

Qualitative Evaluation of Sport Fish Consumption Advisories in California and Strategies for Effective Communication

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Fish Mercury Project (FMP) 2004-2008

- Monitor sport fish for mercury
- CDPH role: stakeholder involvement and risk communication
- Diverse fishing populations
- Stakeholder feedback: advisories not always understood or accepted



Advisory Evaluation Objectives

- Explore how target audiences perceive and understand sport fish consumption advisories
- Identify barriers to communication
- Explore portion sizes
- Identify more effective communication methods
- Create a brochure to communicate advisories to diverse populations

Methods

- Qualitative approach
 - Perceptions, attitudes, underlying beliefs
 - Level of comprehension
 - Acceptance of information/intention to change
- Tools
 - Key informant interviews (N=46)
 - Focus groups (9 focus groups, N=77)
- Written interview guide with open-ended questions and probing

Methods

- Participant recruitment
 - Ate sport fish at least one times/month
 - Represented diverse ethnicities, income and age ranges, men and women
 - Stipends provided
- Many interviews/focus groups recorded and transcribed, along with detailed field notes
- Data Analysis
 - Data coded independently by two staff
 - Categorized codes to generate broader themes
 - Saturation—range of responses exhausted

SAFE EATING GUIDELINES

Based on mercury in fish from the

SAN JOAQUIN RIVER

From the Port of Stockton to Friant Dam



Women of Childbearing Age,
Pregnant and Breastfeeding Women, and
Children 17 Years and Younger



Women Beyond Childbearing Age
and Men

Best Choices

Bluegill and other sunfish, or crayfish
Eat up to 4 servings* a week
(Total of 12 ounces cooked fish a week)

OR

Good Choices

Catfish, crappie, carp, or sucker
Eat up to 2 servings* a week
(Total of 6 ounces cooked fish a week)

Avoid

Largemouth, smallmouth, or spotted bass
Do Not Eat

Best Choices

Bluegill or other sunfish
Daily
(Total of 21 ounces cooked fish a week)
OR
Crayfish, crappie, or carp
Eat up to 6 servings* a week
(Total of 18 ounces cooked fish a week)
OR
Catfish or sucker
Eat up to 4 servings* a week
(Total of 12 ounces cooked fish a week)

OR

Good Choices

Largemouth, smallmouth, or spotted bass
Eat up to 2 servings* a week
(Total of 6 ounces cooked fish a week)

Symbols

Names for
population
groups

Category
headings and
Color
schemes

Portion
sizes

Follow the "No Consumption" warnings where signs are posted for the Port of Stockton area

* The recommended serving size for adults is three ounces of cooked fish (four ounces prior to cooking)

For more information, call OEHHHA at (510) 622-3170 or visit www.oehha.ca.gov and click on "Fish"


Barriers to Communication: Symbols

- Very influential, noticed first
- Silhouette images were misunderstood
- This image represented a family

OEHHHA California Environmental Protection Agency • Office of Environmental Health Hazard Assessment

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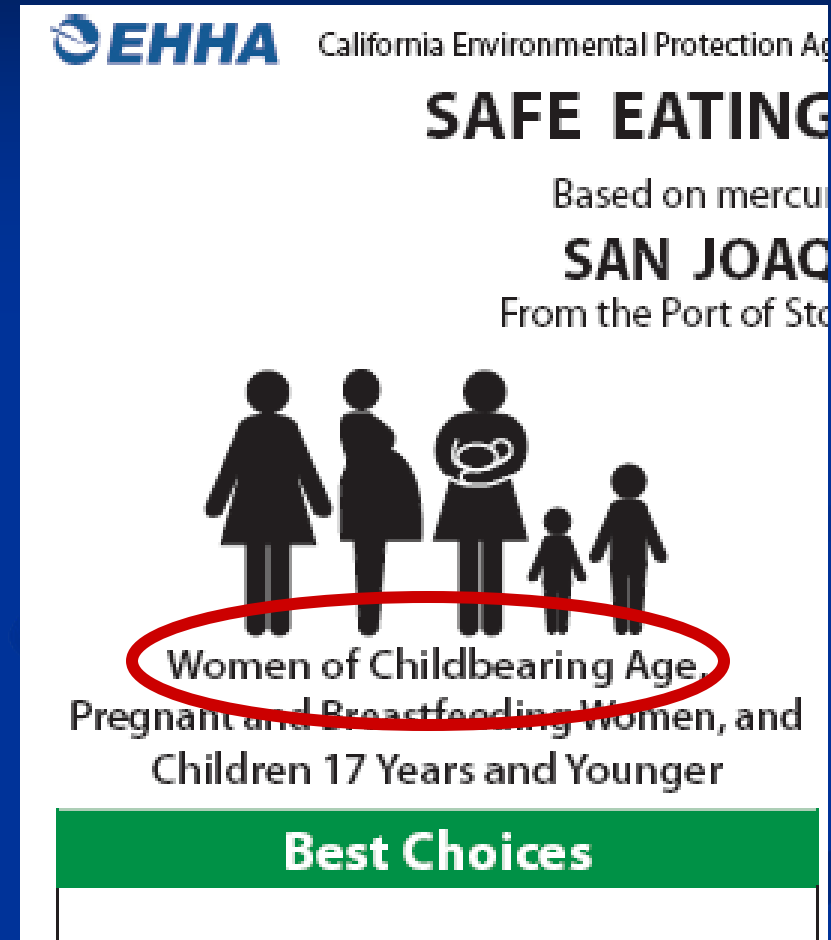
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Barriers to Communication: Terminology

- “Women of childbearing age”
 - Poorly understood
 - Active desire or current efforts to become pregnant
 - Not well accepted
 - Preferred term: “women 18-45”



Barriers to Communication: Terminology

- “Anglers” vs. “fishermen”
 - “Anglers” are elite fishermen who use fancy gear and boats, fish in tournaments, or do not eat their catch
- “Uncooked” vs. “cooked”
 - “Uncooked” interpreted as raw fish, so information not applicable if they don’t eat raw fish
- “Omega-3 fatty acids”
 - Poorly understood
 - “fatty acids” had negative connotation
 - Preferred: “High in Omega-3s” along with use of pink heart graphic 

Barriers to Communication: Category Headings

- “avoid” is understood
- “best” or “good” choice are not clear

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OR

Good Choices

Catfish, crappie, carp, or sucker
Eat up to 2 servings* a week
(Total of 6 ounces cooked fish a week)

Avoid

Largemouth, smallmouth, or spotted bass
Do Not Eat

Barriers to Communication: Category Headings

- Recommendations in heading not well understood
- Some respondents choose category that matched current consumption—did not understand that higher limits means safer fish

2 meals a week

Bluegill and Trout

1 meal a week

Catfish and Carp

1 meal a month

Largemouth bass


Barriers to Communication: Different advice for two populations presented side by side

- Difficult to figure out which advice column to follow
- Same fish in different categories was inconsistent and lacked credibility


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OR	OR
Good Choices	Good Choices
Catfish, crappie, carp, or sucker Eat up to 2 servings* a week (Total of 6 ounces cooked fish a week)	Largemouth, smallmouth, or spotted bass Eat up to 2 servings* a week (Total of 6 ounces cooked fish a week)
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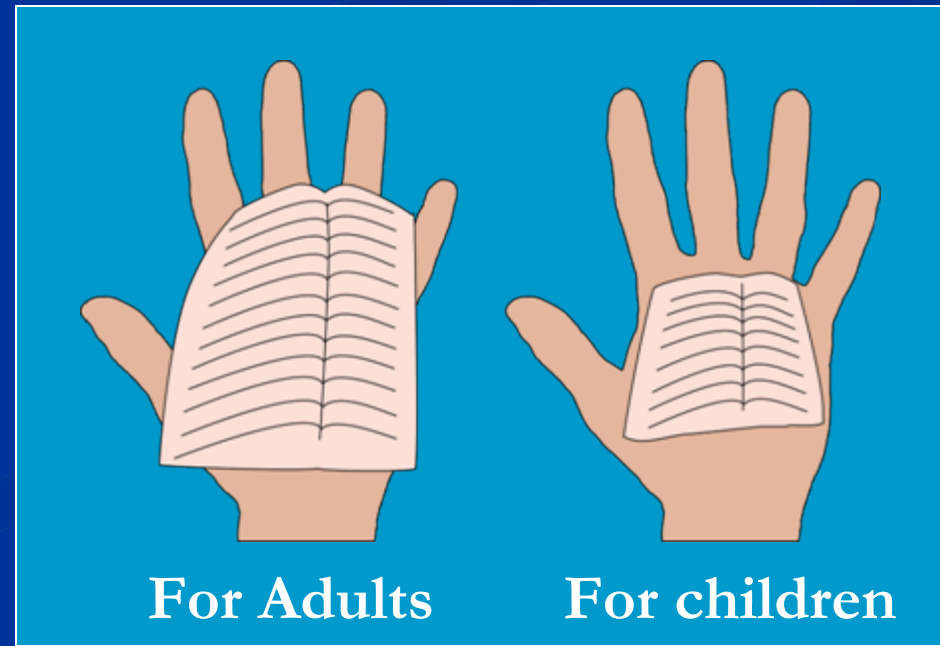
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Portion Sizes

- How are portion decisions made?
- Are advisories likely to influence portion sizes?
- Findings:
 - Decisions on portion sizes based on hunger/appetite/availability
 - Most participants do not understand ounces or could not estimate their consumption in ounces
 - Portion descriptions in advisories not likely to be heeded

Portion Sizes: Recommendations

- Avoid unrealistic portion sizes (e.g., 3 ounces)
- Base advice on typical consumer portion sizes (e.g., 6-8 ounces)
- Regulate intake through frequency of consumption (e.g., servings/week)
- Provide a visual reference
- Convey concept of smaller portions for children

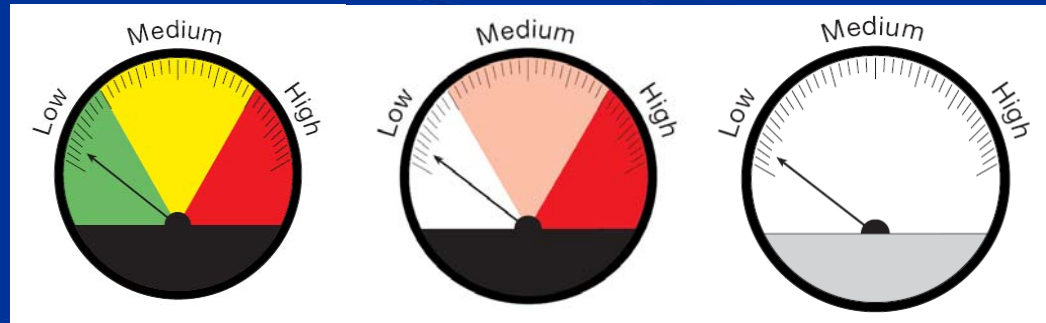
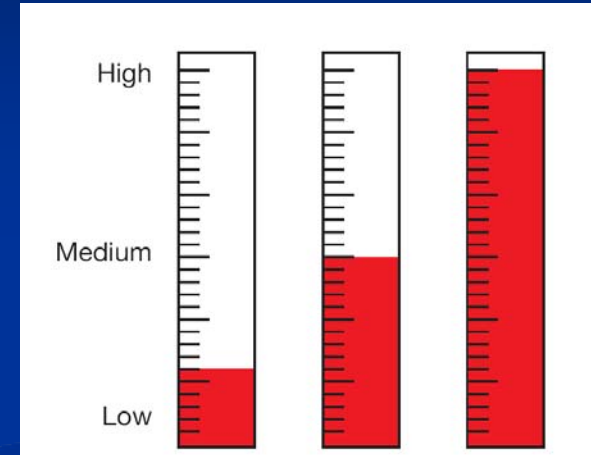
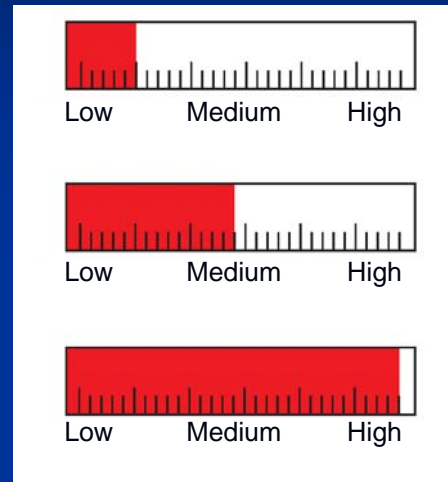


Influence of Personal Beliefs

- Personal beliefs strongly influence fishing and fish consumption
- Beliefs based on past experience, trusted sources, but generally not advisories
- Participants skeptical of advice that contradicts their beliefs
- Examples:
 - Bottom feeders like catfish are most contaminated
 - Striped bass swim fast, near the surface so they are cleaner
- Recommendation:
 - Don't give advice without explanation
 - Information about contamination levels in fish provided a basis for advice

Effective Methods

- Convey mercury levels with round meters
- Three categories
 - High, medium, low
- Color schemes
 - Red, yellow, green



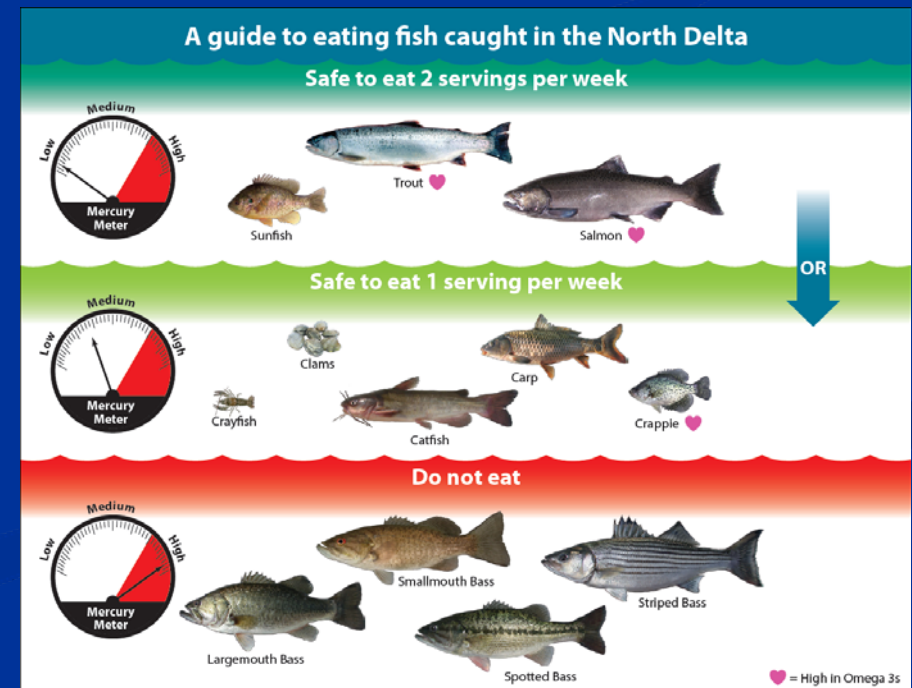
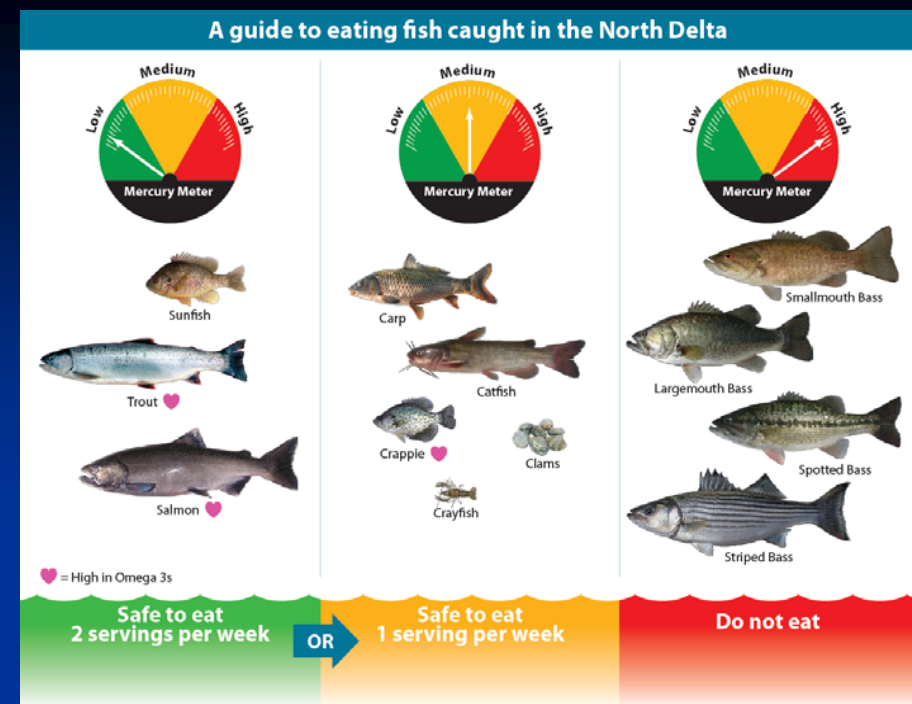
Effective Methods



- Fish pictures
 - Very influential, noticed first
 - Participants are strongly connected to their preferred fish
 - Non-English speakers could identify fish they ate even if they didn't know the names

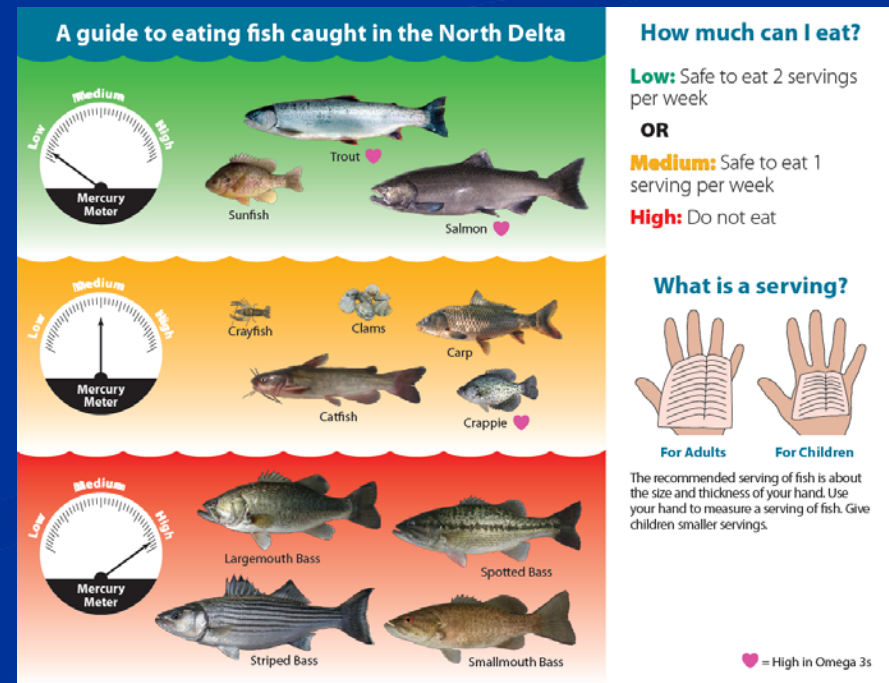
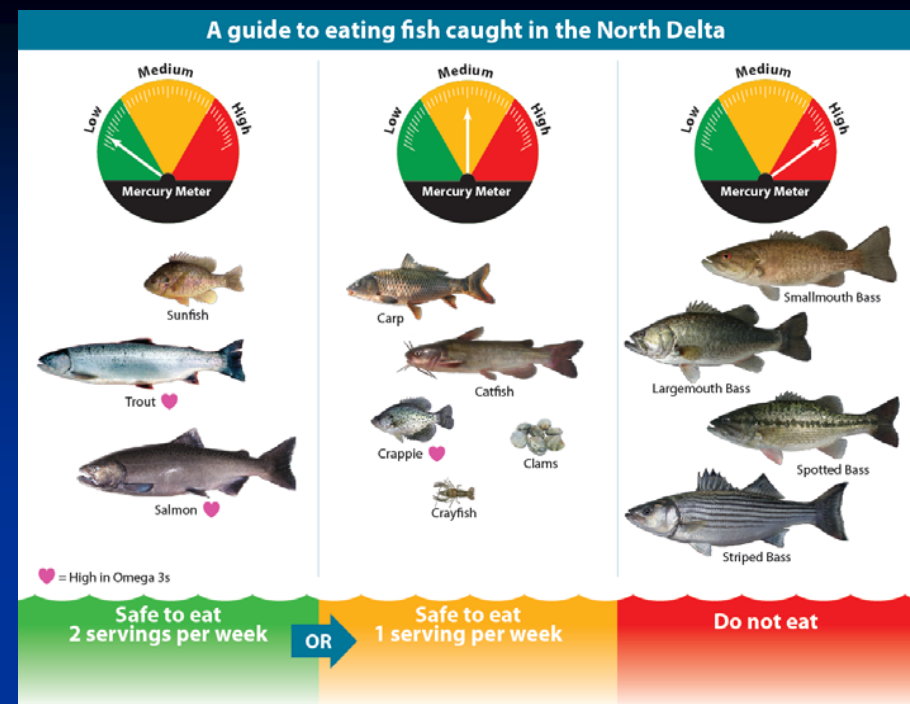
Effective Methods

- Vertical format preferred over horizontal format



Effective Methods

- Directly linking mercury level to advice using layout and color
- Don't use a key



How Participants Intend to Use Advisory

- Eat less fish or avoid contaminated species
 - *Well, if I can't eat the bass anymore, because it literally says 'do not eat' ...at least I can still eat catfish and, uh, carp, because I, I'm not going to eat that anymore.*
- Eat more “good” fish
 - *I guess I would try the salmon or the trout...because for one, it's high in omega-3s, low in mercury*
- Concern for others
 - *The first thing that I'm going to do is I'm going to go home and tell my husband, you know, what's ok to eat and what not to eat.*
- Recognizing options/choice
 - *Some people choose to run red lights, some people don't. You give the information out, they read it, it's their choice what they're going to do with it*

How Participants Intend to Use Advisory

- Reject advice/created distance from information
 - *I ain't gonna stop fishing. I ain't gonna stop eating striper bass.*
 - *This is good for the young crowd, because people will change, but I don't think it will do very much for us, because we're already set in our ways, you know, pretty much, as far as eating.*
 - *It's not like we eat fish every day.*
- Comprehension does not always result in compliance
- Need other communications approaches to change behavior

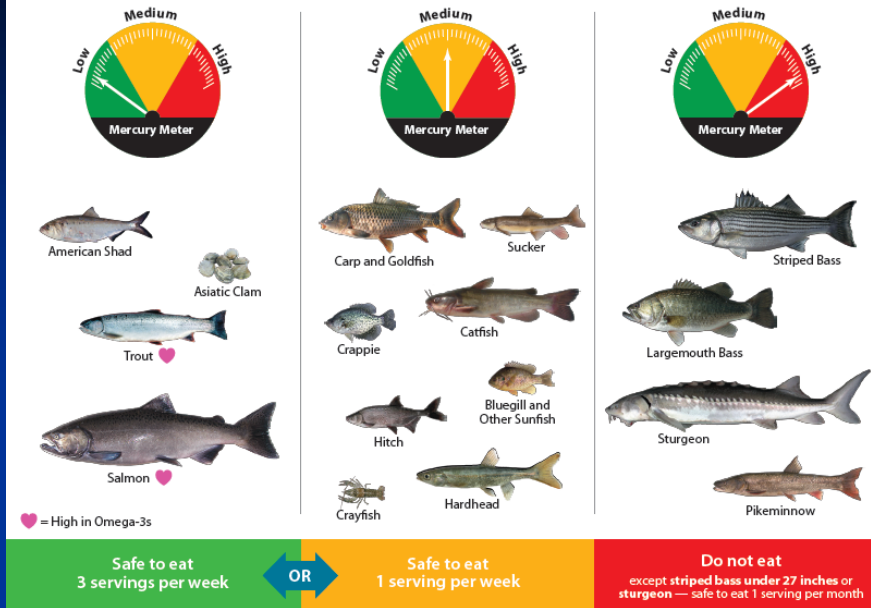
Topics Needing Further Investigation

- Comprehension of the term “Or”
- Conveying advice based on fish length
- Conveying advice for 2 populations
- Comprehension of sport fish advice alongside commercial fish advice
- Describing geographic areas

Conclusions

- Qualitative approach helped to gain deeper understanding of target audiences and improved how advisory information is presented
- Findings used to create an advisory brochure format
- New format used in 6 locations in California

A guide to eating fish caught in the Sacramento River and Northern Delta Women 18 - 45, especially those who are pregnant or breastfeeding, and children 1 - 17



Men over 17 and women over 45 can safely eat more fish

- Safe to eat 7 servings per week
- Safe to eat 3 servings per week
- Safe to eat 2 servings per month except largemouth bass and pikeminnow — safe to eat 1 serving per week

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 that can negatively affect how the brain develops in unborn babies and children.

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.

Fish buying guidelines for women 18 - 45 and children 1 - 17

Do not eat fish caught by family or friends in the same week that you eat fish bought in a store or restaurant. For fish that you buy:

- Safe to eat 2 servings per week of low mercury fish such as salmon, tilapia, shrimp, anchovies, sardines, trout, and canned chunk-light tuna
- Safe to eat 1 serving per week of medium-mercury fish such as canned albacore (white) tuna
- Do not eat shark, swordfish, tilefish, or king mackerel

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

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.

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- EcoVillage Farm Learning Center
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- United Cambodian Families
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- Expanded Food and Nutrition Education Program
- Delta Health Care WIC Program
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- California Striped Bass Association
- Oroville Hatchery