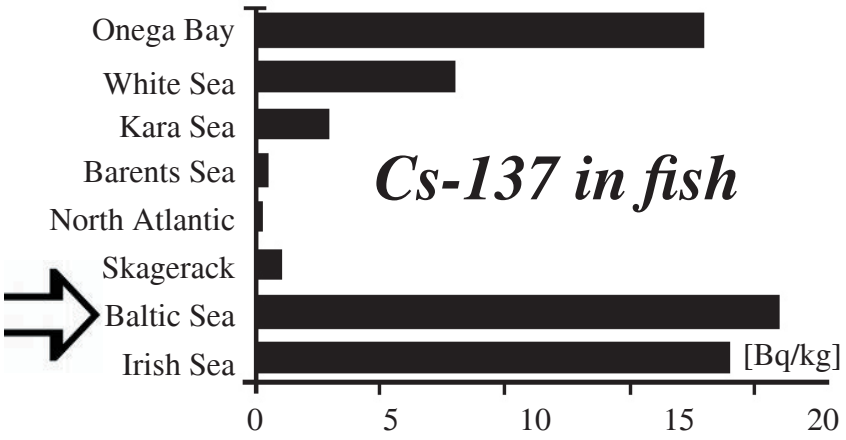
The Baltic Sea is Radioactive

How serious is it? It depends on who you ask: Yet, the Baltic Sea is among the most radioactive oceans in the world. See the illustration below from the Swedish Defence Research Establishment (1).

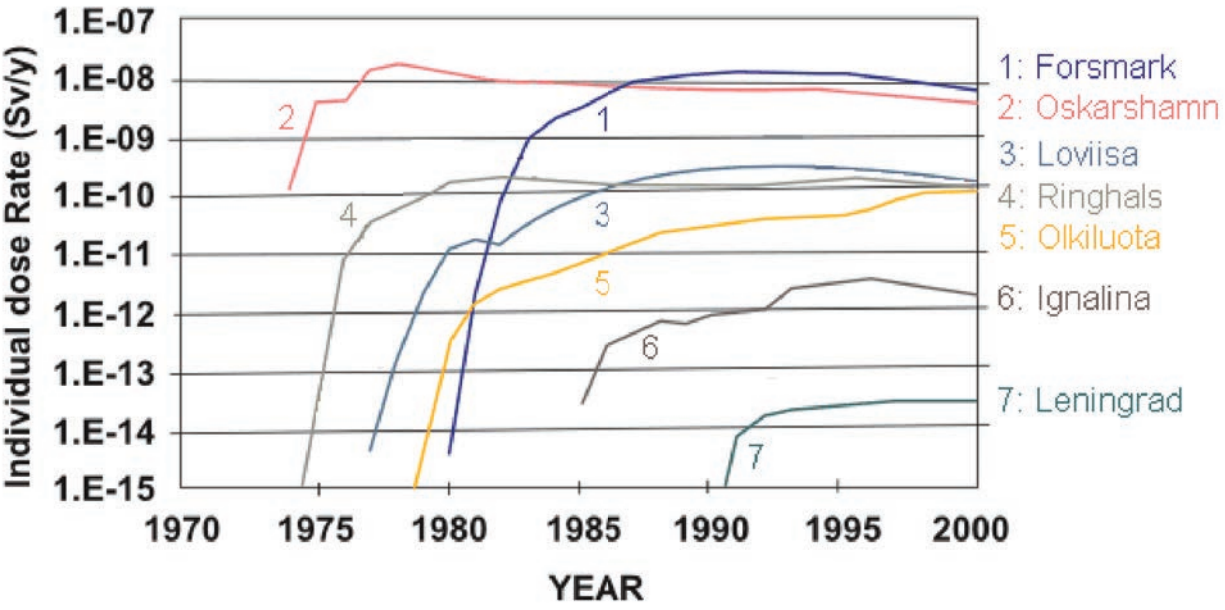


FOA: Levels of cesium-137 in fish from northern Seas during the first half of the 1990s (1).

What are the reasons for this?

One reason is that the exchange of water between the Baltic and the big oceans is very small (only about 1% per year). Some of the greatest historical sources of radioactive contamination we can no longer do anything about: The Chernobyl accident, the atmospheric nuclear bomb tests – and Sellafield's enormous discharges (In spite of the minimal influx of currents and the great distance to England – Sellafield is still, according to the Helsinki Commission, the third dominating factor, which has caused the radioactivity in the Baltic Sea).

Knowing that the Baltic Sea is already among the most radioactive waters in the world – why would we want to make it any worse? **We have every possibility to do something about today's releases** – and to prevent future releases from many projects now being planned around the Baltic Sea.



Estimation of the contribution of the Baltic Sea area nuclear power plants to the annual individual doses of the critical groups of population (adapted from reference 2).

Nuclear Installations around the Baltic Sea

Along the coasts of the Baltic Sea there are a great number of nuclear facilities, most of them in operation, some waiting for decommissioning – and more are being planned. **Among all the reactors along the Baltic coasts, the Swedish reactors are responsible for the worst releases to populations around the Baltic Sea!** (This is according to the most serious investigations, carried out by European Communities and experts from Riso Nuclear Research Laboratory – and it holds true for the whole period from 1970 to 2000! See reference 2, at the end of this text).

The Forsmark and Oskarshamn reactors have been alone at the top with far greater releases for all of the past 20 years – in fact at a level of 100,000 times more, than the Sosnovy Bor reactors close to St Petersburg (see Figure 2 below, note that the scale on the left hand axis shows orders of ten).

The Bottnian Sea in the north and the eastern parts of the Finnish Gulf are the most severely affected areas. Finland is also increasing their releases – and just like Sweden, they plan to store the most dangerous waste (their spent nuclear fuel) at the sea, in the sea and below the Baltic Sea.

Swedish authorities and nuclear companies actually call the Baltic Sea a **"recipient"** – that is recipient of radioactive releases – because in the vast body of water, it is possible to dilute and spread the radioactivity, below the generous limits that the industry has to observe.

In the summer of 2005 it was discovered at the storage for low- and intermediate radioactive waste, at Forsmark (SFR) – that it was leaking radioactivity, 10 times more cesium than normal into the Baltic Sea (this storage is also placed out in the water, on a tiny island). It is not hard to see why we have a problem. SFR was not supposed to start leaking for at least 50-100 years. Because of water-erosion, the waste containers leaked after 10 years. – So what is going to happen to the much more dangerous storages of highly radioactive spent fuel, which are being planned at Olkiluoto on the Finnish west coast – and on the east coast of Sweden. They need to be kept safe for many thousands of years.

Fish Spreads Radioactivity to Human Beings

Eating fish is the major way that people absorb radioactivity. In the 1998 Risö Laboratory report "Modelling and Assessment of doses," it is written that: **"The dominating exposure pathway is that of fish ingestion, which contributes about 94% - while the other pathways yield the rest."**

The Helsinki Commission's and the Swedish Radiological Protection Authority's own statistics show new peaks and increased levels of cesium-137 in fish caught just outside the reactors at Oskarshamn, Forsmark, Studsvik and Olkiluoto (3). Furthermore we know that cesium and strontium is present in all of the northern Bottnian Sea, and in the Finnish Gulf – which are the most polluted parts of the Baltic Sea.

The Baltic Sea is NOT a Garbage Dump!

And the ocean is not to be a recipient for any more radioactive waste

Therefore, we demand the following:

1. that radiological releases are included in all attempts to prevent the pollution of the Baltic Sea,

2. thorough investigations of radionuclides in water, fish and sediments and a tracking down of the sources, and

3. a moratorium, a stop to the establishment of any new nuclear projects on the coasts of the Baltic Sea – not least a stop for the planned Swedish and Finnish final storages of spent nuclear fuel at the Baltic Sea, as well as a stop to Russian plans for receiving highly radioactive waste from all of Europe, at harbours located in the Finnish Gulf.

References

(1) FOA, Sweden's Defence Research Establishment's illustration, from the report 'Radioactive sources of main radiological concern in the Kola-Barents region' (Executive Summary) Ronny Bergman and Alexander Baklanov – FRN Stockholm 1998.

(2) Sven P. Nielsen, "Modelling and Assessment of Doses to Man." Risö National Laboratory, DK-4000 Roskilde, Denmark; and European Communities, 2000. See: http://www.iae.lt/inpp_en.asp?lang=1&subsub=41 (Fig.5.1.20). See also the presentation by by Sven P. Nielsen, HELCOM MORS, "Radiation doses to man from radioactivity in the Baltic Sea," at the Baltic Sea NGO Forum 2006 (available at www.milkas.se).

(3) Helsinki Commission on radioactivity in fish, caught between Oskarshamn, Forsmark and Olkiluoto: http://www.helcom.fi/environment2/ifs/ifs2004/en_GB/C-137fish/

For more info see: Nordic Council, see: 'Member Proposal on measures to Prevent Radioactive Pollution of the Baltic Sea' by the Left-wing Socialist Green Group in the Nordic Council, at: http://www.norden.org/sagsarkiv/docs/A1379.pdf

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