Deborah Jeffrey

From: Burnett Electorate Office
Sent: Friday, 9 November 2012 4:48 PM
To: Finance and Administration Committee
Subject: FW: amendments to Water Fluoridation Act
Attachments: fluoridation comms Frog Safe, Inc..doc

-----Original Message-----
From: FDR Project, Inc. [redacted]
Sent: Friday, 9 November 2012 4:22 PM
To: Burnett Electorate Office
Subject: amendments to Water Fluoridation Act

Dear Mr. Bennett,

Attached please find our organisation's submission containing comments on the proposed amendments to the Water Fluoridation Act currently being considered. While the true effects of fluoride on humans are still hotly debated, our experiences as frog conservationists strongly suggest that fluoridated water is causing environmental problems. Details are in the attached submission.

We welcome any questions or comments you have on our submission and we can provide the document as a signed copy if you need one.

Thank you for your time and consideration.

On behalf of our members and of local biodiversity,

Deborah Pergolotti
Founding President, Frog Safe, Inc.
[redacted]

Feedback on draft legislation which includes amendments to the Water Fluoridation Act 2008

submitted by Frog Safe, Inc. Edmonton (Cairns)

[NB A signed hard copy of this document can be provided but it will not arrive in time for the November 9th deadline assigned to this draft legislation.]

Sections:

- Medications need to be administered by doctors, not councils
- Wildlife, especially marine life, is being poisoned by fluoridated water
- Fluoridation can effect vegetation and can interfere with free trade
- Conclusion

There are several proposed changes to this Act, some of which are meant to provide more avenues for exemption and others which seem to clearly attempt to "close doors" on some councils who have already been exempted. **We believe that any supplier of water who is not already adding fluoride to their water supply (for any reason) needs to be permanently exempted.** The legislation itself is a threat to human health and a threat to the biodiversity of small animals, marine life, and amphibians (a taxon already in sharp decline in Queensland).

To support our association's view, I would like to submit the following observations and scientific evidence.

A) Medications need to be administered by doctors, not councils

IF there is a socio-economic group that needs to access fluoride in addition to what they are already receiving through their toothpaste, then this needs to be administered by a GP like any other medication – not blindly administered to all persons regardless of existing medications, and existing conditions which are aggravated by fluoride (including osteoporosis, diabetes, thyroid conditions, arthritis and renal disease). The Fluoridation Act circumvents normal medicinal regulatory instruments and protocols by treating all persons regardless of their individual situations. Further, the Act provides no monitoring mechanism to assess exactly how much fluoride an individual is being dosed with. Mostly all the population on fluoridated water is being deliberately overdosed as they are already receiving more than enough fluoride through their toothpaste, mouthwash and other sources.

In the case of our own Founder's long experience with fluoride having grown up in the USA, her teeth have been damaged by fluoridated water and there was no benefit seen at all in reducing caries/cavities in her teeth. The entire back half of her mouth is entirely fillings which were installed when she was just a teenager while concurrently being overdosed on fluoride. (As an aside, her fillings are mercury fillings – another contentious toxin which dental industry lobbyists maintain is completely benign when inside one's mouth but subject to the strictest handling

controls when outside your mouth!) Our Founder has no confidence in the benefits of systemic fluoride or the motivations of dental industry lobbyists!

Please see the following excepts from the Canadian government's report:

Water Quality: Ambient Water Quality Criteria for Fluoride
Ministry of Environment
Province of British Columbia
P.D. Warrington, Ph.D.
Resource Quality Section
Water Management Branch
Victoria BC
July 1995

3.0 Fluoride metabolism

Chronic fluoride intake increases the need for calcium, magnesium, manganese and vitamin C (Rose and Marier, 1977).

High Risk Groups
Some portions of the population are more at risk from high fluoride levels than others; they include: workers in welding, aluminum smelter and phosphate fertilizer industries; people living near such industries where water and air are subject to pollution: people living in areas where goiter is endemic; people with kidney disfunction, polydipsia or diabetes insipidus; those whose diets are deficient in iodine, calcium, manganese or vitamin-C; and those with low calcium to phosphorus ratios in their diet (Rose and Marier, 1977). Hemodialysis treatments require very low fluoride water since increased plasma fluoride levels may occur in patients when water containing as little as 1.0 mg/L is used. Such increases in plasma fluoride may be as much as 2 to 4 times normal at a 1.0 mg/L fluoride concentration. Such patients tend to already have higher than normal plasma fluoride levels due to their kidney insufficiency, and can ill-afford further increases (Posen *et al.*, 1971; Cordy *et al.*, 1974; Seidenberg *et al.*, 1976; and Hahijarvi, 1971).

The following excerpt is from the report:

Environmental Health Criteria 36
Fluorine and Fluorides
ISBN 92 4 154096 6
INTERNATIONAL PROGRAMME ON CHEMICAL SAFETY

Published under the joint sponsorship of the United Nations Environment Programme, the International Labour Organisation, and the World Health Organization
Geneva, 1984

The International Programme on Chemical Safety (IPCS) is a joint venture of the United Nations Environment Programme, the International Labour Organisation, and the World Health Organization. The main objective of the IPCS is to carry out and disseminate evaluations of the

effects of chemicals on human health and the quality of the environment. Supporting activities include the development of epidemiological, experimental laboratory, and risk-assessment methods that could produce internationally comparable results, and the development of manpower in the field of toxicology. Other activities carried out by the IPCS include the development of know-how for coping with chemical accidents, coordination of laboratory testing and epidemiological studies, and promotion of research on the mechanisms of the biological action of chemicals.

1.1.6. Toxic effects on human beings

The most important toxic effect of fluoride on human beings is skeletal fluorosis, which is endemic in areas with soils and water containing high fluoride concentrations. The sources of fluoride that contribute to the total human intake vary geographically between endemic fluorosis areas, but the symptoms are generally similar. They range from skeletal histological changes, through increases in bone density, bone morphometric changes, and exostoses to crippling skeletal fluorosis. **This condition is usually restricted to tropical and subtropical areas, and is frequently complicated by factors such as calcium deficiency or malnutrition.** [emphasis ours]

In non-endemic areas, skeletal fluorosis has occurred as a result of industrial exposure. This condition, whether of endemic or industrial origin, is normally reversible by reducing fluoride intake.
In endemic fluorosis areas, developing teeth exhibit changes ranging from superficial enamel mottling to severe hypoplasia of the enamel and dentine.

Patients with kidney dysfunction may be particularly susceptible to fluoride toxicity. [emphasis ours]

B) Wildlife, esp. marine life, is being poisoned by fluoridated water

Dosing the population through the water supply is not only the most expensive way to achieve a goal, it is also leading to contamination of non-human uses of the water supply. This is especially so when it comes to fish and amphibians.

There are many species of fish that can be kept in a body of water but the species that are suitable to control mozzies AND allow amphibian breeding activities are the smaller species. Prior to fluoridation, small fish like guppies, white clouds and Pacific Blue-eyes were used successfully to control mozzies in ponds while not posing any threats to frog eggs and tadpoles. The use of these species allowed pond owners to comply with the QLD Health Act but also provide a place for local frogs to breed. Backyard frog ponds are critical to frogs living in the periurban habitat and even moreso during the periods of drought that occur in Queensland during solar maximum.

Fluoridated water has changed all that. The fluoride is causing several dramatic changes in these fish, affecting their behavior, ability to reproduce and even ability to stay alive. There are

studies overseas which reflect some of the same consequences we have observed here such as:

a) anorexia - the fish stop eating and slowly starve to death
b) reproductive failure - they stop breeding
c) failure to thrive - probably connected to the anorexia (about 97% of all the fish we have acquired in the past two years have died quickly even though we keep them in rain water (they would have been retailed in fluoridated water and their health impacts did not reverse when switched to rainwater)
d) changes in the brain - these fish which were once safe for frog ponds are now voracious predators of frog eggs and tadpoles which means no frog can successfully breed in ponds stocked with fish.

This situation forces a pond owner to make a nasty choice. They can comply with the requirement to use fish in their ponds (to prevent mozzie breeding) and watch the local frog population go extinct once the existing adults die off OR they can provide those important pond locations for frogs to breed by ignoring the requirement to use fish.

We wish to provide you with the following scientific evidence which backs up our local observations. Please note that the first reference in this section is from a local, respected source you would be familiar with and that is JCU Townsville.

Published in: Journal of Zoo and Wildlife Medicine 43(3):549-565. 2012
doi: http://dx.doi.org/10.1638/2011-0276R1.1

FLUOROSIS AS A PROBABLE FACTOR IN METABOLIC BONE DISEASE IN CAPTIVE NEW ZEALAND NATIVE FROGS (LEIOPELMA SPECIES)

Stephanie D. Shaw, D.V.M., M.A.N.Z.C.V.S. (Medicine of Zoo Animals), Phillip J. Bishop, M.Sc., Ph.D., Catherine Harvey, B.V.Sc., Dipl. A.C.V.P., Lee Berger, B.V.Sc., Ph.D., Lee F. Skerratt, Ph.D., M.A.N.Z.C.V.S. (Epidemiology), Karen Callon, Maureen Watson, John Potter, B.V.Sc., M.A.N.Z.C.V.S. (Medicine of Zoo Animals), Richard Jakob-Hoff, B.V.Sc., M.A.N.Z.C.V.S. (Medicine of Australian Wildlife), Mike Goold, B.V.Sc., Nicole Kunzmann, B.Sc. (Hons.), Peter West, and Rick Speare, B.V.Sc. (Hons.), M.B., B.S. (Hons.), Ph.D., M.A.N.Z.C.V.S. (Medicine of Australian Wildlife)

From the Amphibian Disease Ecology Group, Anton Breinl Centre, School of Public Health, Tropical Medicine and Rehabilitation Sciences, James Cook University, Angus Smith Drive, Townsville, Queensland 4811, Australia and the New Zealand Centre for Conservation Medicine, 117 Motions Road, Auckland Zoo, Auckland 1002, New Zealand (Shaw); Department of Zoology, University of Otago, P.O. Box 56, Dunedin 9054, New Zealand (Bishop); Gribbles Veterinary Laboratories, P.O. Box 12049, Penrose 1642, Auckland, New Zealand (Harvey); Amphibian Disease Ecology Group, Anton Breinl Centre, School of Public Health, Tropical Medicine and Rehabilitation Sciences, James Cook University, Angus Smith Drive, Townsville, Queensland 4811, Australia (Berger, Skerratt, and Speare); New Zealand Centre for Conservation Medicine, 117 Motions Road, Auckland Zoo, Auckland 1002, New Zealand (Potter, Jakob-Hoff, Kunzmann, and West); Bone Research Group, School of Medicine, University of Auckland, Park Road, Grafton 1023, New Zealand (Callon and Watson); and Hamilton Zoo, 183 Brymer Road, Hamilton 3243, New Zealand (Goold).
Correspondence should be directed to Dr. Shaw (stephanie.shaw@jcu.edu.au).

Abstract:

This report describes the investigations into the cause and treatment of metabolic bone disease (MBD) in captive native New Zealand frogs (Leiopelma spp.) and the role of fluoride in the disease. MBD was diagnosed in Leiopelma archeyi and Leiopelma hochstetteri in 2008 at three institutions: Auckland Zoo, Hamilton Zoo, and the University of Otago. Most of these frogs had originally been held at the University of Canterbury for several years (2000–2004) but some were collected directly from the wild. Radiographs on archived and live frogs showed that MBD had been present at Canterbury, but at a lower rate (3%) than in the current institutions (38–67%). Microcomputed tomography showed that the femoral diaphyses of the captive frogs at Auckland Zoo had greater bone volume, bone surface, cross-sectional thickness, and mean total cross-sectional bone perimeter, which is consistent with osteofluorosis. On histology of the same femurs, there was hyperplasia, periosteal growth, and thickening of trabeculae, which are also consistent with skeletal fluorosis. An increase in fluoride levels in the water supply preceded the rise in the incidence of the above pathology, further supporting the diagnosis of osteofluorosis. Analysis of long-standing husbandry practices showed that ultraviolet B (UVB) exposure and the dietary calcium:phosphorus ratio were deficient when compared with wild conditions—likely causing chronic underlying MBD. To prevent multifactorial MBD in captive Leiopelma, the authors recommend increasing dietary calcium by incorporating into the captive diet inherently calcium-rich invertebrates; increasing exposure to natural or artificial (UVB) light; and using defluoridated water. Addressing these three factors at Auckland Zoo reduced morbidity, bone fractures, and mortality rates.

Received: December 19, 2011

Effects of fluoride on Xenopus embryo development.
[NB (Xenopus is a frog species)]
Published in: Food Chem Toxicol. **2003 Nov;41(11):1501-8.**
Goh EH, Neff AW.

Source
Associate Professor of Pharmacology and Toxicology, Indiana University School of Medicine, Medical Sciences Program, Jordan Hall 009A, Bloomington, IN 47405, USA. goh@indiana.edu

Abstract
Fluoride was first associated with fetal malformation shortly after water fluoridation was initiated in the 1940s. Since many chemicals can interact directly with the embryo to cause malformation, the effects of fluoride on embryonic and fetal development were investigated. The effects of sodium fluoride on the development of frog embryos were studied under conditions described by the Frog Embryo Teratogenesis Assay-Xenopus (FETAX), a screening assay for teratogens. The most prominent malformations caused by sodium fluoride are reduction in the head-tail lengths and dysfunction of the neuromuscular system of the tadpoles. The values for LC50, EC50, and minimal concentration to inhibit growth (MCIG) of sodium fluoride met the limits established for a teratogen in frog embryos, showing that sodium fluoride is a direct acting teratogen on developing embryos. Since FETAX has a high degree of success in identifying

mammalian teratogens, the observed teratogenic action of sodium fluoride on frog embryos would indicate a strong possibility that sodium fluoride may also act directly on developing mammalian fetuses to cause malformation.

PMID: 12963002 [PubMed - indexed for MEDLINE]

Haematological characteristics and bone fluoride content in Bufo melanostictus from an aluminium industrial site.
Published in: Environ Pollut. 1998;99(3):421-3.
[NB Bufo melanostictus is the Asian Spiny Toad, a species which regularly turns up at Australian ports in cargo shipments from Indonesia and West Papua.]
Mishra PC, Mohapatra AK.

Source
Department of Environmental Sciences, Sambalpur University, Jyoti-Vihar-769019, Orissa, India.

Abstract
Fluoride concentration in bones and differential haemotological characteristics (RBC, haemoglobin, haematocrit, mean corpusclar haemoglobin and mean corpuscular volume) were measured in amphibians, Bufo melanostictus, collected from fluoride-contaminated and -uncontaminated areas. The average haemoglobin content, total RBC count and haematocrit (%) in blood samples were found to be significantly reduced, while mean corpuscular concentration and volume were significantly elevated in individuals from the contaminated area in comparison to those from the uncontaminated area. Fluoride concentration was approximately 11 times greater in the bones of toads from the contaminated area.
PMID: 15093307 [PubMed]

A second excerpt from the Canadian government's report is presented here:

Water Quality: Ambient Water Quality Criteria for Fluoride

6.0 Livestock

The effects of fluoride in drinking water on animals are analogous to the effects on man (McKee and Wolf, 1963). Fluoride accumulates in bone rather than soft tissues, leading to tooth damage and bone lesions (Rose and Marier, 1977), but is transferred only slightly to eggs (Messer *et al.*, 1972). Fluoride is transmitted to the fetus through the placenta (Anon, 1974).

7.0 Wildlife

The effects of fluoride on wildlife are the same as those for people (McKee and Wolf, 1963), and livestock. The problem is more severe for predators with their greater need for unimpaired mobility and good dentition. Predators may also bioaccumulate fluoride (Rose and Marier, 1977).

Animals grazing on forage contaminated with high fluoride levels, or drinking highly fluoridated water, could suffer skeletal deformation, mottled teeth and adverse health effects which may impair their ability to compete or survive adverse conditions.

[NB Please note that watering grass feedlots with fluoridated water transfers the fluoride into the livestock feeding on that vegetation as well as dosing those animals again with the fluoridated drinking water itself.]

		Species: *Rana* (frogs)	
mg/L	**Salt**	**Organisms**	**Effects**
1.0	NaF	*Rana pipiens*	slows embryo growth rate
		Reference:	Cameron, 1940
1-10	NaF	*Rana temporaria*	delayed metamorphosis and histological changes in the thyroid gland
		Reference:	Kuusisto & Telkka, 1961

Another table below from the Canadian report showing the death rates of fish when exposed to the levels of fluoride listed in the left column of the table. These fish would be the same size as the local species which are used in frog ponds to control mozzies and not disturb frog eggs and tadpoles:

pH 7.0-7.3, fry 2.5-4.0 cm, 900-1200 mg., DO 5.6-6.5, 37°C *estimated values by interpolation from the graph, reference (Pillai & Mane, 1985)

[F] in mg/L	**hours of exposure**			
	24	48	72	96
<0.6	0	0	0	0
1.2	0	0	0	10
2.5	0	0	20	40*

There are many other published papers which examine the effects of fluoride on wildlife which are listed here for any subsequent research your staff might undertake:

Camargo, J. A. 2003. Fluoride toxicity to aquatic organisms: A review. Chemosphere. 50: 251–264. CrossRef, CSA

Camargo, J. A., and J. V. Tarazona. 1991. Short-term toxicity of fluoride ion (F−) in soft water to rainbow trout and brown trout. Chemosphere. 22: 605–611. CrossRef, CSA

Caverzasio, J., G. Palmer, and J. P. Bonjour. 1998. Fluoride: Mode of action. Bone. 22: 585–589. CrossRef, CSA

Clarke, E., I. Beveridge, R. Slocombe, and G. Coulson. 2006. Fluorosis as a probable cause of chronic lameness in free ranging Eastern grey kangaroos (Macropus giganteus). J. Zoo Wildl. Med. 37: 477–486. BioOne, PubMed

Khandare, A. L., R. Harikumar, and B. Sivakumar. 2005. Severe bone deformities in young children from vitamin D deficiency and fluorosis in Bihar-India. Calcif. Tissue Int. 76: 412–418. CrossRef

Lloyd, C., and M. F. Stidworthy. 2011. Osteofluorosis in captive gerenuk (Litocranius walleri) and bongo (Tragelaphus eurycerus isaaci) antelope. J. Zoo Wildl. Med. 42: 113–117. BioOne

Shi, X., P. Zhuang, L. Zhang, G. Feng, L. Chen, J. Liu, L. Qu, and R. Wang. 2009. The bioaccumulation of fluoride ion (F−) in Siberian sturgeon (Acipenser baerii) under laboratory conditions. Chemosphere. 75: 376–380. CrossRef

Sigler, W. F., and J. M. Neuhold. 1972. Fluoride intoxication in fish: a review. J. Wildl. Dis. 8: 252–254.

Tamer, M. N., B. K. Koroglu, C. Arslan, M. Akdogan, M. Koroglu, H. Cam, and M. Yildiz. 2007. Osteosclerosis due to endemic fluorosis. Sci. Total Environ. 373: 43–48. CrossRef

Teotia, M., S. P. S. Teotia, and K. P. Singh. 1998. Endemic chronic fluoride toxicity and dietary calcium defiency interaction syndromes of metabolic bone disease and deformities in India: Year 2000. Indian J. Pediatr. 65: 371–381. CrossRef, CSA

C) - Fluoridation can effect vegetation and can interfere with free trade

The same Canadian report referenced above included some study results where fluoride was tested for its effects on vegetation. Such work has not taken place in Australia and should be funded so that local crops can be tested.

Table 8.1 Effect of Fluoride in Irrigation Water on Vegetation

mg/L	Species	Effects	Ref.
0.02	barley	root damage in nutrient culture	Bale & Hart, 1973
0.5	*Cordyline terminalis*	leaf damage in nutrient culture	Conover & Poole, 1971

More damage to vegetation was presented but we have only included the lower concentrations that are similar to what is being used by water suppliers now.

Consider also that certain council areas being pressured to fluoridate also serve certified organic growers who cannot use contaminated water on their crops. If such growers were forced to use fluoridated water on their crops, this would constitute a breach of free trade principles. Further citing the effects on livestock referenced above, councils serving a large number of livestock industries should also be exempted from fluoridation. Based on our local knowledge, both of these points pertain to the Tablelands Regional Council and that council (at least) should be fully exempted from any fluoridation.

Conclusion:

Considering the consequences of fluoridation as described above, the only logical, common-sense and economic decision that can possibly be reached is that the Fluoridation Act 2008 needs to be repealed entirely and urgently. It effects and interferes with the Queensland Health Act, the Nature Conservation Act, Free trade instruments, and circumvents the office of the APVMA.

There are far cheaper and simpler ways for any needy socio-economic groups to receive fluoride and in a more effective way – via free toothpaste!

Please contact us if you require any further information.

On behalf of our members and local biodiversity,

Sincerely,

Deborah Pergolotti
Founding President,
Frog Safe, Inc.
[formerly Frog Decline Reversal Project, Inc.]
P.O. Box 949,
Edmonton, QLD 4869
[redacted]