



As scientists have demonstrated, aquatic and atmospheric currents tend to concentrate pollution in and above the Arctic Ocean, neighbouring countries and food web. An international policy convergence is not developing as naturally as the global climatic convergence. For this reason, France has committed to initiate an international agreement on environmental management of the Arctic, followed by a proposal from Robin des Bois*, a non-governmental organization based in France. This seminar in Monaco should be seen as the first policy oriented action with the aim of fulfilling this commitment. As every nation is responsible for problems in the Arctic, all those who contribute to the damage should play a role in the solution.

The Arctic Haze and its Lack of Political Visibility

In a sense, the Arctic haze was discovered by the Norwegian explorer Nansen during the Arctic *Fram* expedition when he attributed splashes of dark stains on ice cover to air pollution. The expression "Arctic haze" was coined in 1956 by a US climatologist. The decreased visibility for military aircrafts was the only concern with regard to the Arctic haze at this point in time. Three decades later, another climatologist showed that the haze reaches its peak in April and that most of it accumulates between 75° – 80° latitude near the North Pole. In 1984 at an Arctic Science forum, international scientists held a press conference stating that **"air currents do not respect international boundaries"** and warned against "pole-ward industrialisation." In 1989, Saav and Khalil further suggested that Arctic haze leads to warming of the Arctic atmosphere. For at least the past two decades, the Arctic haze has been well known to comprise toxic submicron dust originating from Europe, North America, Russia, and Asia. This dust is produced by human activities and intentional or unintentional forest and agricultural fires. Arctic haze covers about 10% of the Earth and as said in the only Arctic Haze Assessment released by AMAP (Arctic Monitoring and Assessment Programme) in 2006 "it is not known how much of the pollution released from the haze is retained within the Arctic and how much is transported out of the Arctic." No specific international agreement has been built up to investigate, stabilize and/or reduce this international pollution.

Meanwhile, two conventions have entered into force concerned by worldwide transportation of pollutants. 1- The Convention on Long-Range Transboundary Air Pollution, (CLRTAP) was signed in Geneva in 1979 with the aim of protecting the environment and humans against air pollution; yet, this convention originated when scientists established the link between European sulphur emissions and the acidification of Scandinavian lakes in the late 60s. The CLRTAP Convention focuses on exchanging opinions and scientific research and policies to help prevent air pollution. It was the first international legally binding instrument to deal with air pollution problems. The 1994 Protocol states that the measures to control sulphur and other

air pollutant emissions would "contribute to the protection of the sensitive Arctic environment." The 1998 protocols on Heavy Metals and on Persistent Organic Pollutants (POPs) highlight the fact that measures to control emissions would contribute to the protection of the environment and human health, including in international waters and in the Arctic. The 1998 Protocol on Heavy Metals and the POPs Protocol also acknowledge that according to the CLRTAP POPs are transported beyond boundaries, atmospheric currents are the principal means of transport, the Arctic ecosystems and especially its indigenous people, who subsist on Arctic fish and mammals, are particularly at risk because of the bioaccumulation of persistent organic pollutants.

2- The Stockholm Convention on Persistent Organic Pollutants, which entered into force in 2004, is an international treaty to protect humans and the environment from POPs. The Stockholm Convention aims at prohibiting the use of POPs and at helping to prevent the introduction of new persistent chemicals into the environment. From a list of chemicals produced internationally, twelve known as the Dirty Dozen were considered to be the most dangerous. It was agreed by the 151 signing parties that nine of these would be banned. To its credit, the Stockholm Convention considers and mentions that air and water are vehicles that transport pollutants. Moreover, the convention states that migrating species, which comprise Arctic communities' traditional food, carry pollution as well, thus creating a public health issue.

These two international conventions are slow moving. CLRTAP does not take into account ashes or soot. Some important protocols, like the one to abate acidification, eutrophication and ground level ozone, have been neither signed nor ratified by a number of Arctic countries. The convention has not been signed as of August 28th 2008 by China, India or convenience flag states such as Panama. The Stockholm Convention is obsessed by the Dirty Dozen and neglects for instance residues from pharmaceuticals and personal care products. In their current form these conventions are not adapted to combat Arctic haze.

* <http://www.robindesbois.org/english/arctic.html>

OSPAR Sparks Action on the Arctic

The OSPAR (Oslo-Paris) Commission meeting in Brest, Brittany (June 2008) furthered OSPAR's work by taking steps to protect the high seas on the Mid-Atlantic Ridge. This would be an international first. This potential marine protected area, called the Charlie Gibbs Fracture Zone, is around 306,000 km² and between 49° and 55° in the North East Atlantic. Charlie Gibbs is part of the Sub Arctic Front and could provide a habitat for migratory species like whales and leatherback turtles. However, this area is not pristine: deep water trawling activities are likely to have damaged sponges and coral communities. The OSPAR contracting parties are unanimously in favour of following up the proposal, in order to protect the Mid-Atlantic Ridge even though some legal apprehensions have been expressed. OSPAR's Norwegian president is in full support of the proposal. This "Charlie Gibbs Proposal" is a good example of what could be potentially applied to protect the Arctic High seas.

Following are some examples of OSPAR's work. Radioactive substances is a specific field that clearly impacts the Arctic region. Fertilizer plants (especially in the U.K., France, Belgium and the Netherlands) releasing Polonium 210 in Europe cause contamination of Arctic shrimp. A number of other sources of technologically enhanced natural radioactivity are addressed by OSPAR, among them sludge and deposits produced by offshore oil and gas activities and releases from Rhodia plants that use rare earth material containing thorium. Concerning the artificial radionuclides, OSPAR states that the main sources of contamination in the Arctic region originate from ongoing activities of European nuclear fuel reprocessing plants. It is important to note that the dumping of radioactive wastes is among local sources of radioactive contamination in the Arctic. Riverine inputs and dredging sludge outside the Arctic region are believed to contribute to the eutrophication, and the Arctic Ocean contamination from historical, new and badly known pollutants. Marine litter is also a global problem on which the OSPAR Biodiversity committee works in the North East Atlantic. Marine litter is a contributor to the contamination of the aquatic food web; seabirds and marine mammals are particularly exposed to entanglement. Plastic waste and other items are present in the Arctic region; for example, a survey found that on the shores of Spitsbergen Island plastic items could be found every five meters and an inventory composed by French scientists states that up to 220 types of marine litter per km² are present at 2,500 metres beneath the Arctic ice pack.

An action plan to prepare a quality assessment of the Commission's maritime area produces reports on different maritime regions. They include Region I – "Arctic Waters," which comprises "the Barents Sea, the Norwegian Sea, the Iceland Sea and Shelf, the South-East Greenland shelf, the Greenland Sea, and also includes a sector of the Arctic Ocean." This is OSPAR's second largest region in surface area. These reports provide recommendations and priorities for actions.

OSPAR comprises five strategies: the Biodiversity and Ecosystems strategy, the Eutrophication strategy, the Hazardous Substances strategy, the Offshore Oil and Gas Industry strategy, and the Radioactive Substances strategy. These are articulated with the Joint Assessment Monitoring Programme to assess the status, follow up and implementation of the strategies and the resulting benefits to the marine environment.

The OSPAR Convention of 1992 for the protection of the Marine Environment of the North-East Atlantic combined the Oslo Convention of 1972 on dumping wastes at sea and the Paris Convention of 1974 on land-based sources of marine pollution. The OSPAR Convention has been ratified by Portugal, Spain, France, Switzerland, Germany, Luxemburg, Belgium, the United Kingdom, the Netherlands, Denmark, Norway, Finland, Iceland and the European Community. In spite of many efforts by the signatory parties, the Russian government has not signed the OSPAR Convention. OSPAR requires contracting parties to "take all possible steps to prevent and eliminate pollution and shall take necessary measures to protect the marine environment area against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas that have been adversely affected."

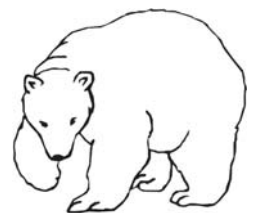
Danish researchers have recently found that sledge dogs fed with whale-meat and fish caught along coastal Greenland suffer from changes to their immune systems and from hepatic and renal lesions. These studies suggest once again that living beings and notably humans at the top of the Arctic food chain may be affected by the Arctic contamination.

Polar Star Managing Editor:

Jacky Bonnemains

Documentation and writing:

Jacky Bonnemains, Miriam Potter,
Charlotte Nithart, Christine Bossard
et Kerry Sheehan



Robin des Bois also publishes the "PCB information and follow-up Bulletin" and "Shipbreaking.com" informative bulletin on the demolition of ships available on www.robindesbois.org

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Robin des Bois
Association for the Protection of Man and the Environment
14 rue de l'Atlas 75019 Paris - France
Tel: 00 33 (0)1.48.04.09.36 / Fax: 00 33 (0)1.48.04.56.41
www.robindesbois.org