

# EXPOSURE REDUCTION IN SAN FRANCISCO BAY

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# WHAT IS THE PROBLEM?

- Mercury and PCBs are elevated in many types of San Francisco Bay fish
- Many people eat Bay fish (fishermen and their families)



# WHAT IS “EXPOSURE REDUCTION” ?

- Activities to reduce human exposure to mercury and PCBs from consumption of Bay fish
- Informing people vs. reducing their exposure
- Community based



# WHY “EXPOSURE REDUCTION” ACTIVITIES NOW?

- Part of the Water Board’s action plan (TMDLs) for cleaning up SF Bay
- *The mercury [and PCB] problem in SF Bay may take decades to solve. Activities...should be taken immediately to help manage the risk to [fish] consumers\**
- Exposure reduction is a requirement in SF Bay discharger permits
- New advisory for SF Bay in 2011



\*from the Basin Plan Amendment for Addressing Mercury in SF Bay

# WHAT IS THE SAN FRANCISCO BAY FISH PROJECT?



- Two-year project (Nov. 2010 to Oct. 2012) to raise awareness about mercury and PCBs in SFB fish and reduce exposures
- Coordinated by CDPH in collaboration with diverse groups
- Funding (\$290k) from dischargers and USEPA
- Activities:
  - Convene Stakeholder Advisory Group (SAG)
  - Develop educational materials
  - Develop and post San Francisco Bay warning sign
  - Support community-based projects
  - Conduct training and technical assistance
  - Evaluation

# STAKEHOLDER ADVISORY GROUP (SAG)

- SAG meets quarterly
- Comprised of community groups, local and state agencies, USEPA, dischargers, fishing site managers, and others
- Provided feedback and guidance on project activities
- Provided new information to SAG members
- Led to new activities
  - Warning signs
  - SAG members integrating fish messages in ongoing activities

# EAST BAY REGIONAL PARK DISTRICT MOBILE FISH EXHIBIT



Photo:  
Simone  
Lewis-  
Koskinen,  
Seaweb.org



# SAN FRANCISCO BAY WARNING SIGN

- Designed to be understood visually with limited English
- Simplified advisory
- “End state behavior”
- “QR” code and website  
[www.sfbayfish.org](http://www.sfbayfish.org)

Old sign (2003)



New sign (2012)

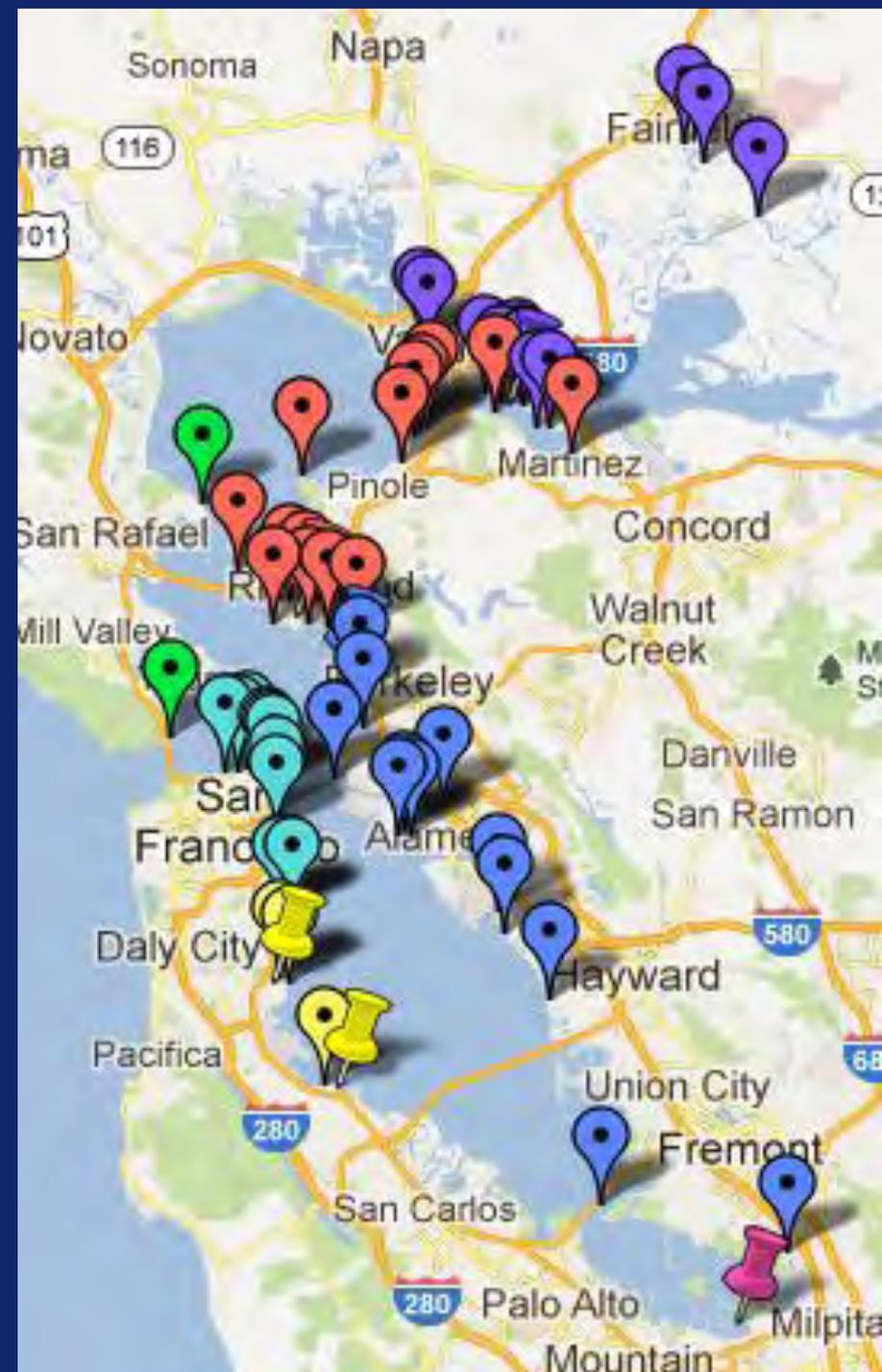


# SAN FRANCISCO BAY WARNING SIGN

- Posting by counties, cities, ports, parks, etc.
- After 7 months, signs up at 71/144 sites in 7 counties (~50% of sites)



Vallejo Promenade



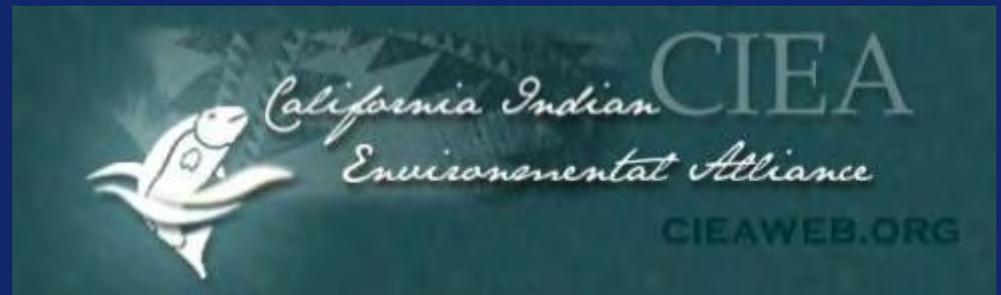
# SF BAY WARNING SIGN EVALUATION

- 37 anglers interviewed at 10 sites in 5 counties
- 92% had seen the sign (34/37)
- 62% could correctly remember “eat this” fish (21/34)
- 32% said sign would influence future decisions (11/34)



# FUNDED COMMUNITY GROUPS

- Four community groups awarded \$20,000 to \$25,000 grants





- Outreach and educational to Asian and Pacific Islanders through community partners, and at community events, fishing locations, clinics, etc.
- Conducted bilingual workshops on fish contamination issues to at-risk groups





- Waiting room survey and education at Women, Infants, and Children (WIC) clinic in Fruitvale (Oakland)
- Trained WIC clinic staff on fish contamination issues
- Developed and delivered “Making Healthy Fish Choices” curriculum over a 5-month period for WIC clients





- Interviews and education of fishermen at fishing locations in Bayview-Hunters Point (San Francisco)
- Community presentations (churches, community events) and workshops with women of childbearing age at health clinics and hospitals



*Photo: Winnie Seto - Aqua Vista Pier*



*Photo: Winnie Seto - Fishers at Pier 30*



- Delivered safe Bay fish lessons to six elementary school classes
- Trained students to give presentations to family members and school peers
- Trained students to interview and educate fishermen at fishing piers



# TRAINING AND TECHNICAL ASSISTANCE

- Training for funded groups and their project partners on fish contamination issues
- Training for funded groups on evaluation methods
- Technical assistance for funded groups:
  - Review of project materials (e.g., curriculum, questionnaires, educational materials)
  - Focus groups
  - Translation and printing
  - Developed evaluation tools
  - Conduct site visits
  - Conduct exit interviews (lessons learned, challenges, capacity building, sustainability, evaluation of CDPH)

# EVALUATION OF COMMUNITY PROJECTS

**Outputs**—Who participated?

- Number of participants
- Are participants consumers of SFB fish?
- Are consumers “at risk”? (women 18-45/children, moderate-high consumer, eats highly contaminated species)
- Are there other household members who eat SFB fish?

**Projects reached (at least) 5700+ SF Bay fish consumers and 17,000+ other household members**

# EVALUATION OF COMMUNITY PROJECTS

**Outcomes**—What changed as a result of the project?

- Increase in knowledge (specific):
  - *Which type or types of San Francisco Bay fish should not be eaten by anyone?*
    - a) Brown rockfish
    - b) Jacksmelt
    - c) Surfperches
    - d) Halibut
    - e) Don't know

**APA Family Support Services saw an increase in pre/post test scores among workshop attendees**

# EVALUATION OF COMMUNITY PROJECTS

**Outcomes**—What changed as a result of the project?

- Increase in knowledge (general):
  - *Has talking with me today increased your knowledge of the consumption advisory for San Francisco Bay?*
  - **93% agree**
- Access to information:
  - *Do you have the information you need to reduce your exposure to chemicals from eating San Francisco Bay fish?*
  - **89% agree**
- Intent to change:
  - *Do you think you are likely to avoid eating surfperches from the San Francisco Bay?*
  - **74% agree**

**Results from CIEA project among WIC clinic clients (N=47)**

# NEXT STEPS

- Two-year project completed
- Continuing to post signs
- Distributing educational materials
- Exploring funding options to continue
- Applying lessons learned to Delta

# PROJECT STAFF AND COLLABORATORS

- CDPH
  - Tivo Rojas-Cheatham
  - Ian Walker
  - Aida Negrón
  - Lauren Wohl-Sanchez
  - Kelsie Scruggs
  - Olga Martinez
- Margy Gassel, OEHHA
- Jan O'Hara and Naomi Feger, San Francisco Bay Regional Water Quality Control Board
- San Francisco Estuary Institute/ Aquatic Science Center
- Stakeholder Advisory Group
- Funded Groups
  - Marie Harrison and Rose Chan, Greenaction for Health and Environmental Justice
  - Farmmary Saephan, APA Family Support Services
  - Angela Berry-Philip, California Indian Environmental Alliance
  - Jonah Landor-Yamagata, Kids for the Bay
- Primary Project Funders
  - Bay Area Clean Water Agencies
  - Western States Petroleum Association
  - Bay Area Stormwater Management Agencies Association
  - US Environmental Protection Agency

# FOR MORE INFORMATION

- SFB Fish Project website: [www.sfei.org/sfbfp](http://www.sfei.org/sfbfp)
- Final project report: <http://sfei.org/content/documents-0>
- Educational materials and warning sign: <http://sfei.org/content/educational-materials>
- Educational video: <http://sfei.org/content/grantees-2011-2012>
- Join our SAG email list
- Contact information:
  - [alyce.ujihara@cdph.ca.gov](mailto:alyce.ujihara@cdph.ca.gov)
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Questions?

