Fish Advisories

Margy Gassel, Ph.D.
Office of Environmental Health Hazard Assessment (OEHHA)

Community Stakeholder Group
San Joaquin County Public Health, Stockton
Wednesday, October 22, 2014

Walnut Grove Library, Walnut Grove
Thursday, October 23, 2014
OEHHA’s Role

- OEHHA is responsible for evaluating risks from eating California fish and issuing advice to protect public health
  - Fish may be contaminated by chemicals
  - Non-regulatory – advisories provide recommendations and information
Why Have Fish Advisories?

- Possible harmful health effects
  - Mercury and PCBs
- Long time to clean up
  - Legacy chemicals persist in environment
  - Responsibility of Water Board
- Eating fish offers health benefits
- Some fish less contaminated than others
Potential Health Effects

- Developing fetus, babies, and children most sensitive
- Brain and nervous systems developing
  - Subtle effects on learning (cognitive thinking, memory, attention, language, and fine motor and visual spatial skills)
- More protective advice for women 18-45 years and children 1-17 years
Gold and Mercury Mines near the Central Valley

Mercury is the contaminant of concern
Water Flow into the Sacramento and San Joaquin Rivers
Sacramento-San Joaquin Delta

- The Sacramento-San Joaquin Delta is at the heart of California’s water supply.
- The Delta has been re-engineered and re-plumbed over the last 160 years to meet the needs of the State.
Fish Sampling In the Central Valley Watershed

- Fish Mercury Project
- San Joaquin River and Central & South Delta water bodies
- Sacramento River and Northern Delta water bodies
Sacramento-San Joaquin Delta Advisories

- Central and South Delta
  - Port of Stockton
- San Joaquin River
- Lower Mokelumne River
- Lower Cosumnes River
- Sacramento River and Northern Delta
Northern Delta — Central and South Delta Advisories
Boundary: Highway 12
Central & South Delta and San Joaquin River

- Lower mercury levels in fish from the Central and South Delta
  - Compared to fish from the San Joaquin River south of Stockton

- Two separate advisories issued (2004)
  - Central & South Delta
  - San Joaquin River south of Stockton
Central & South Delta Advisory

- Advisory includes the San Joaquin River and other water bodies in the Delta south Highway 12
  - San Joaquin River from the Port of Stockton to Pittsburg
  - Excludes the Sacramento River
- Special advice for the Port of Stockton
  - No one should eat any fish or shellfish from the Port of Stockton
A guide to eating fish caught in the Central and South Delta
This advisory is for all waterbodies in the Delta south of Highway 12 (except the Sacramento River)

Women 18 - 45 and children 1 - 17

- **Low**
  - Steelhead trout
  - American shad
  - Crayfish
  - Catfish
  - Bluegill or other sunfish
  - Chinook (king) salmon

- **Medium**
  - Bass
  - Sucker
  - Crappie
  - Carp

- **High**
  - Striped bass
  - White sturgeon

Men over 17 and women over 45 can eat more fish

- 7 servings a week OR
- 5 servings a week of crayfish or catfish OR

- 2 servings a week OR
- 2 servings a week of striped bass OR
- 1 serving a week of sturgeon

What is a serving?

- **For Adults**
  - The recommended serving of fish is about the size and thickness of your hand. Give children smaller servings.

- **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 mercury and PCBs. Mercury can harm the brain especially in unborn babies and children. PCBs can cause cancer.

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2 servings a week OR 7 servings a week of clams

1 serving a week

Do not eat AND do not eat any fish or shellfish from the Port of Stockton

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

- San Joaquin River south of Stockton (from Friant Dam to the Port of Stockton)
  - Mercury levels in fish were higher in this part of the river than in the Central and South Delta
A guide to eating fish caught in the San Joaquin River
From Friant Dam to the Port of Stockton

Women 18 - 45 and children 1 - 17

- Bluegill or redear sunfish
- Steelhead trout
- Chinook (king) salmon
- American shad
- Catfish
- Carp or goldfish
- Sucker

Mercury Meter:
- Low
- Medium
- High

Men over 17 and women over 45 can eat more fish

- 7 servings a week — Chinook (king) salmon, shad, or steelhead trout OR
- 5 servings a week — bluegill or reear sunfish OR
- 2 servings a week — carp, catfish, or sucker OR
- 1 serving a week — largemouth bass or white sturgeon OR
  2 servings a week — striped bass

Do not eat fish or shellfish from the Port of Stockton.

What Is a serving?

- For Adults: The recommended serving of fish is about the size and thickness of your hand. Give children smaller servings.

- For Children: For Children

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 mercury and PCBs. Mercury can harm the brain especially in unborn babies and children. PCBs can cause cancer.

2 servings a week — bluegill or redear sunfish, Chinook (king) salmon, or steelhead trout OR
3 servings a week — shad

1 serving per week

Do not eat AND
Do not eat any fish or shellfish from the Port of Stockton

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Lower Mokelumne and Lower Cosumnes River Advisories

- Advisories issued together (2006)
- Mokelumne River flows into the San Joaquin River
- South Fork Mokelumne River in the Delta
Lower Mokelumne River
Lower Mokelumne River Advisory

- From below Camanche Reservoir to the San Joaquin River
### Safe Eating Guidelines for Fish and Shellfish from the Lower Mokelumne River

#### Women 18 – 45 and Children 1 – 17 Years

<table>
<thead>
<tr>
<th>Fish and Shellfish</th>
<th>Servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>American shad</td>
<td>2-3 servings per week or 7 servings per week of clams (❤️)</td>
</tr>
<tr>
<td>Chinook king salmon</td>
<td>1 serving per week</td>
</tr>
<tr>
<td>Clams</td>
<td></td>
</tr>
<tr>
<td>Steelhead trout**</td>
<td></td>
</tr>
<tr>
<td>Bluegill or other sunfish</td>
<td></td>
</tr>
<tr>
<td>Catfish</td>
<td></td>
</tr>
<tr>
<td>Crayfish</td>
<td></td>
</tr>
<tr>
<td>Largemouth, smallmouth, or spotted bass</td>
<td>Do not eat</td>
</tr>
<tr>
<td>Pikeminnow</td>
<td></td>
</tr>
<tr>
<td>Striped bass</td>
<td></td>
</tr>
<tr>
<td>White sturgeon</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** It is only legal to keep hatchery steelhead, and only in select waters. Hatchery steelhead are identified by a missing adipose fin and healed scar in the location of the missing fin. All wild steelhead must be released unharmed.

❤️ = High in omega-3s
Safe Eating Guidelines for Fish and Shellfish from the Lower Mokelumne River

<table>
<thead>
<tr>
<th>Men over 17 Years and Women over 45 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>American shad  ♥</td>
</tr>
<tr>
<td>Chinook king salmon  ♥</td>
</tr>
<tr>
<td>Clams</td>
</tr>
<tr>
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| 7 servings per week OR 2 servings per week OR 1 serving per week |

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♥ = High in omega-3s
Lower Cosumnes River

- Flows into the Mokelumne River
Lower Cosumnes River Advisory

- Cosumnes River natural flows (not dammed)
- Lower Cosumnes River more contaminated
  - Advice for the sensitive population: Do not eat bass, catfish, or crappie
Safe Eating Guidelines for Fish and Shellfish from the Lower Cosumnes River

Women 18 – 45 and Children 1 – 17 Years

<table>
<thead>
<tr>
<th>Fish/Species</th>
<th>Servings a Week</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>American shad</td>
<td>2-3 or 7 servings of clams</td>
<td></td>
</tr>
<tr>
<td>Chinook king salmon</td>
<td>2-3 or 7 servings of clams</td>
<td></td>
</tr>
<tr>
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<tr>
<td>Steelhead trout**</td>
<td>2-3 or 7 servings of clams</td>
<td></td>
</tr>
<tr>
<td>Carp</td>
<td>1 serving per week</td>
<td></td>
</tr>
<tr>
<td>Crayfish</td>
<td>1 serving per week</td>
<td></td>
</tr>
<tr>
<td>Redear or other sunfish</td>
<td>1 serving per week</td>
<td></td>
</tr>
<tr>
<td>Sucker</td>
<td>1 serving per week</td>
<td></td>
</tr>
<tr>
<td>Bass</td>
<td>Do not eat</td>
<td></td>
</tr>
<tr>
<td>Catfish</td>
<td>Do not eat</td>
<td></td>
</tr>
<tr>
<td>Crappie</td>
<td>Do not eat</td>
<td></td>
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❤️ = High in omega-3s
Safe Eating Guidelines for Fish and Shellfish from the Lower Cosumnes River

Men over 17 Years and Women over 45 years

<table>
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<tr>
<th>American shad</th>
<th>Carp</th>
<th>Bass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinook king salmon</td>
<td>Crayfish</td>
<td>Catfish</td>
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<tr>
<td>Clams</td>
<td>Redear or other sunfish</td>
<td>Crappie *</td>
</tr>
<tr>
<td>Steelhead trout**</td>
<td>Striped bass</td>
<td>White sturgeon</td>
</tr>
<tr>
<td>Sucker</td>
<td></td>
<td></td>
</tr>
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</table>

7 servings per week OR 2 servings per week OR 1 serving per week

*EXCEPT Do not eat crappie

** Note: It is only legal to keep hatchery steelhead and only in select waters. Hatchery steelhead are identified by a missing adipose fin and healed scar in the location of the missing fin. All wild steelhead must be released unharmed.

❤ = High in omega-3s
Sacramento River and Northern Delta Advisory

- One combined advisory (2008)
  - Fish mercury levels similar in the river and Northern Delta water bodies
- Sacramento River from below Shasta lake to Pittsburg
- All water bodies in the Delta north of Highway 12
Sacramento River

Shasta Lake
A guide to eating fish caught in the Sacramento River and Northern Delta

This advisory is for the Sacramento River and all water bodies in the Delta north of Highway 12 to Sacramento.

Women 18 - 45 and children 1 - 17

- Low: Asiatic clam, American shad, Steelhead trout, Rainbow trout, Chinook (king) salmon
- Medium: Carp or goldfish, Sucker, Crappie, Catfish, Bluegill or other sunfish, Hardhead, Crayfish, Hitch
- High: Striped bass, Bass, Pikeeminnow, White sturgeon

Men over 17 and women over 45 can eat more fish

- 7 servings per week OR
- 3 servings per week OR
- 1 serving per week OR
- 2 servings per week of striped bass

What is a serving?

- For Adults: The recommended serving of fish is about the size and thickness of your hand. Give children smaller servings.

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 mercury and PCBs. Mercury can harm the brain especially in unborn babies and children. PCBs can cause cancer.

2 servings a week OR 7 servings a week of clams OR 1 serving per week Do not eat

Rainbow trout photo: John Lyons, Wisconsin Department of Natural Resources

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Regional Advisory for Fish that Swim between the Ocean and Rivers (2012)

“Anadromous” species
- American shad
- Chinook salmon
- Steelhead trout
- Striped bass
- White sturgeon

Women ages 18 - 45 and children ages 1 - 17 years old

Safe to eat 2-3 servings per week

Safe to eat 1 serving per week

Do not eat

What is the concern?
Some fish have high levels of mercury and PCBs. 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. PCBs might cause cancer.

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

For Children

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.

These guidelines do not apply to these fish caught in lakes or reservoirs.

* Note: It is only legal to keep hatchery steelhead and only in selected waters. Hatchery steelhead are identified by a missing adipose fin and healed scar in the location of the missing fin. All wild steelhead must be released unharmed.

Check California Department of Fish and Game Regulations (www.dfg.ca.gov/regulations/) for salmon, steelhead, striped bass, and white sturgeon, including legal sizes, bag and possession limits, and seasons, which can vary from year to year.

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1-12
Delta Advisory Updates

- Added “anadromous” species: live in rivers, estuaries, and coastal waters and swim from the ocean to rivers to spawn
- ❤️ = high in omega-3s
  - Salmon, steelhead trout, American shad
- Updated advice for clams
Statewide Advisory for Lakes and Reservoirs

Without site-specific advice