From:	Macdonald, Robie <macdonaldrob@dfo.mpo.com>
Sent:	Thursday, April 2, 2009 9:44 AM
To:	Hellou, Jocelyne <HellouJ@mar.dfo-mpo.gc.ca>; Brown, Robin <Robin.Brown@dfo-mpo.gc.ca>
Cc:	Kennedy, Eddy <KennedyE@mar.dfo-mpo.gc.ca>; Ross, Peter (Pacific) <Peter.S.Ross@dfo-mpo.gc.ca>
Subject:	RE: Environment Canada ban on DecaPBDE - NOAA Concerns

Hi there; actually, I've not changed my mind on the contaminant brief, but I've been a bit overwhelmed by other things as has Peter Ross. We also pondered for quite a while whether or not this would be a good time to raise the issue. That is, with the current climate (economic and scientific) is it better to write a letter about contaminant research in DFO, or let the sleeping dog rest for a couple of months until the new budget infuses the system, and we have time to climb out of the various holes the Government is now trying to fill. I don't know the answer, but I'm still a strong supporter of a healthy contaminants program within DFO both in terms of analytical skill and ability to focus on leading issues of importance to fish.

Rob

-----Original Message-----
From: Hellou, Jocelyne
Sent: April 2, 2009 5:32 AM
To: Brown, Robin
Cc: Kennedy, Eddy; Macdonald, Robie
Subject: RE: Environment Canada ban on DecaPBDE - NOAA Concerns

Thanks for the messages Robin, they are appreciated.
However, it is not only when an issue is highlighted in the papers that is a worthwhile one to pursue research on. That is the message we have to make sure to relay to our managers.

Governemnt research should also be preventive, discover potential problems before they arise. This is what the handful of "toxic chemicals" researcher should be funded to do.
I will let you decide if we should have an exchange about that. Robie was going to but seems to have changed his mind it seems.

Best wishes

Dr. Jocelyne Hellou
Head: Organic Group
Ecosystem Research Division
Bedford Institute of Oceanography
Fisheries and Oceans Canada
Dartmouth, NS B2Y 4A2
Tel: 902-426-7451 Fax: 902-426-6697
email: Hellouj@mar.dfo-mpo.gc.ca
http://www.mar.dfo-mpo.gc.ca/science/ocean/org/ocg1.html

Adjunct: Chemistry and Oceanography Departments, Dalhousie University

---

From: Brown, Robin

Sent: April 1, 2009 9:39 PM

To: Brown, Robin; Richards, Laura; Paradis, Sylvain

Cc: van den Berg, Tara; Ross, Peter (Pacific); Fairchild, Wayne; Couillard, Catherine; Ikonomou, Michael; Johannessen, Sophia; Lebeuf, Michel; Macdonald, Robie; Tomy, Gregg; Houston, Kim; Sayavong, Boumy; Courtenay, Simon; Payne, Jerry F; Burridge, Les E; Hellou, Jocelyne; Bain, Hugh; Brown, Laura (Pacific); Cobb, Don; Cosens, Susan; Davis, Ben; Gilbert, Michel; Gosselin, Serge; Houston, Kim; Lee, Kenneth; Olivier, Gilles; Perry, Ted; Simon, Patrice (Ottawa); Vezina, Alain

Subject: RE: Environment Canada ban on DecaPBDE - NOAA Concerns

In case you were worried that the DFO advice to EC on this issue was "overblown' by those crazy, left-wing, tree-hugging, green-leaning contaminant scientists:

NOAA Report Calls Flame Retardants Concern to U.S. Coastal Ecosystems

Health Care Concerns Also Noted

April 1, 2009

NOAA scientists, in a first-of-its-kind report issued today, state that Polybrominated Diphenyl Ethers (PBDEs), chemicals commonly used in commercial goods as flame retardants since the 1970s, are found in all United States coastal waters and the Great Lakes, with elevated levels near urban and industrial centers.

The new findings are in contrast to analysis of samples as far back as 1996 that identified PBDEs in only a limited number of sites around the nation.

Based on data from NOAA¹s Mussel Watch Program, which has been monitoring coastal water contaminants for 24 years, the nationwide survey found that New York¹s Hudson Raritan Estuary had the highest overall concentrations of PBDEs, both in sediments and shellfish. Individual sites with the highest PBDE measurements were found in shellfish taken from Anaheim Bay, Calif., and four sites in the Hudson Raritan Estuary.

Watersheds that include the Southern California Bight, Puget Sound, the central and eastern Gulf of Mexico off the Tampa-St. Petersburg, Fla. coast, and Lake Michigan waters near Chicago and Gary, Ind. also were found to have high PBDE concentrations.

³This is a wake-up call for Americans concerned about the health of our coastal waters and their personal health,² said John H. Dunnigan, NOAA assistant administrator of the National Ocean Service. ³Scientific evidence strongly documents that these contaminants impact the food web and action is needed to reduce the threats posed to aquatic resources and human health.²

PBDEs are man-made toxic chemicals used as flame retardants in a wide array of consumer products, including building materials, electronics, furnishings, motor vehicles, plastics, polyurethane foams and textiles since the 1970s. A growing body of research points to evidence that exposure to PBDEs may produce detrimental health effects in animals, including humans. Toxicological studies indicate that liver, thyroid and neurobehavioral development may be impaired by exposure to PBDEs. They are known to pass from mother to infant in breast milk.

Similar in chemical structure to polychlorinated biphenyls, or PCBs, they have raised concerns among scientists and regulators that their impacts on human health will prove comparable. PBDE production has been banned in a number of European and Asian countries. In the U.S., production of most PBDE mixtures has been voluntarily discontinued.

The NOAA Mussel Watch survey found that the highest concentrations of PBDEs in the U.S. coastal zone were measured at industrial and urban locations. Still, the

chemicals have been detected in remote places far from major sources, providing evidence of atmospheric transport. Significant sources of PBDEs introduction into the environment include runoff and municipal waste incineration and sewage outflows. Other pathways include leaching from aging consumer products, land application of sewage sludge as bio-solids, industrial discharges and accidental spills.

NOAA and the Southern California Coastal Water Research Project have recently held meetings with representatives from the Environmental Protection Agency, U.S. Geological Survey, the National Institute of Standards and Technology, and the California State Water Resources Control Board to discuss water quality monitoring of emerging contaminants. NOAA¹s research and monitoring information found in this report will be used by relevant resource managers to better understand, assess and address the threats from PBDEs.

NOAA understands and predicts changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and conserves and manages our coastal and marine resources.

http://www.noaanews.noaa.gov/stories2009/20090401_ecosystems.html

Regards

Robin

Robin Brown
Manager, Ocean Sciences Division | Gestionnaire, Division des sciences oceaniques
Institute of Ocean Sciences | Institut des sciences de la mer
P.O. Box 6000, Sidney, B.C. V8L 4B2 | C. P. 6000, Sidney, (C.-B.) V8L 4B2
*** Note new email address ==>> Robin.Brown@dfo-mpo.gc.ca <<==
Telephone | Téléphone (250) 363-6378
facsimile / télécopieur (250) 363-6690
Government of Canada | Gouvernement du Canada

http://www-sci.pac.dfo-mpo.gc.ca/osap/

From: Brown, Robin

Sent: March 30, 2009 1:57 PM

To: Richards, Laura; Paradis, Sylvain

Cc: van den Berg, Tara; Ross, Peter (Pacific); Fairchild, Wayne; Couillard, Catherine; Ikonomou, Michael; Johannessen, Sophia; Lebeuf, Michel; Macdonald, Robie; Tomy, Gregg; Houston, Kim; Sayavong, Boumy; Courtenay, Simon; Payne, Jerry F; Burridge, Les E; Hellou, Jocelyne; Bain, Hugh; Brown, Laura (Pacific); Brown, Robin; Cobb, Don; Cosens, Susan; Davis, Ben; Gilbert, Michel; Gosselin, Serge; Houston, Kim; Lee, Kenneth; Olivier, Gilles; Perry, Ted; Simon, Patrice (Ottawa); Vezina, Alain

Subject: Environment Canada ban on DecaPBDE

In a reversal of previous decisions, Environment Canada has decided to BAN the last of the three groups of PBDE flame retardants.

Rapid accumulation of these toxic materials in the ecosystem was at least one major reason to reverse previous decisions and proceed with a ban. You may recall that this issue was the subject of a national CSAS review, which was requested to ensure that the advice that DFO provided to EC on this subject was thorough, defensible and authoritative.

Wayne Fairchild (Gulf) chaired the review. Peter Ross (Pacific) was the lead author and "instigator". Co-authors on

this document include:

C.M. Couillard (Quebec), M. Ikonomou (Pacific), S. Johannessen (Pacific) , M. Lebeuf (Quebec) , R. Macdonald (Pacific), and G. Tomy (Central and Arctic).

The review is published as a CSAS Proceedings at:
http://www.dfo-mpo.gc.ca/CSAS/Csas/Publications/Pro-CR/2008/2008_012_e.htm

Additional DFO contributors to the review included:

Simon Courtenay (Gulf)
Les Burridge (Maritimes)
Jocelyne Hellou (Maritimes)
Kim Houston (NCR)
Vince Palace (C&A)
Jerry Payne (NL)
Boumy Sayavong (NCR)

The Working paper is published as a ResDoc at:
http://www.dfo-mpo.gc.ca/csas/Csas/Publications/ResDocs-DocRech/2008/2008_036_e.htm

The Abstract is a nice summary of the advice provided by this team:

> Of the three forms (penta, octa and deca) of polybrominated diphenylethers (PBDEs) that have been widely used in textiles, furniture upholstery, plastics, and electronics, only deca-BDE remains on the market in Canada. DFO and other researchers have documented the rapid emergence of PBDEs, including deca-BDE, as a priority concern in the marine and freshwater environments in Canada. In many matrices, BDE-209, the main ingredient in deca-BDE, has surpassed PCBs and DDT as the number one contaminant. PBDEs are being introduced to the marine environment by sewage discharge and atmospheric deposition. Recent DFO research shows that BDE-209 dominates the PBDEs profile in abiotic components of the marine environment, contributing up to 80% of the total PBDE concentration in air, water, and sediments. BDE-209 is taken up by low trophic level (e.g. shellfish and invertebrates) and terrestrial animal species, and therefore presents a risk to these species or those relying on these species for food. Although some studies have not reported results for BDE-209 because of technical difficulties in its measurement, BDE-209 has been found to biomagnify in aquatic food webs. The ready breakdown of BDE-209 into more bioaccumulative and toxic (lighter) PBDE forms in the environment presents perhaps the most insidious threat to aquatic biota. There are concerns within the scientific community about escalating risk of adverse health effects in marine biota, including invertebrates, fish and marine mammals, as well as human consumer groups including coastal First Nations communities. The endocrine-disrupting potential of PBDEs has been established in laboratory animals, fish and in seals.

The authors went on to publish this work in a peer- reviewed journal:

> Ross,P.S., Couillard,C.M., Ikonomou,M., Johannessen,S.C., Lebeuf,M., Macdonald,R.W., and Tomy,G.T. 2008. Large and growing environmental reservoirs of deca-BDE present an emerging health risk for fish and marine mammals. Mar.Pollut.Bull. **58**: 7-10.

Congratulations to the authors and reviewers for seeing this important work through to the "advice" stage and contributing to a significant change in GoC regulations aimed at reducing the risk to aquatic ecosystems!

The Globe and Mail article on this:

http://www.theglobeandmail.com/servlet/story/LAC.20090328.PBDE28ART2115/TPStory/?query=flame+retardant

Regards

Robin

Robin Brown
Manager, Ocean Sciences Division | Gestionnaire, Division des sciences oceaniques
Institute of Ocean Sciences | Institut des sciences de la mer
P.O. Box 6000, Sidney, B.C. V8L 4B2 | C. P. 6000, Sidney, (C.-B.) V8L 4B2
*** Note new email address ==>> Robin.Brown@dfo-mpo.gc.ca <<==
Telephone | Téléphone (250) 363-6378
facsimile / télécopieur (250) 363-6690
Government of Canada | Gouvernement du Canada

http://www-sci.pac.dfo-mpo.gc.ca/osap/