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September 12, 2011

Mr. John Laird, Secretary for Natural Resources
Chair, California Ocean Protection Council
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

RE: Public Comments on Ocean Protection Council's Draft Strategic Action Plan 2012-2017

Dear Chairman Laird and Members and Staff of the Ocean Protection Council,

Please accept these comments from Turtle Island Restoration Network (TIRN) into the public record for consideration in revising and finalizing the Ocean Protection Council (OPC) Strategic Action Plan (SAP) 2012-2017. TIRN supports the SAP's focus on four substantive areas that will comprise the core of the OPC's efforts over the next five years, including: 1) climate change, 2) fisheries and marine ecosystems, 3) coastal and ocean impacts from land, and 4) industrial uses of the ocean.

The draft OPC SAP provides a good overview and strong foundation for developing a comprehensive blueprint for the direction of the OPC over the next five years. TIRN urges that more details, timelines and completion dates be incorporated into the final SAP to allow the OPC to clearly prioritize its objectives and goals and achieve measurable results for stakeholders and the people of California.

TIRN appreciates OPC's leadership on a wide range of ocean issues over the past five years. In particular, TIRN is still grateful for the OPC's resolution in 2008 to support protection of endangered Pacific leatherback sea turtles and oppose a new federal longline fishery for swordfish along the California coast. TIRN hopes that the OPC will be prepared to defend this position if an expanded swordfish fishery or other commercial activity that threatens endangered species and marine habitat is proposed again.

TIRN is offering comments in these key areas of the OPC SAP:

1. Sustainable fisheries, and the need to prioritize mercury in the seafood toxicity program and California Sustainable Seafood Initiative
2. Marine Debris and need to prioritize reduction of marine plastic pollution
3. Industrial Uses: Maritime Commerce and the America's Cup

TIRN would also like to go on record in support of the public comments submitted by a coalition of ocean groups led by California Coastkeeper Alliance, Natural Resources Defense Council, The Ocean Conservancy, Monterey Bay Aquarium and The Nature Conservancy.

TIRN is an international non-profit environmental organization based in Marin County, California, with offices in Houston, Texas, and San Jose, Costa Rica. TIRN is the parent organization of Sea Turtle Restoration Project (STRP), Salmon Protection and Watershed Network (SPAWN) and GotMercury.org. STRP was founded in 1989 and is the largest project of TIRN, a 501c3 organization, which was incorporated in 1997. The three projects focus on sea turtle, ocean and biodiversity conservation; protection of endangered Coho salmon in the Lagunitas watershed of Marin County, California; and reducing human consumption of toxic mercury in seafood. Learn more at www.tirn.net, www.seaturtles.org, www.spawnusa.org and www.gotmercury.org.

Sustainable Fisheries

Turtle Island Restoration Network (TIRN) is a member of the California Sustainable Seafood Initiative (CSSI) Advisory Panel and has continually advised on the development of the CSSI protocols. TIRN will continue to engage in the CSSI either as a panel member and/or stakeholder participant as it is adopted in December 2011 and implemented beginning in 2012.

With that context in mind, TIRN is disappointed that the SAP fails to detail a seafood toxicity testing or mercury-in-fish advisory plan and or to contain a single reference to mercury in the section on Sustainable Fisheries and the CSSI. Mercury is a top concern among people who eat fish. It is also disconcerting that the SAP does not refer to seafood toxicity at all in relation to the CSSI, despite considerable public comment on the matter from a wide range of environmental and public health groups at OPC meetings. Instead the seafood toxicity language is separated from the CSSI.

This approach is hard to understand given the state of California's long-term efforts to warn its residents about the potential harm to health from eating too much high-mercury fish. TIRN will summarize some of this history below, and also recap recent mercury testing results that were presented to the OPC earlier this year.

While TIRN appreciates that the SAP mentions that seafood toxicity should be considered in its sustainable fisheries programs, Action 3.1.2 is far too general to be adopted as written, which states only that the OPC work with other agencies to "*to develop a program that meets the needs of the California sustainable seafood program as well as informs the public about seafood toxicity issues.*"

This action does not have an estimated completion date nor does it detail how or if seafood testing for mercury or other toxins will be performed. It also does not ever mention ***commercial*** seafood, which is where shortfalls in mercury and toxicity testing are present and the best opportunities for improved public warnings occur.

TIRN urges that the seafood toxicity program in the SAP be incorporated as an integral part of the Sustainable Fisheries section and CSSI, and be given specific details, timelines and include these elements:

- Prioritize random sampling of mercury testing in commercial California landed fish, and share all testing results with the public.

- Require mercury-in-fish warnings at all retail points of sales and as part of the state seafood certification and seafood toxicity program.
- Set timelines and milestones with an implementation date for a multi-agency testing and/or reporting and warning program for commercial seafood toxicity, specifically mercury contamination.
- Require that all fish species that are caught and landed in California and under consideration for certification by the state as sustainable must be prioritized for mercury and toxicity testing and warnings.
- Ensure that no fish species that is known to contain high levels of mercury beyond U.S. Environmental Protection Agency and U.S. Food and Drug Administration action limits should be certified as sustainable.

TIRN advises the OPC to refer to already existing scientific literature and data to readily identify high mercury seafood. For example, swordfish, shark and certain species of tuna have already been documented to contain hazardous levels of mercury.[1] There is no need to require testing of every piece of California landed seafood or initiate new testing standards for mercury levels as criteria in the protocols. The evidence of high mercury levels in specific types of commercial seafood is already available.

As a first step, in advance of any testing program, the OPC simply needs to implement a policy to either not certify known high mercury seafood such as swordfish, shark and certain tuna species or to take the lead from the Monterey Bay Aquarium Seafood Watch and other sustainable fish programs and provide a clear, public warning to consumers about high mercury seafood, and the resulting human health issues from its consumption, especially by children and pregnant women.

Testing of California Landed Fish for Testing

Earlier this year, TIRN's GotMercury.org project conducted a study of mercury levels in eight popular types of fish species caught and landed by California fisheries. Forty samples of eight fish species were collected in April and May 2011 and analyzed for mercury content at an accredited laboratory. This snapshot of mercury levels of California landed seafood was consistent with the findings outlined in other GotMercury.org investigations.

As expected, the swordfish samples were quite high in mercury while other fish species such as sardines and squid had much lower levels of mercury. One interesting finding was the mercury content of the Dungeness crab, which is classified as a lower mercury option by federal food safety officials with an average mercury content of 0.060 parts per million (ppm). The average mercury content of the Dungeness crab in this study was 0.192 ppm, considerably higher than the government mercury average.

KEY FINDINGS

- <u>100% of swordfish samples were over 1.00 ppm, exceeding the FDA "action"limit and posing potential health risks to people who eat this species of fish.</u>

[1] Groth, E (2010), Ranking the contributions of commercial fish and shellfish varieties to mercury exposure in the United States: Implications for Risk Communication. Environmental Research 110:226-236.

- The swordfish samples contained an average mercury level of 1.45 ppm, well above the U.S. Food and Drug Administration's (FDA) mercury action level of 1.00 ppm. To put that in perspective, if a 140-pound woman ate a six-ounce portion of swordfish at the mercury level of 1.45 ppm, her mercury level soars to 450 percent over federal mercury guidelines.

- The albacore samples contained an average mercury level of 0.318 ppm. If a 60-pound child consumed six ounces of tuna with the mercury level of 0.318 ppm, that child would be 276 percent over federal mercury guidelines.

- The crab samples registered mercury levels nearly forty percent over the FDA reported mercury level of 0.060 ppm.

- Three of the fish species: halibut, sablefish, squid had mercury levels lower than the FDA's data.

The complete results are available on request.

New Developments related to Mercury in Fish

TIRN would also like to bring to your attention several new developments related to mercury-in-fish that may help direct policy making and revisions of the SAP including:

1. Got Mercury.org filed a legal petition with the U.S. Food and Drug Administration (FDA) seeking reform of federal mercury standards and fish testing to better protect the health of mothers, children and others who eat fish.
2. News coverage of GotMercury's undercover investigation of mercury in fish sold in sushi restaurants and supermarkets in the Los Angeles area earned a regional Emmy Award for the NBC affiliate there last week.
3. The new Gelfond Fund for Mercury Research and Education recently opened at Stonybrook University in Long Island, New York, which is funding projects across the U.S., including a mercury-in-fish installation at the Aquarium of the Pacific in Long Beach. TIRN would be happy to make an introduction to OPC staff for a discussion about possible partnerships between the state of California and the Gelfond Fund on a commercial fish testing and education program.

Details on these developments and other mercury news can be found at gotmercury.org.

Final SAP must detail MERCURY in FISH public health policies

TIRN is concerned that the lack of emphasis on mercury and other contaminants found in commercial fish in the Sustainable Fisheries Section and CSSI certification standards creates a serious deficiency OPC's SAP. If adopted without revisions that recognize and take action on mercury, the OPC could indirectly put California at risk for health problems associated with mercury exposure from eating fish.

One key omission is the U.S. Food and Drug Administration (FDA) mercury-in-fish advisory is completely missing from the SAP and the draft CSSI protocols, while the purported health benefits of fish consumption are highlighted or implied.

The OPC fails to note that in 2004 the FDA and the U.S. Environmental Protection Agency (EPA) issued an updated joint advisory to women and children about methylmercury in seafood. The federal advisory warns women and children to limit their consumption of tuna and to eliminate four other species of fish in their diets. The joint advisory states:

1. Do not eat Shark, Swordfish, King Mackerel, or Tilefish because they contain high levels of mercury.
2. Eat up to 12 ounces (2 average meals) a week of a variety of fish and shellfish that are lower in mercury.
    - Five of the most commonly eaten fish that are low in mercury are shrimp, canned light tuna, salmon, pollock, and catfish.
    - Another commonly eaten fish, albacore ("white") tuna has more mercury than canned light tuna. So, when choosing your two meals of fish and shellfish, you may eat up to 6 ounces (one average meal) of albacore tuna per week.
3. Check local advisories about the safety of fish caught by family and friends in your local lakes, rivers, and coastal areas. If no advice is available, eat up to 6 ounces (one average meal) per week of fish you catch from local waters, but don't consume any other fish during that week.

Considering that the number source of mercury exposure is through the consumption of fish, it is imperative that the OPC at least highlight the federal seafood advisory in the seafood certification protocol and Sustainable Fisheries section of the SAP.

This would be consistent with the fact that the State of California has prioritized the need to warn residents about mercury in seafood through the initiation of several lawsuits with retailers requiring them to post mercury advisory signs at point of sale locations.

Proposition 65, known as California's Safe Drinking Water and Toxic Enforcement Act, requires retailers that sell products known to cause cancer or birth defects to notify the public about toxins present with visibly placed warning signs. In 2003, California Attorney General Bill Lockyer pursued several Prop. 65 lawsuits aimed at expanding health advisories to include a mercury-in- seafood specific warning sign that seafood sellers would be required to post.

After years of litigation, a final settlement was reached in August 2010. The end result is that 40 California seafood retailers now must post mercury-in-fish warning signs. The OPC should continue to build upon the State of California's commitment to public health and reducing mercury exposure by including toxicity levels as part of the seafood certification program.

The Problem of Mercury in Fish

Mercury contamination of seafood is a widespread public health problem, especially for women of childbearing age, pregnant and nursing women and children. However, there are no federal requirements to post the sign anywhere to communicate this information to vulnerable populations, leaving them in the dark about hidden mercury exposure.

Mercury in the environment has increased primarily from anthropogenic sources such as coal-fired power plants and industrial processes. While mercury does enter the environment from natural sources such as volcanoes, mineral deposits and evaporation from soil and the oceans, the largest source of mercury is from coal-fired power plants. In 2009, scientists from Harvard University and the

U.S. Geological Survey published findings that the ocean's mercury levels have risen about 30 percent over the last 20 years. To reach the ocean, mercury falls from the atmosphere or runs-off the ground into water sources that flow to the sea.

Bacteria and fungi found in most water bodies convert raw mercury in to methylmercury, a potent neurotoxin. Methylmercury accumulates in the water and is readily absorbed by plants and fish. Mercury concentrations build up through the food chain as predatory fish like swordfish, tuna and shark consume many smaller fish. Eventually the predatory fish species build up extremely high levels of mercury.

By the time swordfish, tuna and shark are eaten by humans, the mercury levels can be dangerously high. According to the EPA, the primary source of mercury exposure in humans is consumption of fish. Scientific studies have shown that methylmercury causes neurodevelopment effects in humans, memory loss, mental retardation, learning disabilities, vision loss, heart disease and in extreme cases can even lead to death. Children exposed to mercury are particularly vulnerable to mercury toxicity since their brains are still developing. A 2009 study conducted by the School of Medicine at the University of California, Los Angeles found that the mercury levels in women's blood increased from 2 percent in 1999-2000 to 30 percent in 2005 to 2006. [2] Additional studies have linked cardiovascular disease in adults and the consumption of fish high in mercury.

Other mercury-in-fish studies published recently found that:

- People who ate enough contaminated fish to raise mercury levels in their bodies to levels still considered "safe" had subtle changes to their heart rhythm that may affect their long-term health.[3]

- Babies exposed to mercury in the womb through a mother's consumption of contaminated seafood scored lower on skilled tests. [4]

- Long-term exposure to mercury may be linked to dementia and Alzheimer's disease. [5]

It is well established that mercury is toxic and should be avoided.

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[2] [1] Dan R. Laks, Assessment of chronic mercury exposure within the U.S. population, National Health and Nutrition Examination Survey, 1999-2006, BioMetals, ahead of print, 2009. doi: 10.1007/s10534-009-9261-0

[3] Kozue Yaginuma-Sakuraia, Katsuyuki Muratac, Miyuki Shimadaa, Kunihiko Nakaia, Naoyuki Kurokawaa, Satomi Kameoa and Hiroshi Satoh, Intervention study on cardiac autonomic nervous effects of methylmercury from seafood , Neurotoxicology and Teratology Volume 32, Issue 2, March-April 2010, Pages 240-245

[4] Lynch, ML, L-S Huang, C Cox, JJ Strain, GJ Myers, MP Bonham, CF Shamlaye, A Stokes-Riner, JMW Wallance, EM Duffy, TW Clarkson and PW Davidson. 2010. Varying coefficient function models to explore interactions between maternal nutritional status and prenatal methylmercury toxicity in the Seychelles Child Development Nutrition Study

[5] Joachim Mutter; Annika Curth; Johannes Naumann; Richard Deth; Harald Walach, Does Inorganic Mercury Play a Role in Alzheimer's Disease? A Systematic Review and an Integrated Molecular Mechanism. Journal of Alzheimer's disease, 2010 Aug

Marine Debris TIRN supports the prioritization of reducing marine debris in the Draft SAP. However, the Draft SAP falls short in accurately describing the problem and addressing the impacts to endangered leatherback sea turtles, other marine species and their habitats.

The Draft SAP states that marine debris "impacts our beaches, degrades habitat, and entangles and poisons wildlife" when in fact it has been directly implicated as the cause of death for endangered leatherback and other protected species sea turtles, seabirds, and marine mammals. TIRN urges the Draft SAP include direct reference to the lethal effects known to result from marine debris on ocean wildlife. The SAP should be modified to read that marine debris "impacts our beaches, degrades habitat, and entangles and kills wildlife".

TIRN supports a more detailed discussion to include the extremely harmful qualities of marine plastic pollution as both a component of stormwater reaching the ocean and as a priority pollutant present in our coastal ecosystem. Not all marine debris is created equal. The natural degradation of plastic in the ocean from temperature and sunlight is often reduced to the point that plastic does not degrade at all in the marine environment. Additionally, marine plastic pollution is known to absorb toxic compounds to their surfaces, making ingestion of plastic pollution a vector for increasing exposure of sensitive wildlife to chlorinated compounds such as PCBs and DDTs that would not otherwise be bioavailable. The high frequency of plastic pollution in marine debris, its persistence, and its poisonous qualities warrant prioritization of actions to reduce this class of marine debris in the final SAP.

Waters offshore of California will be designated critical habitat for the leatherback sea turtle under the Endangered Species Act on November 15, 2011. The critically endangered Western Pacific leatherback sea turtles rely on the California Current large marine ecosystem as an essential feeding ground between nesting cycles on their natal beaches across the Pacific in and around Indonesia . These largest of all sea turtles can mistake plastic bags and other debris for their preferred prey, are believed to commonly ingest plastic pollution, and it is estimated that 35% leatherbacks have ingested plastic inside them at any time. TIRN urges the OPC to reference the leatherback critical habitat in the final Strategic Action Plan and target its actions specifically to ensure marine debris reductions are measured in these areas.

TIRN also supports OPC's reconvening of the the Marine Debris Steering Committee and to expand the membership beyond agency staff to include a broad spectrum of stakeholders including representatives from NGOs including TIRN.

In addition, TIRN would like to point out that marine debris is not a stand-alone issue and should be referenced in both Issue 5 Leveraging Investments and Realizing Benefits of the State Marine Protected Areas and Issue 6 Integrating Water Policy. Plastic pollution degrades the State's Marine Protected Areas and these areas should be focal areas to study and reduce marine debris.

INDUSTRIAL USES FOCAL AREA

TIRN appreciates that the OPC has included industrial uses in the draft SAP and that it recognizes the value of working waterfront infrastructure. TIRN agrees that working harbors, ports, and waterfronts are essential to marine and coastal industries, contribute greatly to coastal economies, and are part of California's maritime heritage. TIRN would also like the OPC to consider that increased maritime traffic and events such as the upcoming America's Cup on San Francisco Bay have the potential to have on California's coastal and ocean resources. TIRN urges the OPC to oversee, engage and provide policy

leadership in the realm of maritime commerce in the state of California. Given that Council Member Geraldine Knatz represents the Port of Los Angeles, the OPC already has an expert on board.

With this in mind, TIRN urges the OPC to address within the SAP the potential disturbance and other harm to endangered and threatened marine life from vessel traffic and how interactions between vessels and marine life may threaten the environment and compromise safety of vessels and protected species.

Whales need to be given special attention and consideration given the recent increase of ship-whale strikes along the U. S. West Coast. Last year between July and September four endangered whales – blue, humpback, minke, and fin – were killed by ship strikes and found stranded in Bay Area waters, as well as a second blue whale found at the Channel Islands off Santa Barbara.

In addition, TIRN requests that the OPC also consider and address as appropriate the threats from marine vessels to protected sea turtles that utilize West Coast waters, the Pacific leatherback and loggerheads. Leatherbacks have been recorded congregating in West Coast shipping lanes where they are vulnerable to ship strikes, noise disturbance from ship propellers and engines, oil and fuel spills, wastewater and garbage dumping and other environmental impacts that need to be analyzed.

Much of this area in the shipping lanes outside the Golden Gate Bridge where the critically endangered Pacific leatherback sea turtle has been documented is proposed critical habitat that is expected to be finalized by the National Marine Fisheries Service (NMFS) in November.

The OPC can work with the ports as well as state and federal agencies to adopt standards and regulations that would help minimize harm to whales, sea turtles and other marine life from increasing maritime commerce, such as supporting these specific measures:

1. Slow large shipping speeds to 10 knots in national marine sanctuaries and state marine protected areas as well as in migratory pathways and foraging areas for sea turtles and whales as well as in national marine sanctuaries and state marine protected areas.
2. Establish Areas To Be Avoided in sea turtle and whale critical habitat.
3. Establish protocols for vessels to watch for and report sightings of leatherbacks and loggerheads as well as whales.
4. Consider ways that vessel noise can be reduced in the shipping lanes and critical habitat.
5. Consider other impacts from vessels in sea turtle habitat including discharges, lighting and emissions.

In addition, vessel operations in critical habitat, marine protected areas, and national marine sanctuaries could affect prey species condition, distribution, diversity, and abundance as well as population growth, reproduction, and development due to ship pollution of the sea, surface air and atmosphere as a result of dumping, oil and fuel spills and smokestack emissions.

The America's Cup in San Francisco Bay

Many of us in the ocean conservation community are welcoming the America's Cup sailing regatta to San Francisco Bay in 2012 and 2013 as an opportunity to engage the international sailing community in conserving the marine environment while holding a world class sporting event. But while the multi-million dollar marine drag race may be a great way to showcase San Francisco Bay's natural

amphitheatre, the spectacle will also trigger environmental threats -- not so much from the racing boats, but from support vessels, spectator boats, new development on piers at the Port of San Francisco including a new cruise ship terminal and several marinas, and transporting crowds to and from waterfront parks, greenbelts and other race viewing areas.

TIRN urges the Ocean Protection Council to engage in the environmental review process that is now underway to ensure that the America's Cup is an event that enhances rather than degrades the marine habitat and our oceans. The OPC should also consider itself a partner and stakeholder in the events and leverage the international spotlight to generate support for and awareness of California's leadership on protecting the ocean.

TIRN would be happy to provide the OPC with copies of our detailed comments on the environmental documents for the America's Cup now underway under the California Environmental Quality Act and National Environmental Policy Act, which will not include here. However, we do urge the OPC to comment on the scoping process now open under the National Environmental Policy Act by the National Park Service. The deadline is September 16, 2011.

Thank you so much for your consideration. We look forward to your response

Sincerely yours,

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