New Safe Eating Guidelines for Bay Fish

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Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

RMP Annual Meeting
Oakland, California
October 4, 2011
Overview

- Brief history of fish advisories
- Monitoring of chemicals in fish
- Results and evaluation
- New Safe Eating Guidelines
- Education, outreach, and risk reduction
Evolution of Fish Advisories

- 1971: First advisory for mercury in striped bass
- 1993: OEHHA re-evaluation of bay advisory
  - Updated striped bass advisory based on new data
  - Advisory for pesticides in Richmond Inner Harbor
Evolution Continues

- 1994: Pilot study included other species and chemicals
  - Identified potential chemicals of concern
- OEHHA issued interim SF Bay advisory
  - General and sensitive populations
Ongoing Monitoring

- Fish subcommittee
- Sampling every three years
- Core species and chemicals
  - Modified per sampling year
- Special studies
Monitoring Results
Evaluation of Results

- OEHHA’s advisory protocol
  - Consistent across advisories
  - Requires data to pass quality control
  - Based on newest studies and methods in toxicology
  - Balances risks and benefits of fish consumption
Interpreting the Data

- Averaged concentrations bay wide
  - No consistent geographic patterns
- Advice based on mercury and PCBs
- Added data for anadromous species
- Mercury and length in striped bass
  - Did not support size-based advice
# Average Mercury and PCBs

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Mercury</th>
<th>PCBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinook (king) salmon</td>
<td>83</td>
<td>5</td>
</tr>
<tr>
<td>Jacksmelt</td>
<td>84</td>
<td>22</td>
</tr>
<tr>
<td>Brown rockfish</td>
<td>129</td>
<td>5</td>
</tr>
<tr>
<td>Red rock crab (muscle)</td>
<td>133</td>
<td>4</td>
</tr>
<tr>
<td>California halibut</td>
<td>329</td>
<td>18</td>
</tr>
</tbody>
</table>

*Results in ppb*
## Average Mercury and PCBs

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<thead>
<tr>
<th>Common Name</th>
<th>Mercury</th>
<th>PCBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown smoothhound shark</td>
<td>677</td>
<td>9</td>
</tr>
<tr>
<td>Leopard shark</td>
<td>951</td>
<td>14</td>
</tr>
</tbody>
</table>

*Results in ppb*
# Average Mercury and PCBs

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<tr>
<th>Common Name</th>
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<th>PCBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>White croaker</td>
<td>222</td>
<td>52</td>
</tr>
<tr>
<td>White sturgeon</td>
<td>312</td>
<td>76</td>
</tr>
<tr>
<td>Striped bass</td>
<td>419</td>
<td>40</td>
</tr>
<tr>
<td>White croaker – skin on</td>
<td>222</td>
<td>219</td>
</tr>
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</thead>
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<tr>
<td>Black perch</td>
<td>118</td>
<td>8</td>
</tr>
<tr>
<td>Barred surfperch</td>
<td>346</td>
<td>21</td>
</tr>
<tr>
<td>Rubberlip seaperch</td>
<td>349</td>
<td>9</td>
</tr>
<tr>
<td>Shiner perch</td>
<td>103</td>
<td>137</td>
</tr>
<tr>
<td>Walleye surfperch</td>
<td>155</td>
<td>59</td>
</tr>
<tr>
<td>All surfperch</td>
<td>112</td>
<td>131</td>
</tr>
</tbody>
</table>

*Results in ppb*
What is Different?

- More species evaluated
- Specific guidelines for species
- Identify safer fish and shellfish
- Messaging -- use pictures to convey
- Show fish high in omega-3 fatty acids
A guide to eating San Francisco Bay fish and shellfish

Women 18 - 45 and children 1 - 17

What is a serving?
For Adults / For Children
The recommended serving of fish is about the size and thickness of your hand. Give children smaller servings.

- Eat only the skinless fillet. PCBs are in the fat and skin of the fish.
- Cook thoroughly and allow the juices to drain away.
- For crab, eat only the meat.

Why eat fish?
Eating fish is good for your health. Fish have Omega-3s that can reduce your risk for heart disease and improve how the brain develops in unborn babies and children.

What is the concern?
Some fish have high levels of PCBs and mercury. PCBs might cause cancer. Mercury can negatively affect how the brain develops in unborn babies and children. It is especially important for women who are pregnant or breastfeeding to follow these guidelines.

Safe to eat 2 servings per week  OR  Safe to eat 1 serving per week

Do not eat AND Do not eat any fish from the Lauritzen Channel in Richmond Inner Harbor

California Office of Environmental Health Hazard Assessment • www.oehha.ca.gov/fish.html • (916) 327-7319 or (510) 622-3170

Brown rockfish
Jacksmelt
Red rock crab
Chinook (king) salmon
California halibut
Shiner perch or other surfperches
Sharks
Striped Bass
White sturgeon

❤️ = High in Omega-3s
A guide to eating San Francisco Bay fish and shellfish

Men over 17 and women over 45

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Safe to eat 2 servings per week
- Brown rockfish OR red rock crab
- 5 servings per week OR
- Salmon – 7 servings per week

Safe to eat 1 serving per week

Do not eat AND
Do not eat any fish from the Lauritzen Channel in Richmond Inner Harbor

Chemical Meter
Low
Medium
High

Striped Bass
Jacksmelt
California halibut
Brown rockfish
Red rock crab
Chinook (king) salmon
White croaker
Sharks
Shiner perch or other surfperches

Heart symbol: High in Omega-3s

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Getting the Message Out

• San Francisco Bay Fish Project
  • Partnered with CA Department of Public Health
  • Raise public awareness and reduce exposure
  • Stakeholder Advisory Group (SAG)

• Community-based organizations (CBOs)

• New sign under development
Educational Outreach

- Grants to four CBOs
  - Kids for the Bay
  - CA Indian Environmental Alliance
  - Greenaction for Health and Environmental Justice
  - APA Family Support Services
- Variety of media and diverse communities
Summary

- Mercury and PCBs are chemicals of concern
  - DDTs, dieldrin, chlordane, selenium below levels of concern
- You can eat some fish from the bay
- PBDEs not presently at level of concern
Summary

- Continue monitoring
  - Better advice for more species
  - Effect of management actions
  - Emerging contaminants
  - To inform managers and protect the public
Thank you

- Robert K. Brodberg, Ph.D., Susan A. Klasing, Ph.D., Lizette F. Cook, M.S.
- San Francisco Bay Regional Monitoring Program
- Surface Water Ambient Monitoring Program
- Moss Landing Marine Laboratories
- San Francisco Bay Regional Water Quality Control Board
- San Francisco Estuary Institute
- California Department of Public Health, Environmental Health Investigations Branch