



## **United States Department of State**

*Bureau of Oceans and International  
Environmental and Scientific Affairs*

### **Submission from the United States Government with respect to Article 3 – Mercury supply sources and trade**

#### **Summary of Interim Secretariat's Request**

On December 8, 2014, the United Nations Environment Program (UNEP), in its capacity as Interim Secretariat of the Minamata Convention on Mercury, and based on a request from the intergovernmental negotiating committee (INC6), invited governments and other relevant actors to provide information related to Article 3 relevant to the development of draft guidance on the identification of individual stocks of mercury or mercury compounds exceeding 50 metric tons, as well as sources of mercury supply generating stocks exceeding 10 metric tons per year. Based on the submissions, the secretariat will prepare draft guidance for consideration by the committee at its seventh session. The Secretariat further invited submissions regarding whether there are any additional elements within the guidance referred to in paragraph 12 of Article 3 not covered by either the guidance on the forms or that for stocks, and on whether additional guidance is needed and the nature of that guidance. The Secretariat will make such submissions available on the Minamata Convention website.

#### **Overview**

The United States appreciated the work of the Interim Secretariat, prior to INC6, to develop factors which could be used to develop guidance for parties on identifying mercury stocks and supplies pursuant to Article 3, paragraph 5(a). While the Interim Secretariat's paper on this topic, provided to INC6 as INC.6/9, provided a strong basis for discussion, the factors set forth in INC.6/9 are more complex than necessary to assist parties in identifying their large stocks and sources of supply of mercury and mercury compounds.

We believe that INC.6/9 suggests some procedures which should not be included in the guidance, as they would add an unnecessary burden of work on parties. In particular:

- The recommendation that countries estimate the demand of mercury and identify whether the country has a positive or negative net balance of mercury needlessly complicates and potentially delays parties' identification of relevant stocks and supplies.
- Estimating the demand of mercury and mercury compounds, and determining the net balance of mercury, are beyond the scope of paragraph 5(a) and will not help countries identify stocks and sources of mercury and mercury compounds.
- A methodology that encourages countries to calculate demand in order to arrive at

knowledge of its large stocks and supply sources is both inappropriately indirect and overly burdensome.

- We further believe that imports of mercury do not constitute a source of mercury supply in the context of paragraph 5(a). Therefore, a country would not include those quantities of mercury or mercury compounds that they import as an identified supply source. Such mercury would be identified by the country that produces the mercury or mercury compound supply in the first instance.

Therefore, the United States believes that the factors to be used in developing guidance can and should be simplified, as follows:

**Factors which may be considered in the identification of stocks of mercury or mercury compounds (based on INC.6/9):**

A number of countries may have stocks of mercury currently existing within their territory. Stocks of mercury or mercury compounds may also accumulate within a country when sources of mercury exceed mercury use.

Mercury or mercury compound stocks may be maintained by companies involved in mercury trade, waste management companies, or government agencies.

In addition, mercury supplies can result from a number of industrial operations.

To identify stocks of mercury or mercury compounds exceeding 50 metric tons, as well as sources of mercury supply that generate more than 10 metric tons per year, a country should consider the following potential source categories:

- (a) Primary mining;
- (b) Decommissioned industrial facilities that have previously used mercury; and existing industrial facilities that use large quantities of mercury;
- (c) Collection of by-product mercury (such as from non-ferrous metal mining or processing or natural gas production);
- (d) Recycling or reclamation of mercury from mercury-containing waste.

The following questions may assist in identifying whether the country has stocks of mercury or mercury compounds exceeding 50 metric tons and/or sources of mercury supply that generate more than 10 metric tons per year:

1. Is primary mining occurring within the territory?
2. Are there identified sites where mercury is stored prior to use within the

territory?

3. Are recycling or recovery activities undertaken within the territory which may produce mercury? If so, what quantity of mercury is produced by those activities?
4. Is there any proposed decommissioning of chlor-alkali plants, vinyl chloride monomer plants, or other facilities with manufacturing processes in which mercury or mercury compounds are used?
5. Are there facilities that may result in the production of by-product mercury within the territory? If so, what quantity of mercury is generated by those facilities?

The United States further believes that the draft guidance should remain brief and simple. In fact, the guidance should not contain much more than the factors, in our view.

Finally, we believe the following considerations should be reflected in the guidance:

- The guidance should adhere to requirements of paragraph 5(a) and its thresholds.
- The guidance should maintain a distinction between stocks and sources of mercury supply, particularly since their identification thresholds are different.
- A single facility could both have a large stock as measured in static tons, and be a source of mercury supply as measured in tons per year.
- The guidance should include both active and decommissioned facilities that use mercury in its listing of facility sources.
- For the purposes of paragraph 5(a), stocks and supplies should not include mercury or mercury compounds managed as waste and intended for disposal, but should include mercury or mercury compounds intended for recycling.
- Geologic reserves of mercury should not be considered stocks for the purposes of paragraph 5(a).
- References to tools developed by UNEP and the UNEP Global Mercury Partnership, such as the global chlor-alkali inventory (which includes approximate amounts of mercury on site at mercury-cell facilities) should be included.
- The guidance should emphasize flexibility in how individual countries identify their stocks and supplies, as data availability and analyses vary between and within countries and industry sectors.

We look forward to reviewing draft guidance in advance of INC7, and appreciate the Interim Secretariat's work on this topic.

With respect to whether there are any additional elements within the guidance referred to in paragraph 12 of Article 3 not covered by either the guidance on the forms or that for stocks, and on whether additional guidance is needed and the nature of that guidance, the United States is strongly of the view that additional guidance is not needed.



## United States Department of State

*Bureau of Oceans and International  
Environmental and Scientific Affairs*

### **Submission from the United States of America**

#### **With Respect to Article 10 – Environmentally Sound Interim Storage of Mercury**

##### **Summary of Interim Secretariat's Request**

At its 6<sup>th</sup> session of the intergovernmental negotiating committee (INC) to prepare a global legally binding instrument on mercury, the INC requested the interim secretariat to compile and summarize information from governments on sound interim storage practices for mercury, other than waste mercury, that they have been adopted and successfully implemented within their national borders. In addition to the information collected from governments, the interim secretariat will work with the Basel Secretariat and relevant experts to identify further information that might be relevant to interim storage of mercury, other than waste mercury, and prepare for INC 7 a draft outline of the storage guidelines referred to in Article 10 of the Minamata Convention.

##### **Overview**

The United States is pleased to provide the interim secretariat with information on sound storage practices that are in use or have been in use within the United States from a variety of sources, including the U.S. Government, universities, non-governmental organizations, and industry. We hope they will be combined with and augmented by the submissions from other countries and stakeholders. For decades, mercury was used in the United States in laboratories, manufacturing, and health care locations. As a result, there are a number of different organizations within the United States that have developed practices and standards for safely storing mercury before use. We have provided references to these sources in the topical section headings below. This experience forms the basis for the U.S. recommendations to the Secretariat for consideration of inclusion in guidelines on interim storage of mercury, other than waste mercury.

The United States has also selected provisions in the draft Basel guidelines for ESM of mercury waste that we suggest are relevant and appropriate for inclusion in interim storage guidelines. These provisions could be considered as the Secretariat works with the Basel Secretariat to identify relevant information for storage of mercury that is not waste mercury. Those items are included in this submission and identified with the wording: "From "Draft Basel Guidelines."<sup>1</sup> In addition, the United States is including storage practices from other

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<sup>1</sup> Basel Convention Draft Updated Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of, Containing, or Contaminated with Mercury or Mercury Compounds (Draft of 20 November 2014 - Rev.5), at

documents (i.e., USEPA regulations and Global Environment Facility guidance) that, despite being intended for mercury waste, are common sense practices that the Secretariat might consider for the interim storage guidelines for mercury that is not waste mercury.

The United States offers the following considerations with respect to interim secretariat's mandate for this work. Our view is that the guidelines to be developed would be most useful at the global level if they present a range of options from which Parties and stakeholders can then select the method most appropriate for the particular situation within their jurisdictions. We hope that the outline produced by the Secretariat for INC 7 will contain, at a minimum, the following structure for consideration by the INC.

- **Location of mercury storage within facilities**
- **Containers**
- **Secondary containment**
- **Labelling**
- **Flooring**
- **Training**
- **Inventory**
- **Inspections**
- **Spill Response**
- **Physical Security**

#### **Location of mercury storage**

- Store mercury away from other chemicals and from work activity. If a separate room is not available, try to store mercury in a cabinet with a lock. (University of Wisconsin guidance, at <https://www4.uwm.edu/usa/safety/chem/mercuryexposure.cfm>)
- Keep containers tightly closed and sealed. Store drums, flasks and bottles in a cool, dry location, away from direct sunlight, source of intense heat, or where freezing is possible. Store away from incompatible materials. Material should be stored in secondary container or in a diked area, as appropriate. (Intertek Chemicals and Pharmaceuticals, "Mercury Safety Data Sheet," 11-19-13, at <http://www.bethlehemapparatus.com/pdf/MSDS.pdf>)

The entrance) and exit doors of the storage space should be marked with warning signs, such as "Danger: Hazardous Mercury" and the skull-and-crossbones symbol for poison. (Global Environment Facility, United Nations Development Program, Guidance on the Cleanup, Temporary Storage, and Transport of Mercury Waste from Health Care

Facilities, at [https://noharm-global.org/sites/default/files/documents-files/1030/GEF\\_Guidance\\_Cleanup\\_Storage\\_Transport\\_Mercury.pdf](https://noharm-global.org/sites/default/files/documents-files/1030/GEF_Guidance_Cleanup_Storage_Transport_Mercury.pdf)

- Access to mercury should be restricted to those with adequate training. (From Draft Basel Guidelines)
- Storage area should be made of fire-resistant materials. (Intertek Chemicals and Pharmaceuticals, “Mercury Safety Data Sheet,” 11-19-13, at <http://www.bethlehemapparatus.com/pdf/MSDS.pdf>)
- Mercury storage area should have fire suppression and fire alarm systems. (National Research Council Recommendations Concerning Chemical Hygiene in Laboratories (Non-Mandatory), at [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=standards&p\\_id=10107](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10107))
- The space should have ventilation that can eject air from the space directly to the outside. (Global Environment Facility, United Nations Development Program. Guidance on the Cleanup, Temporary Storage, and Transport of Mercury Waste from Health Care Facilities, at [https://noharm-global.org/sites/default/files/documents-files/1030/GEF\\_Guidance\\_Cleanup\\_Storage\\_Transport\\_Mercury.pdf](https://noharm-global.org/sites/default/files/documents-files/1030/GEF_Guidance_Cleanup_Storage_Transport_Mercury.pdf))
- Storage areas should not share building ventilation systems with work or public areas. (From Draft Basel Guidelines)
- Store containerized mercury in a cool, dry location, away from direct sunlight, source of intense heat, or where freezing is possible. (Intertek Chemicals and Pharmaceuticals. “Mercury Safety Data Sheet,” November 19, 2013, at <http://www.bethlehemapparatus.com/pdf/MSDS.pdf>.)
- Humidity should be below 40% relative humidity to minimize corrosion if steel containers and shelves are used. (Global Environment Facility, United Nations Development Program. Guidance on the Cleanup, Temporary Storage, and Transport of Mercury Waste from Health Care Facilities, at [https://noharm-global.org/sites/default/files/documents-files/1030/GEF\\_Guidance\\_Cleanup\\_Storage\\_Transport\\_Mercury.pdf](https://noharm-global.org/sites/default/files/documents-files/1030/GEF_Guidance_Cleanup_Storage_Transport_Mercury.pdf))
- Avoid storing more mercury than is needed. (Texas A & M University, Engineering Program. “A Guideline for the Safe Use & Handling of Mercury and Mercury Compounds,” undated, at [http://oes.tamu.edu/guidelines/mercury/EPO\\_Mercury\\_Safe\\_a.pdf](http://oes.tamu.edu/guidelines/mercury/EPO_Mercury_Safe_a.pdf))

- Avoid storing with incompatible materials, e.g. acetylene, ammonia, strong oxidizers, copper. (Intertek Chemicals and Pharmaceuticals. “Mercury Safety Data Sheet,” 11-19-13 at <http://www.bethlehemapparatus.com/pdf/MSDS.pdf>).

### **Containers used to store mercury**

- Containers specifically designed for storage of elemental mercury are commercially available and should be considered as a first option for storage.
- Containers should be easy to open and re-seal, leak-proof, and air-tight; and small enough such that the weight of mercury does not exceed the strength of the container. (Global Environment Facility, United Nations Development Program. Guidance on the Cleanup, Temporary Storage, and Transport of Mercury Waste from Health Care Facilities, at [https://noharm-global.org/sites/default/files/documents-files/1030/GEF\\_Guidance\\_Cleanup\\_Storage\\_Transport\\_Mercury.pdf](https://noharm-global.org/sites/default/files/documents-files/1030/GEF_Guidance_Cleanup_Storage_Transport_Mercury.pdf))
- Stainless steel is appropriate material for storing mercury because the steel does not react with mercury at ambient temperatures. (From Draft Basel Guidelines)
- Keep all mercury containers tightly closed when not in use. (Texas A & M University, Engineering Program. “A Guideline for the Safe Use & Handling of Mercury and Mercury Compounds,” undated, at [http://oes.tamu.edu/guidelines/mercury/EPO\\_Mercury\\_Safe\\_a.pdf](http://oes.tamu.edu/guidelines/mercury/EPO_Mercury_Safe_a.pdf))
- If a container holding mercury is not in good condition (e.g., rusting, cracked, dented container) or if it begins to leak, immediately transfer the mercury from such container to a container that is in good condition. (USEPA. Training Module, September 2005, at <http://www.epa.gov/osw/inforesources/pubs/training/cont05.pdf>)
- Avoid storing mercury in unwashed containers that previously held other chemicals. (USEPA. Training Module, September 2005, at <http://www.epa.gov/osw/inforesources/pubs/training/cont05.pdf>)

### **Secondary containment**

- Containers should be placed in containment trays or a curved, leak-proof area. (From Draft Basel Guidelines)
- The volume of the containment pan or tray should exceed the total volume of liquid mercury stored in the container. (Global Environment Facility, United Nations Development Program. Guidance on the Cleanup, Temporary Storage, and Transport of Mercury Waste from Health Care Facilities, at [https://noharm-global.org/sites/default/files/documents-files/1030/GEF\\_Guidance\\_Cleanup\\_Storage\\_Transport\\_Mercury.pdf](https://noharm-global.org/sites/default/files/documents-files/1030/GEF_Guidance_Cleanup_Storage_Transport_Mercury.pdf))



### **Labeling of mercury-containing containers**

- Avoid storing mercury in unwashed containers that previously held other chemicals. (<http://www.epa.gov/osw/inforesources/pubs/training/cont05.pdf>)
- Label all mercury containers and storage as follows:

WARNING: CONTAINS MERCURY VAPOR  
HARMFUL AT ROOM TEMPERATURE  
MAY BE FATAL IF HEATED IN THE OPEN  
DO NOT BREATHE VAPOR  
USE WITH ADEQUATE VENTILATION  
AVOID SKIN CONTACT

([http://oes.tamu.edu/guidelines/mercury/EPO\\_Mercury\\_Safe\\_a.pdf](http://oes.tamu.edu/guidelines/mercury/EPO_Mercury_Safe_a.pdf))

### **Flooring for storage locations**

- Surfaces in the room where mercury is stored should have a leak-proof coating which is free of cracks, gaps, or other deterioration. (From Draft Basel Guidelines)
- Mercury containers should be on an impermeable concrete pad (with runoff controls), or covered with a waterproof tarp. (From Draft Basel Guidelines)
- The floor should be non-porous and seamless. Examples include epoxy-coated cement, polyurethane coated floors, seamless rubber floors, and polyester flooring. (Global Environment Facility, United Nations Development Program. Guidance on the Cleanup, Temporary Storage, and Transport of Mercury Waste from Health Care Facilities, at [https://noharm-global.org/sites/default/files/documents-files/1030/GEF\\_Guidance\\_Cleanup\\_Storage\\_Transport\\_Mercury.pdf](https://noharm-global.org/sites/default/files/documents-files/1030/GEF_Guidance_Cleanup_Storage_Transport_Mercury.pdf))
- The floor should be sloped so that liquids resulting from releases can drain and be removed. Alternatively, containers can be elevated (e.g. on pallets) or otherwise protected from contacting accumulated liquids. (<http://www.epa.gov/osw/inforesources/pubs/training/cont05.pdf>)

### **Training of employees and mercury-handlers**

- Employees involved with storing mercury should have training, including hazard communication. (United States Department of Labor, Office of Safety and Health Administration, at [www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9768](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9768))

### **Inventory/management**

- Storage amounts should be counted on a routine basis to prevent unexplained loss. (From Draft Basel Guidelines)

### **Inspections**

- Routine inspections should be made of mercury storage containers for visible mercury leaks. (The Chlorine Institute, Inc. “Guidelines for Mercury Cell Chlor-Alkali Plants Emission Control: Practices and Techniques,” April 2001, at <http://www.epa.gov/region5/mercury/pdfs/hgcontrolguidancedocument-final.pdf>)
- Inspections should focus particularly on damage, leaks, spills and deterioration. (From Draft Basel Guidelines)

### **Spill response**

- A workable emergency plan, preferably with multiple procedures, should be in place and used in case of mercury spills. (Environmental Management Bureau, Republic of the Philippines 1997, SBC 2006, and U.S. Department of Energy 2009, all as referenced in Draft Basel Guidelines).
- Personal protective equipment, a spill kit, and wash areas should be located near (but not in) the storage space for easy access by workers. (Global Environment Facility, United Nations Development Program, Guidance on the Cleanup, Temporary Storage, and Transport of Mercury Waste from Health Care Facilities, at [https://noharm-global.org/sites/default/files/documents-files/1030/GEF\\_Guidance\\_Cleanup\\_Storage\\_Transport\\_Mercury.pdf](https://noharm-global.org/sites/default/files/documents-files/1030/GEF_Guidance_Cleanup_Storage_Transport_Mercury.pdf)).
- USEPA Information on proper spill response and cleanup is at <http://www.epa.gov/mercury/spills/>

### **Videos on multiple topics concerning mercury storage**

#### **1. “*Cleaning up a Small Mercury Spill*”**

- Place mercury in isolated area of facility
  - Use puncture-resistant containers
  - Place vapor suppression agent in container with mercury
  - Can use a secondary container.
- (University of California at Berkeley, Environmental Health and Safety, at <https://www.youtube.com/watch?v=JL6HHPCWAEU>)

## **2. “*Mercury Waste in Hospital*”**

Health Care Without Harm, at <https://noharm-global.org/issues/global/mercury-tools-and-resources>

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## **United States Department of State**

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### **Submission from the United States of America With Respect to Article 11: Mercury Wastes**

#### **Summary of the Interim Secretariat's Request**

On December 1, 2014, the United Nations Environment Programme (UNEP), in its capacity as Interim Secretariat of the Minamata Convention on Mercury and based on a request from the intergovernmental negotiating committee (INC 6), requested governments provide information related to Article 11 of the Convention that addresses mercury wastes. Mercury wastes are defined as substances or objects consisting of, containing, or contaminated with mercury or mercury compounds. Governments were specifically requested to provide information on their use of mercury waste thresholds and the levels established. The Secretariat will compile such information for consideration at INC 7.

#### **a) Summary of the United States Resource Conservation and Recovery Act**

Under U.S. waste management law (the Resource Conservation and Recovery Act, or RCRA), waste generators are required to determine whether their waste is classified as hazardous. If waste is hazardous, a number of detailed storage, handling, transport, treatment and disposal requirements are triggered. These include tracking with a manifest, time limits for on-site storage, use of appropriate storage containers, and transport by a hazardous waste hauler, only to a facility permitted for storage, treatment and disposal. Treatment for organic waste is often incineration, while treatment for inorganics is typically solidification/stabilization. Hazardous waste landfills must have liners, leachate collection systems, and groundwater monitoring at the site boundary. Sanitary landfills for municipal waste have these same general requirements.

Non-hazardous waste is regulated by the 50 individual states, with a national minimum level of regulation. All landfills for waste disposal must be permitted.

Many forms of recycling are not considered treatment or waste disposal. A secondary material that is legitimately re-used may not be classified as a waste at all.

#### **b) Procedure for setting waste thresholds**

For wastes containing or contaminated with mercury or mercury compounds, the threshold to classify a waste as a hazardous waste is based on an assessment of risks to human health and the environment via the ground water pathway. That is, the regulatory value is based on an estimate of the amount of mercury in a waste needed to contaminate a drinking water well that is near a waste landfill. Mercury can leach from waste in a landfill, enter the

groundwater, and be transported to a nearby drinking water well. A leaching test estimates how much mercury may leach from a waste, and a groundwater transport model is used to estimate the amount of dilution and other attenuation in mercury concentration that would occur in groundwater transport from the landfill to the well. In this case, the dilution estimate was 100x, and the well water concentration not to be exceeded is 0.002 mg/L. Therefore, waste that leaches more than 0.2 mg/L mercury from the landfill is likely to contaminate the well above the safe threshold, and so is regulated as hazardous waste to prevent this contamination from occurring. A laboratory leach test is used to estimate the concentration of mercury that will leach out of any particular waste (in the United States, this is the “Toxicity Characteristic Leaching Procedure” or TCLP test).

**c) Current Threshold**

Wastes leaching more than 0.2 mg/L mercury using the TCLP test are classified as hazardous.



## **United States Department of State**

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### **Submission from the United States Government With Respect to Article 22: Effectiveness Evaluation**

#### **Summary of Interim Secretariat's Request**

On December 8, 2014, the United Nations Environment Program (UNEP), in its capacity as Interim Secretariat of the Minamata Convention on Mercury, and based on a request from the intergovernmental negotiating committee (INC6), requested governments to provide information related to Article 22 of the Convention on the availability of monitoring data. The secretariat will then prepare a compilation and analysis of the means of obtaining monitoring data for consideration by the committee by INC 7.

#### **Overview**

We would like to thank the Secretariat for its effort to compile information on available sources of monitoring data. The United States believes that the effectiveness evaluation must look at the effect of the Convention in reducing the presence and movement of mercury and mercury compounds in the environment and trends in mercury levels.

We recognize there is a need for early and thoughtful consideration regarding the mechanics of an evaluation, including – among other things- identifying what data are needed, how those data would be used in an evaluation, and the process for developing feasible and useful baselines.

To that end and as called for in Article 22, it is essential that COP-1 is prepared to establish “arrangements for providing itself with comparable monitoring data on the presence and movement of mercury and mercury compounds in the environment as well as trends in levels of mercury and mercury compounds observed in biotic media and vulnerable populations.”

#### **United States Mercury Monitoring Information.**

The attached document(s) provide detailed information on data available from a range of U.S. agencies. Several of these have a long history and strong expertise in developing plans and implementing networks for monitoring mercury in the environment that may be useful to determining effectiveness. These agencies include the US Environmental Protection Agency(EPA), the Food and Drug Administration, the Centers for Disease Control, the National Oceanic and Atmospheric Administration, and the Department of the Interior's Fish and Wildlife Service, National Park Service and United States Geological Survey.

Scientists, policy analysts, and natural resource managers representing academia, Federal and state agencies, tribes, industry, and non-governmental organizations developed a comprehensive and integrated mercury monitoring plan, the National Mercury Monitoring Network (MercNet) to link atmospheric mercury measurements with measurements of mercury in multiple ecosystem compartments (e.g., land, water, biota, etc.).

The United States has also developed bilateral and multilateral relationships with other countries. US EPA, National Oceanic and Atmospheric Administration (NOAA) and National Atmospheric Deposition Program (NADP) are working to strengthen coordinated atmospheric/deposition monitoring capacity in partner economies in the East/Southeast Asia region. The governments of Japan, Korea, Indonesia, Vietnam, and Thailand have contributed their expertise and resources.

### **Key Considerations**

As the Secretariat moves forward with its effort, the United States would like to highlight those data attributes we think will be most useful in carrying out a future effectiveness evaluation as well as some overarching considerations, as follows:

- Emissions inventories should be recognized as fundamental building blocks for any effectiveness evaluation of the Convention. They are required of all parties for relevant sources under Article 8 of the Convention, and parties shall endeavour to cooperate to develop and improve inventories of anthropogenic emissions under Article 19 of the Convention. Inventories can reflect immediate impacts of policy decisions and country and stakeholder actions.
- Ambient monitoring/modeling data reflecting concentrations of mercury in various environmental media and biota should be incorporated into an effectiveness evaluation. These should include air, deposition, water, fish, wildlife and humans (e.g. blood).
- The evaluation should recognize that under some circumstances models can provide estimates of concentration data within a reasonable range of uncertainty. Such estimates can be less expensive than measurement.
- The evaluation should also take account of the potential for development of newer technological approaches to mercury analysis, including emerging technologies for isotopic analysis that could help in understanding sources of mercury.
- Any meaningful effectiveness evaluation must be flexible enough to recognize that there are variations in the amounts and quality of data available to different countries.
- Evaluation of effectiveness over time will require the determinations of baselines for mercury levels and impacts which can serve as reference points. Although baselines are not explicitly called for in the Convention, it is essential that such a baseline (or baselines) be selected early on in the Convention's life so as to be able to compare them to later conditions. Only then can trends at the national, regional and global

scales evaluated for signs of progress.

### **Additional Considerations**

We believe that coordination and cooperation with stakeholders is essential to ensuring that the effectiveness evaluation is able to take advantage of high quality data. In particular we believe that:

- Where possible and cost effective the evaluation should assist individual countries in addressing challenges within their borders, including local problems. Where available this could include information such as speciation to help identify specific mercury sources. This could aid not only decisions with regard to controlling emissions but in the estimation of local impacts.
- The use of information, such as that contained in the UNEP's 2013 *Global Mercury Assessment*, could be used as a global emissions baseline for determining the Convention's impact. The question of baselines for various environmental media is a bit more complicated and will involve some deliberations and decisionmaking.
- Close coordination between the Secretariat and the Mercury Air Transport and Fate Research Partnership (F&T). The objective is to:
  - (1) review and augment the information the Secretariat collects;
  - (2) provide a preliminary analysis of the relevance of identified data to an evaluation;
  - (3) provide baseline options; and
  - (4) provide recommendations as to what procedures should be adopted, where appropriate, to ensure the harmonization of current mercury monitoring protocols and efforts such as Global Mercury Observation System (GMOS), Asia Pacific Mercury Monitoring Network (APMMN), National Atmospheric Deposition Program (NADP), National Mercury Monitoring Network (MercNet) and activities funded through the Global Environment Facility (GEF).



## **U.S. DATA –FEDERAL AGENCIES**

### **United States Geological Survey (USGS)**

U.S. Geological Survey (USGS) conducted a survey in 2009 of 291 freshwater streams in the United States found that 27 percent exceeded U.S. methylmercury water quality criterion for human health.

USGS National Water Quality Assessment Program (NAWQA) detailed mercury cycling studies in streams in Oregon, Wisconsin, Florida, the coastal plain of South Carolina, and the Adirondacks monitor food web, water quality, sediment geochemistry, and wet deposition. Currently developing models of mercury transport and cycling for South Carolina and New York studies, in collaboration with EPA. Large-scale synoptic studies use one-time sampling of mercury in the water column, sediments, and fish tissue at several hundred stream sites across the United States. Selected other USGS mercury studies have been done for Lake Champlain tributaries, California streams and rivers, high-elevation lakes in the West, and lakes in northern Minnesota (Voyageurs National Park.)

The National Contaminant Biomonitoring Program (NCBP) is a joint effort by U.S. Fish and Wildlife Service and USGS to document trends in the occurrence of persistent toxic chemicals that may threaten fish and wildlife resources. Begun in the early 1960s as part of the National Pesticide Monitoring Program, the NCBP has expanded its initial focus on persistent organochlorine insecticides to include industrial chemicals, herbicides, and potentially toxic elemental contaminants. The NCBP provides a nationwide source of material that is searched analytically for the occurrence of new or previously undetected environmental contaminants to provide information on emerging problems and for the development of new and improved analytical methods. Through its archival function, the NCBP also provides a means for retrospective analyses and documentation of historical trends for newly identified environmental contaminants. Information from this historical program has also provided an impetus for developing a revised and expanded monitoring program (Biomonitoring of Environmental Status and Trends BEST), which was transferred to USGS in 1996.

### **National Oceanic and Atmospheric Administration (NOAA)**

National Oceanic and Atmospheric Administration (NOAA) monitoring and modeling of mercury in air, water, sediments, and biota in U.S. coastal regions and the Great Lakes focuses on understanding the fate and cycling of mercury. Atmospheric measurements are gathered at several long-term sites and via aircraft. Several NOAA programs gather data on mercury in biota.

Mussel Watch provides a long-term, nationwide dataset for mercury in bivalves. Fish and dolphin monitoring data have been gathered for regional and national surveys. Additional work looks at mercury in seafood, as well as integrated ecological assessments.

### **The U.S. Food and Drug Administration (FDA)**

The U.S. Food and Drug Administration (FDA) requires that the supply of commercial fish meet a mercury action level of 1 ppm, i.e., 1 mg/kg, in the edible portion, which represents the limit at or above which the FDA will take legal action to remove products from the market. The FDA's jurisdiction in setting action levels is limited to contaminants in food shipped and marketed in interstate commerce. FDA's website summarizes the results of FDA's database and can be accessed at <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ChemicalContaminantsMetalsNaturalToxinsPesticides/ucm077969.htm#merc>

A link that provides additional information on mercury and seafood is accessible at <http://www.fda.gov/Food/FoodborneIllnessContaminants/Metals/ucm2006760.htm>

### **U.S. Department of Agriculture (USDA)**

Food Safety and Inspection Service (FSIS) has funded exploratory research on domestic and imported catfish to provide preliminary data for a baseline study of catfish and catfish products.

Over 1500 catfish fillet tissue samples have been tested for mercury with no detectable levels. These samples were collected monthly. The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) amended the Federal Meat Inspection Act (FMIA) to make catfish an amenable species under the Act. In response to the 2008 Farm Bill, FSIS drafted proposed regulations to establish a new program for federal inspection of catfish. These regulations are currently under review.

### **U.S. Department of Interior, National Park Service (NPS)**

U.S. Department of Interior, National Park Service (NPS) monitoring efforts include varied assessments of mercury in fish, and other ecosystem indicators, such as water, sediment, snow, air, vegetation, and wildlife at all levels of the food chain across the lower 48 states and Alaska.

Western Airborne Contaminants Assessment Project (WACAP) was a multiagency project conducted by NPS from 2002 to 2007 to

determine the risk from airborne toxic compounds (including mercury) to national park ecosystems and food webs [http://www.nature.nps.gov/air/Studies/air\\_toxics/wacap.cfm](http://www.nature.nps.gov/air/Studies/air_toxics/wacap.cfm). Concentration of contaminants in air, snow, water, lake sediment, lichen, conifer needles, and fish was determined from sampling two freshwater sites/lakes in each of eight western U.S. park units: Denali National Park and Preserve (Alaska), Gates of the Arctic National Park and Preserve (Alaska), Glacier National Park (Montana), Mount Rainier National Park (Washington), Noatak National Preserve (Alaska), Olympic National Park (Washington), Rocky Mountain National Park (Colorado), and Sequoia & Kings Canyon National Parks (California). Fish sampling was conducted in the eight parks from 2003 to 2005. In general, each freshwater lake was sampled during the months of July, August and September in one of the 3 sampling years. Investigators sampled 15 fish per lake for mercury, semi-volatile compounds and physiological analyses (e.g., blood, gonads, general condition of internal organs). Salmonid fishes were sampled ranging from lake trout to westslope cutthroat, brook and rainbow trout. WACAP was conducted once as a considered a screening-level assessment of contaminants of concern at western and Alaskan national parks.

Acadia National Park (Maine) is one of the most intensively studied areas for mercury in the United States. Research results consistently indicate elevated and pervasive levels of mercury across the park's landscape. The average concentration of mercury in fillets from predator fish (e.g., bass, pickerel) were measured from 11 freshwater lakes at Acadia National Park. The analysis was conducted as part of a statewide monitoring effort in 1995. While there have been numerous follow-up efforts on mercury in other park biota, there have been no follow-up efforts on mercury in fish.

Additionally, mercury concentrations have been measured at other NPS units, including those around the Great Lakes: Voyageurs National Park (Minnesota), Isle Royale National Park (Michigan), Grand Portage National Monument (Minnesota), Indiana Dunes National Lakeshore (Indiana), Pictured Rocks National Lakeshore (Michigan) and Sleeping Bear Dunes National Lakeshore (Michigan). All of these areas have undergone rigorous sampling efforts to access mercury in freshwater fish. A current 3-year sampling rotation is underway in these parks, monitoring mercury levels in both prey and predator fish such as perch and pike, respectively, from two to four freshwater sites in each of the six park units. Individual analyses of 15 to 25 fish will be collected from a given water body and year. Fish (and dragonflies from some sites) will be sampled at all six park units during the first 2 years of this study (2008-2009). With this design, all six parks will be sampled once every 3 years. The first two years of each 3-year sampling rotation will be devoted to the collection and chemical analysis of samples. The third year of each 3-year sampling rotation will be devoted to completion of chemical analysis of samples, to statistical analysis of data, and to interpretation and reporting of results. The protocol for Monitoring and Assessing Methylmercury and Bioaccumulative Organic Contaminants in Aquatic Food Webs can be found at: [http://science.nature.nps.gov/im/units/GLKN/monitor/contaminants/docs/GLKN\\_Fish\\_and\\_Dragonfly\\_Contaminants\\_Protocol.pdf](http://science.nature.nps.gov/im/units/GLKN/monitor/contaminants/docs/GLKN_Fish_and_Dragonfly_Contaminants_Protocol.pdf).

Related work and other studies indicate the presence of mercury in other ecosystem components including snow, air, vegetation,

sediment and beyond fish, biota such as plankton, tadpoles, salamanders, common loons, tree swallows, and bald eagles. An NPS mercury research review summarizes some of this work at [http://www.nature.nps.gov/air/Studies/air\\_toxics/docs/MercuryStudiesTable.pdf](http://www.nature.nps.gov/air/Studies/air_toxics/docs/MercuryStudiesTable.pdf).

### **U.S. Centers for Disease Control and Prevention (CDC)**

The National Report on Human Exposure to Environmental Chemicals (*Exposure Report*) reports biomonitoring data, providing an ongoing assessment of the exposure of the U.S. population to environmental chemicals (including mercury and mercury species). The *Exposure Report* is updated with new biomonitoring results every year and is cumulative.

In each survey period, most chemicals or their metabolites are measured in blood, serum, and urine samples from random subsamples of about 10,000 participants from the National Health and Nutrition Examination Survey (NHANES) conducted by the Centers for Disease Control and Prevention's (CDC's) National Center for Health Statistics. NHANES is a series of surveys designed to collect data related to the health and nutrition status of the U.S. population. The blood, serum, and urine exposure measurements presented in the *Exposure Report* were made by CDC's Environmental Health Laboratory (Division of Laboratory Sciences, National Center for Environmental Health) using mass spectrometry methods.

The overall purpose of the *Exposure Report* is to provide unique exposure information to scientists, physicians, and health officials to help prevent exposure to some environmental chemicals. Specific public health uses of the exposure information in the *Exposure Report* are:

- To determine which chemicals get into Americans and at what concentrations.
- For chemicals with a known toxicity level, to determine the prevalence of people with levels above those toxicity levels (e.g., a blood lead level greater than or equal to 10 micrograms per deciliter  $\geq 10 \mu\text{g/dL}$ ).
- To establish reference values that can be used by physicians and scientists to determine whether a person or group has an unusually high exposure. This information is especially helpful to identify population groups that merit further assessment of exposure sources or health effects.
- To assess the effectiveness of public health efforts to reduce exposure of Americans to specific chemicals.
- To determine whether exposure levels are higher among such potentially vulnerable groups as minorities and children.
- To track, over time, trends in levels of exposure of the population.
- To set priorities for research on human health effects.

The *Exposure Report* website <http://www.cdc.gov/exposurereport> is also the best source for the most recent update of available data.

## **US DATA – Environmental Protection Agency**

### **US EPA National Emissions Inventory (NEI):**

The National Emissions Inventory (NEI) of the U.S. Environmental Protection Agency (EPA) is the primary source for air emissions data for the United States. It is a national compilation of emissions inventory data for criteria air pollutants and hazardous air pollutants (also called air toxics) listed in the Clean Air Act, including mercury and mercury compounds. The emissions data include estimates for stationary sources, mobile sources, and fires..

The NEI includes emission data supplied by State, Tribal and local-government environmental agencies. These data are supplemented with other data, including information gathered during the development of and implementation of regulations by the EPA, as well as data from the Toxics Release Inventory (TRI). Using quality assurance procedures, the data from multiple sources are blended together to complete the NEI.

The NEI is under constant review to improve data quality. Information on the NEI, including summary data and documentation, can be found at <http://www.epa.gov/ttn/chief/index.html>. Data are compiled and released to the public every three years. The most recent inventory is for the year 2011, and the next inventory that will be available will be for 2014.

### **US EPA Toxics Release Inventory (TRI):**

The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on the quantities of certain toxic chemicals released annually from facilities to air, water and land, or otherwise managed as waste (e.g., recycled, burned for energy recovery, treated) throughout the United States. The TRI was established by Congress under the Emergency Planning and Community Right-to-Know Act of 1986, and later amended by the Pollution Prevention Act of 1990, to increase the public's access to information on toxic chemicals released or managed as waste in their communities.

Facilities that meet conditions for reporting their emissions and other waste management quantities of toxic chemicals must submit the required information by July 1<sup>st</sup> of each calendar year. EPA compiles these data in the TRI database, and makes the data available to the public in a format that is easy for citizens and other users to access, understand, and analyze. While TRI data are often used to track emissions of toxic chemicals each year by specific industrial facilities in local communities, the data are also often used to identify facilities and parent companies that have prevented pollution. EPA has transformed the way its TRI Program collects, analyzes, and disseminates information on toxic chemical waste management and pollution prevention. For example, EPA has emphasized that TRI reporting is not just an obligation but also an opportunity to highlight pollution practices and results, showcase “good neighbor stories,” and demonstrate a corporation's commitment to

sustainability. EPA has also enhanced reporting mechanisms to allow facilities to share information about green chemistry and engineering practices, identify barriers to pollution prevention, and estimate the relative effectiveness of different waste reduction measures, thus ensuring that TRI will be an even richer pollution prevention information resource for industry and the public in years to come.

TRI data are also used by federal, state and local governments for prioritization purposes. TRI information and mapping capability are publicly accessible through a variety of tools (<http://www2.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools>)

Reporting of TRI data is required by those facilities that manufacture, process, or otherwise use toxic chemicals on the TRI list in annual quantities that exceed established thresholds. Facilities must report annually to EPA and state and tribal governments regarding their environmental releases and other waste management quantities of these chemicals. It is important to note that TRI reporting is based on a facility's annual production, processing or use of chemicals, not on an emission threshold. Therefore a specific industrial facility may not be required to file a TRI report each year.

The reporting thresholds for most chemicals on the TRI chemical list are 25,000 lbs for manufacturing or processing a chemical within a calendar year, and 10,000 lbs for otherwise using a chemical with a calendar year. Because of special concerns for mercury (a TRI listed chemical), EPA lowered these reporting to 10 pounds for manufacturing, processing or otherwise using mercury or a mercury compound within a calendar year. The effective date for this reporting change was the year 2000.

TRI reporting requirements provide an exemption for small businesses. A facility that is otherwise subject to TRI reporting need only report if it has 10 or more full-time-equivalent employees. Hence, not all facilities that manufacture, process, or otherwise use mercury or mercury compounds in quantities greater than 10 pounds per year are required to report their annual emissions or other waste management quantities of mercury.

EPA makes the most recent TRI data and information available each year through an official data release known as the TRI National Analysis. The most recent TRI National Analysis pertains to TRI data submitted for calendar year 2013 (i.e., was submitted by July 1<sup>st</sup> of 2014). This National Analysis was made available to the public in January of 2015.

**National Rivers and Streams Assessment:** is a two-year study with results expected to be available in 2011.

**National Coastal Assessment:** has collected whole fish samples from 800- 1,000 sites in the Great Lakes and marine coastal waters for analysis of mercury and selenium. The Great Lakes portion of the National Coastal Assessment began in the spring of 2010 to collect human health (fillet) fish-tissue samples at 150 sites.

**The Great Lakes Fish Monitoring and Surveillance Program** (GLFMSP) analyses contaminants, such as mercury, in top predator fish in the Great Lakes on an annual basis to assess the ecological health of the Great Lakes. The program is operated

through cooperative efforts between US EPA, other federal agencies, Environment Canada, state and tribal partners, and academia. Analytical data is produced through a competitive cooperative agreement and is awarded on a five year rotation. The period of record is 1970-the present. Sampling included whole body tissues lake trout, walleye, and some forage species. The GLFMSP maintains a long term frozen fish tissue archive. Priority contaminants for the Program include mercury, PCBs, organochlorine pesticides, and other contaminants of emerging concern.

<http://www.epa.gov/grtlakes/monitoring/fish/index.html>

**EPA's Office of Research and Development** (ORD) re-sampled 42 sites from the original Mid-Atlantic Highlands Assessment (MAHA), where fish-tissue mercury samples were collected in 1993–1994. In 2005, ORD sampled 60 Temporally Integrated Monitoring of Ecosystems (TIME) sites in the mid-Atlantic region for the first time for fish tissue mercury. ORD intends to re-sample these sites for fish tissue mercury every 2–3 years, as funds allow.

**National Study of Chemical Residues in Lake Fish Tissue:** A four-year study of 500 freshwater lakes and reservoirs completed by EPA in November, 2009. Mercury was detected in all piscivorous composite samples and 48.8 percent exceeded EPA's 0.3 mg methyl mercury/kg criterion for mercury for freshwater fish, estuarine fish, and shellfish. This water quality criterion describes the concentration of methylmercury in freshwater and estuarine fish and shellfish tissue that should not be exceeded to protect consumers of fish and shellfish among the general population.

## US DATA – STATES

### The State of Massachusetts (MA)

The State of Massachusetts has conducted environmental monitoring studies addressing mercury for over two decades. These have included a number of scientific assessments of mercury levels in fish and other biota, emissions, and deposition completed by the MA Department of Environmental Protection (MassDEP). In 1994, the first comprehensive statewide examination of mercury in freshwater fish was initiated, followed in 1999 by a study of fish mercury concentrations in an area of the state predicted to have regionally high atmospheric deposition of mercury attributable to local point sources of mercury emissions. In 2001, a long-term monitoring protocol was developed for fish mercury sampling. A focus of current work is to assess temporal changes in fish mercury concentrations. Specific studies that have been conducted or are underway include: 1) long-term trend analysis of freshwater fish mercury concentrations in relation to mercury pollution reductions; 2) assessment of state-wide fish mercury concentrations; 3) characterization of fish mercury concentrations in an emission source and deposition “hotspot”; 4) investigation of seasonal variability in fish mercury measurements; 5) evaluation of comparative differences in mercury partitioning in lake food webs; 6) completion of a state-of-knowledge review on mercury in other wildlife; and, 7) evaluation of non-lethal fish tissue sampling techniques. MA fish mercury monitoring efforts largely focus on freshwater fish, in particular two indicator species, yellow perch (*Perca flavescens*) and largemouth bass (*Micropterus salmoides*) with limited sampling of additional species. Some sampling of salt water species has also been conducted in MA, in particular in relation to discharges of treated wastewater to the ocean. Information and coordination of mercury fish monitoring across the Northeast US states occurs through the New England Governors and Eastern Canadian Premiers Mercury Task Force (NEG-ECP MTF) and the North East Interstate Water Pollution Control Commission (NEIWGCC). The frequency and timing of sampling depends on study objectives.

*Public health screening program.* The general public may request that fish from a lake or stream be sampled and analyzed for the presence of potentially toxic chemicals including mercury. Sampling is conducted as budgets allow, with preference given to heavily fished locations. Composite samples of the recreational sport species targeted by sport or subsistence fisher-people at a particular lake are typically analyzed. If contaminants exceed health standards, fish consumption advisories are posted at the water body by local Boards of Health and/or the MA Department of Public Health.

*Mercury “hotspot” assessment.* Mercury concentrations in fish from 26 lakes in northeast Massachusetts were measured to



establish a baseline for fish in an area where large mercury emission reductions were about to be required by state regulations. Specifically, this sampling effort was conducted prior to regulatory pollution control requirements on major local mercury emission point sources, municipal solid waste incinerators and medical waste incinerators, in the area.

Numerous fish were sampled from each water body (up to 30 of each species) to enhance the statistical sensitivity of the assessment. Many of these waterbodies have been repeatedly sampled (annually) since mercury emissions from the area's point sources were reduced by approximately 95%.

*Long-term strategic monitoring initiative.* 18 water bodies across- the-state were selected to serve as long-term fish mercury monitoring locations.

Mercury concentrations in statically robust samples of indicator fish species, as well as water quality parameter data, are being collected at these locations on a rotating basis, typically once every three years. Actual sampling depends on funding and staff resources.

Results from this long-term monitoring effort were published in 2014 (Hutcheson, M.S.; Smith, C.M.; Rose, J.; Batdorf, C.; Pancorbo, O.; Rowan West, C.; Strube, J.; Francis, C. Temporal and Spatial Trends in Freshwater Fish Tissue Mercury Concentrations Associated with Mercury Emissions Reductions. *Environmental Science and Technology* 2014, 48: 2193-2202). In this assessment data on mercury concentrations in largemouth bass (LMB) and yellow perch (YP) in 23 lakes in Massachusetts (MA) USA for the period from 1999 – 2011. During this period the state of Massachusetts and the northeast region of North America achieved highly significant local and regional Hg emissions reductions. Average LMB tissue Hg concentration decreases of 44% were seen in 13 of 16 lakes in a regional Hg “hotspot” area of MA. YP in all lakes sampled in this area decreased 43% after the major emissions reductions. Comparative decreases throughout the remainder of the state were 13% and 19% for LMB and YP respectively. Annual tissue mercury concentration rate decreases were 0.029 (LMB) and 0.016 mg Hg/kg/yr (YP) in the hotspot. In lakes around the rest of the state, LMB showed no trend and YP Hg decreased 0.0068 mg Hg/kg/yr. Mercury emissions from major point sources in the hotspot area decreased 98%, and 93% in the rest of the state from the early 1990s to 2008. The significant declines in fish Hg concentrations in many lakes occurred over the second half of a two decade decrease in Hg emissions primarily from municipal solid waste combustors and, secondarily, from other combustion point sources. In addition to the substantial Hg emissions reductions achieved in Massachusetts, further regional, national and global emissions reductions are needed for fish Hg levels to decrease below fish consumption advisory levels.

**The State of Minnesota (MN)**

Minnesota's Fish Contaminant Monitoring Program (FCMP) is conducted by the state Departments of Natural Resources (DNR), Health (MDH), and Agriculture (MDA) and the Minnesota Pollution Control Agency (MPCA). Each year these agencies jointly select lakes and rivers for fish collection and analysis. Testing of contaminants in Minnesota fish began in 1967 and continues today. The FCMP routinely monitors fish for mercury and polychlorinated biphenyls (PCBs) and collects fish for special studies that assess human exposure to other chemicals present in fish tissue. Approximately 130 lakes and river segments are sampled each year. The FCMP database now has 31,000 data records. The program has sampled about 1,200 lakes, or 22% of the estimated 5,500 fishing lakes in the state. Average mercury concentrations in northern pike and walleye over a 25-year period, from 1982 to 2006, trended downward until the mid-1990s and have since shown an upward trend. Minnesota will continue to collect fish for mercury analysis to track this unexpected shift in the long-term trend. For further information see: <http://www.pca.state.mn.us/index.php/topics/mercury/mercury-contamination-in-fish.html>.

**The State of Alaska (AK)**

The Alaska Department of Environmental Conservation's Fish Monitoring Program was developed in 2001. The program is a collaborative effort with biologists from the Alaska Department of Fish and Game, the U.S. National Oceanic and Atmospheric Agency, the International Pacific Halibut Commission and commercial and some Native fishermen and involves a general survey of selected marine and freshwater finfish species from around the state and testing these fishes for certain environmental contaminants. Samples of salmon (all 5 species), halibut, Pollock, sablefish, Pacific cod, lingcod, rockfish and other species are collected from marine waters, at the mouth of rivers and fresh water rivers and lakes throughout the state. Samples may also be collected from additional species of fish and from new geographic locations. Further information about Alaska's fish monitoring program can be found at <https://dec.alaska.gov/eh/vet/fish.htm>. Information about other biomonitoring efforts in Alaska can be found at <http://www.epi.alaska.gov/eh/biom/>.

**The State of California (CA)**

<http://oehha.ca.gov/about/Alexbio.html>

<http://calepa.ca.gov/StaffDirectory/detail.asp?UID=1777&BDO=6&VW=DET&SL=A>

### Other State Data

Many states collect data on mercury emissions from various sources, mercury levels in various consumer products mercury levels in biota and other environmental media.

Mercury In Products: Further information on mercury in products may be found at the Interstate Mercury Education and Reduction Clearinghouse (IMERC) at <http://www.newmoa.org/prevention/mercury/imerc/about.cfm> IMERC collects and manages data submitted by manufacturers of mercury-added products and, as necessary to implement the notification provisions of state mercury reduction legislation; facilitates interstate collaboration on the development and implementation of public education and outreach programs on mercury-added products; endeavors to make information on mercury-added products available to industry and the public; responds to public information requests for information on mercury-added products, the requirements of the member states, and the status of state implementation of their laws; and provides technical assistance, facilitate reviews, and make recommendations to the member states.

Mercury Emissions, Levels in Biota and State Policies: For further information regarding other state mercury data and activities please see the Third Compendium of State Mercury Activities at [http://www.ecos.org/section/committees/cross\\_media/quick\\_silver/third\\_compendium\\_of\\_states\\_mercury\\_activities](http://www.ecos.org/section/committees/cross_media/quick_silver/third_compendium_of_states_mercury_activities) .