State of California
California Governor's Office of Emergency Services

Japan Tsunami Marine Debris (JTMD) Concept of Operations

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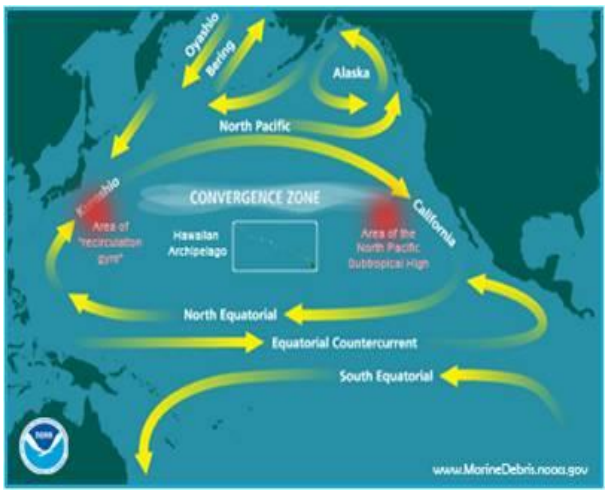
I. BACKGROUND

On March 11, 2011, (JST – Japan Standard Time), a magnitude 9.0 earthquake struck Japan. This was the fourth largest earthquake in the world and the largest in Japan since instrumental recordings began in 1900. The earthquake generated a tsunami observed over the Pacific Region. As the tsunami water mass receded from land, it washed much of what was in the inundation zone into the ocean. Heavier materials sank closer to shore, while buoyant materials went on to make up a debris field captured by satellite imagery and aerial photos off the waters surrounding Japan. Originally, the debris field was estimated at 1-2 million tons. A few days later the debris field was no longer visible by aerial observations indicating the debris disbursed into the ocean. Winds and ocean currents have scattered items into the massive expanse of the North Pacific Ocean as well.

The National Oceanic and Atmospheric Administration (NOAA) and the U.S. Navy are monitoring debris scattered into the North Pacific Ocean. NOAA and their partners (listed in Appendix B) are leading efforts to collect debris, asses the debris and its origin, and determine possible impacts to our natural resources and coasts.



Reference: NOAA www.MarineDebris.noaa.gov

Riding the general North Pacific current pattern, marine debris is washed ashore on a regular basis. The prediction by NOAA and the U.S. Navy is that tsunami debris could continue to collect on the California coast for some years. The amount of debris that may reach our coast is likely to be relatively benign and will only require disposal. The threat of "radioactive debris" has been discounted by scientists and has not been associated with any Japan Tsunami Marine Debris (JTMD) to date. However, there is a potential for "hazardous materials or invasive species" associated with debris as was the case in Oregon. This is continuously being monitored and assessed by NOAA, U.S. Environmental Protection Agency (U.S. EPA) and California Environmental Protection Agency (Cal EPA).

There remains a high level of public attention and concern regarding JTMD due to widespread unfamiliarity with the issue and public uncertainty about the potential impact to people using beaches or waterways. Early media reports hyper-focused on photographs of huge floating debris masses containing partially submerged homes and dangerous looking objects. The lack of unconfirmed information gave way to speculation that human remains, toxic materials and radioactive debris could land on state-side shores. This prompted an organized and very proactive public information effort on the part of state and federal agencies.

A workgroup of public information leaders led by NOAA, the USCG and US EPA are some of the federal members of the work group. There are members from the states of California, Oregon, Washington, Hawaii, and Alaska working together on public information. Additionally, Canada, Japan and Mexico are members of the workgroup and have regular inputs. The workgroup was formed to address many of the initial and on-going public concerns and misinformation by establishing a virtual Joint Information Center (Virtual JIC) online – http://www.disasterdebris.wordpress.com.

Further, in an effort to accurately inform the general public and to ensure for a coordinated response to the JTMD, California Governor's Office of Emergency Services (Cal OES) and key stakeholders have created this Concept of Operations (ConOps).

II. PURPOSE

This ConOps addresses the necessary preparedness, response and recovery actions that Cal OES must consider to support a coordinated local, state and federal effort regarding the JTMD situation. It provides information and guidance to the various different levels of government established under the Standardized Emergency Management System (SEMS) for this unique circumstance. The overall intent of this ConOps is to ensure effective and timely support to local government as JTMD reaches the California coast.

III. SCOPE

This ConOps pertains to both current and potential JTMD activities. It does not alter existing standard operating procedures or any roles and responsibilities under the SEMS and the National Incident Management System (NIMS). Existing plans and SEMS will be followed during response activities.

This ConOps identifies the agencies that have a role in monitoring the debris movement in the ocean; the handling of debris that comes ashore, and how a multiagency response will be organized.

IV. SITUATION AND ASSUMPTIONS

1. Existing local procedures and SEMS will be followed.

2. **Debris -** Marine debris is a continuous problem throughout the Pacific Region. Much of the debris on our coast line comes from land and not the ocean. For example, tons of debris is removed by U. S. Army Corps of Engineers (USACE) vessels every year from the San Francisco Bay. The source of this debris is usually the many rivers that feed into the bay.

3. **Tsunami Debris -** There is a large amount of uncertainty over exactly what is still floating, where it is located, where it will go, and when it will arrive. A possible "worst

case scenario" could be large pieces of boats, house parts, or other heavy objects that come ashore, and/or interfere with marine navigation. Ongoing efforts to locate the debris, categorize it, and monitor the debris is a priority of the California State JTMD Work Group. This Work Group is comprised of Cal OES subject matter experts and their external partners, whom are tasked with ensuring a unified and coordinated approach to the JTMD situation (see list of members in Appendix B).

4. **Radioactive Materials –** A consensus exists among scientists and experts that the presence of radioactive materials in the JTMD is highly unlikely for the following reasons:

   - The tsunami and the release of radiation were not simultaneous;
   - The leak of contaminated water from the reactor into the sea occurred days to weeks after the debris was washed out to sea. By the time the radioactive water leak developed, the debris was already in the ocean, miles away from the reactors, carried farther offshore by currents and wind; and,
   - Debris exposure to contaminated water, which also moves by currents, was unlikely to occur.

   Vessels coming into the Unites States from Japan are monitored for radiation, and readings have been below the level of concern.

   No radioactive materials have been found floating in the Pacific Ocean or have arrived on any Pacific Rim shoreline to date. Slightly elevated levels of radiation have been detected in some seaweed and in one type of fish (a species of tuna that travels from the waters near Japan to the waters near Mexico). It has been determined that the radiation levels found in both the seaweed and the fish were far below anything that would be harmful to humans.

5. **Hazardous Materials -** It is possible that other contaminants and/or hazardous materials, such as fuels and oil may be present in some of the debris and will have to be assessed as they are discovered. Pursuant to the Comprehensive Environmental Response, Compensations, and Liability Act (CERCLA), and the Emergency Planning and Community Right-to-Know Act (EPCRA), California has strict criteria and procedures for reporting all hazardous materials (paint cans, petroleum drums, etc.) California jurisdictions will use existing federal, state and local protocols for reporting, approaching and/or disposing of hazardous materials.

6. **Wildlife Impacts** – In California, the California Department of Fish and Game (Cal DFG) has lead authority in wildlife monitoring and protection. At this time there are no known threats or impacts to wildlife directly related to JTMD. One item identified in Alaska is insulation foam from Japanese buildings. This may present a problem as certain types of wildlife have been found to consume the foam.

7. **Invasive Species** – There is a strong possibility that some of the JTMD may be infested with invasive species; such was the case with the section of dock that landed on a State Park Beach in Oregon the week of June 4th 2012. Invasive species found in the Oregon case included: types of seaweed, plankton, and crustacean (specifically: small crabs); all determined to be indigenous to Japan.

This photo taken Wednesday, June 6, 2012, and supplied by the Oregon Department of Parks and Recreation, shows a large dock that washed ashore early Tuesday on Agate Beach, a mile north of Newport, Ore. The nearly 70-foot-long dock was torn loose from a fishing port in northern Japan by last year's tsunami and drifted across thousands of miles of Pacific Ocean, a Japanese Consulate official said Wednesday.(AP Photo/Oregon Parks and Recreation.)

The invasive species notification process will follow the protocols put forth by California Department of Fish and Game (Cal DFG), Invasive Species Unit, California Environmental Protection Agency (Cal EPA) and California Department of Food and Agriculture (CDFA). There are local procedures in place for contacting these agencies. Any response to an invasive species incident will be lead by Cal DFG using Chapter 4 of their California Aquatic Invasive Species Rapid Response Fund - An Economic Evaluation Report (June 30, 2011). Chapter 4 provides details relating to the California Aquatic Invasive Species Management Plan (CAISMP).

The plan was prepared by Cal DFG and released in 2008. The overall goal of the CAISMP is to identify steps to be taken to minimize the impacts of Aquatic Invasive Species (AIS), with detailed action to eradicate, contain, or at lease slow the spread of AIS, as appropriate.

The plan includes management actions for addressing AIS that threaten the state and identifies eight objectives to address those threats. The objectives include:

- coordination and collaboration;
- prevention;
- early detection and monitoring;
- rapid response and eradication;
- long-term control and management;
- education and outreach;
- research; and,
- laws and regulation.

V. CONCEPT OF OPERATIONS

This JTMD ConOps has three phases: a preparedness phase (including monitoring and outreach efforts), a response phase, and, a recovery phase.

1. Preparedness Phase:

A. Monitoring - California has hundreds of miles of coast line, much of it is remote. Because of the projected duration of debris potentially landing on California's coast line (perhaps years), monitoring and recovery is focused on the following:

a. local citizens;
b. volunteers;
c. local officials;
d. emergency service personnel; and,
e. state, and federal agencies.

Note: Guidance has been developed by NOAA, U.S. EPA, and the California Coastal Commission to assist those who encounter potential JTMD. (See Appendices C, D, and G)

B. Outreach and Education - The Cal OES Office of Public and Crisis Communications, working with Cal OES Regions, local Public Information Officers (PIOs), and other participants of the multi-agency JTMD Joint Information Center (JIC) have developed information to educate the public regarding marine debris, and what they can do to assist in the notification/clean-up efforts. The primary source for providing information for public consumption is: ***The Japan Tsunami Debris Joint Information Center*** http://disasterdebris.wordpress.com.

2. Response Phase:

A. General Public Actions and Reporting - The general public can remove debris themselves using guidance procedures as developed by NOAA (See Appendix G). The public is asked to report suspected debris as a direct result from the Japan tsunami, to DisasterDebris@noaa.gov with as much information as possible (including the location, date and time of sighting, any photos, and any relevant descriptions).

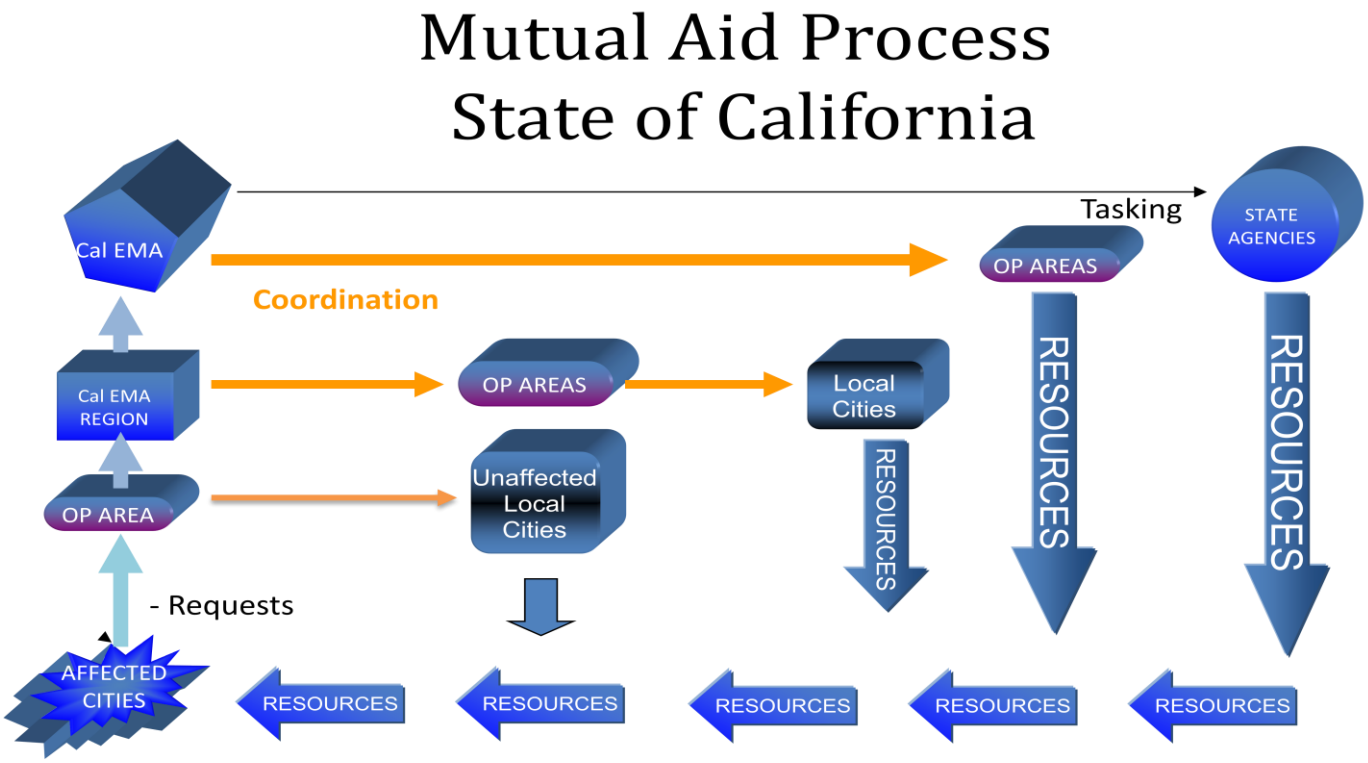
B. Local Response (Operational Area) - If the situation requires first responder activities, the appropriate jurisdiction (State/Federal Parks, Owner of a Private Beach, etc.) will be the lead. They will handle the response per their established procedures and protocols as described in applicable plan(s) for hazardous material emergencies. The local authorities are responsible for calling for assistance or mutual aid resources as needed. Should a debris item be identified being from Japan, the local response agency will report it to NOAA at DisasterDebris@noaa.gov.

As mentioned on Page 5, Section 5, pursuant to CERCLA and EPCRA, responsible parties are required to report hazardous material releases. Cal EMA's California State Warning Center (CSWC) is the recipient of such reports.

C. State/Federal Response -

a. California Volunteers (Cal Volunteers) is the lead state agency that is responsible to coordinate volunteer groups in disaster response activities. Cal Volunteers is coordinating with the California Coastal Commission on using their Adopt-A-Beach and Coastal Cleanup Day. The volunteers will not be responsible for disposal of large debris items. This effort will be subject to NOAA's debris removal procedures or California State debris removal procedures. NOAA provided official debris disposal guidelines that have been distributed to the general public through the outreach and education efforts.
b. If there are any resources necessary to support local government, those resources will be requested through the established SEMS process as outlined in Diagram 1.

Diagram 1



3. Recovery Phase –

A. Cal OES Recovery Branch, Debris Management Unit, is working with other agencies in monitoring debris on California's shorelines. If necessary, any local or state proclamations/declarations or emergency requests for activation of California Disaster Assistance Act (CDAA) will be requested according to pre-established protocols.

B. Funding - At this time there is no state funding identified to support JTMD activities and federal funding (Coordination between Japan and the United States) is pending to possibly support debris removal efforts. Expenses for disposal of debris will be the responsibility of the owners or managers of the shoreline in which the ocean debris lands. As with any disaster situation, local government should take any actions necessary to protect life and property, and to mitigate the situation, and seek necessary support and consider state assistance.

VI. ROLES AND RESPONSIBILITIES

1. Operational Areas (OAs) -

A. Be aware of the potential for JTMD to be found on coastal lands.
B. Prepare to execute routine response procedures, if needed. If debris is suspected to be from Japan, then send a JTMD report filed, via email, to DisasterDebris@noaa.gov with as much information as possible (including the location, date and time of sighting, any photos, and any relevant descriptions).
C. Under SEMS, the Cal OES Regional Duty Officer should be contacted through the CSWC when additional support may be required, or for assistance in coordinating response activities. The Duty Officer should contact the Emergency Services Coordinator assigned to the county as well.
D. Activate Emergency Operations Center, as appropriate.
E. Share any JTMD specific response plan to: DisasterDebris@noaa.gov.

2. Cal OES Regions -

A. Monitor the situation (e.g., via the media and the OAs) to be aware of the potential for JTMD to be found on coastal lands.
B. Inform OAs of potential JTMD situation that result from higher level monitoring.
C. Be prepared to respond to any JTMD situation resource request.
D. Provide assistance should an OA deem it necessary to develop a local plan or Standard Operating Procedure (SOP) for a JTMD situation. The Cal OES Debris Management Unit should be part of the development.
E. Keep Cal OES Warning Center and State Operations Center staff informed of any incident response.

3. JTMD Work Group – This group is comprised of Cal OES subject matter experts (i.e. Ports and Harbors, Debris Management, Hazardous Materials, etc.) and external parties. See Appendix B for the complete list of members. The purpose of this group is to:

A. Write a ConOps;
B. Conduct Public Information and Outreach and,
C. Support OA's in overall JTMD activities specific to California.

4. This Work Group meets on a regular basis to ensure a unified and coordinated effort and to provide situational awareness. For example, the Work Group provided recommended protocols for Tsunami Debris Contamination Assessment - see Appendix C). In addition, this group:

A. Meets regularly to monitor, assess and report out on the overall JTMD situation. B. Provides technical expertise on any Cal OES plans, outreach documents or operational decisions.
C. Works closely with their external JTMD counterparts.
D. Works directly with any OA that needs assistance in starting or completing local planning or SOPs for the JTMD situation.
E. Keeps Cal OES leadership informed of activities and incidents.

5. Pacific Area JTMD Work Group - ensures that there is a unified and coordinated "International" approach to the JTMD situation. Primary responsibility is public information sharing; second, is sharing planning documents; and thirdly, is a central connection point for all participants to convene if a situation or event has to be addressed by the Pacific Area JTMD Work Group.

   The Pacific Area JTMD Work Group, led by NOAA, is the official lead group that coordinates with the following: Washington D.C., the Canadian Government, Japanese Government, Mexican Government, the North American Aerospace Defense Command (NORAD), Maritime Alert Unit, U. S. Coast Guard (USCG), U. S. EPA Regions 9 & 10, U. S. Navy (USN), multiple NOAA Units, Canadian Coast Guard (CCG), Alaska, Hawaii, Washington, Oregon, California, and US Territories and multiple federal and state level agencies, including the Cal OES Ports and Harbors Representative (Lead for California), and the Cal OES Office of Public Information Representative.

   All members are invited to participate in periodic Pacific Area JTMD conference calls. Cal OES Pacific Area JTMD members attend, take notes, and distribute meeting minutes/materials to the Cal OES JTMD Work Group Members. Materials from the Pacific Area JTMD meetings will be distributed to OAs by Cal OES through the Cal OES Regional Staff.

6. Recovery – Cal OES Recovery Branch, Debris Management Unit, is lead for guidance on debris removal planning and protocols and to provide technical assistance to local and state entities. The primary mission of the Unit is to assist the OAs, and other California State Partners with drafting local plans for disposal of ocean debris. Most OAs and organizations already have some form of planning for disposal of items that may arrive on their shorelines.

VII. APPENDICES

A. JTMD Management Resources
B. JTMD Work Group Membership
C. Guidelines for Japan Tsunami Marine Debris Contamination Assessment (EPA)
D. Volunteer Guidance
E. Cal OES Ports and Harbors Partnerships
F. Suspected Japan Tsunami Marine Debris Report Sheet/Guidelines by Type of Debris
G. Official NOAA General Guidelines (not in original format)
H. Additional Web Resources

APPENDIX A

State Management Resources

California Governor's Office of Emergency Services (Cal OES)	Cal OES has the delegated authority by the Governor to implement the Emergency Services Act (ESA) and perform executive functions assigned by the Governor to support and enhance all phases of emergency management. State-Level Emergency Coordination: During a state of emergency, or a local emergency, the Cal OES coordinates the emergency activities of all state agencies in connection with such emergency and has the authority to use any state government resource to fulfill mutual aid requests or to support emergency operations. When needed the State Operations Center (SOC) and Regional Emergency Operations Centers (REOCs) are activated to coordinate emergency management information and resources. State-Federal Coordination**:** When federal assistance is required, Cal OES coordinates requests for assistance
Cal OES Recovery Branch Debris Management Unit	**Resources:** Provides technical assistance, oversight and information regarding debris management operations, resources and assistance with debris management plans.
California Environmental Protection Agency (Cal EPA)	Cal EPA serves as the lead agency for coordinating emergency activities related to hazardous materials. The agency may assign primary and support roles to those departments within the agency that have the authorities, capabilities and resources necessary to meet emergency needs.
Air Resources Board	Promotes and protects public health, welfare and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the State. **Resources:** Provides current and previous ambient air quality and meteorological data and coordinates air pollution emergency planning with various agencies. Provides technical resources to address air issues; examine air contaminants and identify consequences of air incidents.

	Supplies: portable air monitoring stations, air pollution specialists and meteorologists.
Dept of Toxic Substances Control	Protects the public health and the environment from hazardous materials. **Resources:** Provides lists of health agencies, hazardous materials teams and qualified contractors to handle hazardous materials removal, transportation and disposal and technical resources and coordinates with law enforcement and local governments related to hazardous materials incidents, including assessment, containment, mitigation and removal.
California Department of Resources Recycling and Recovery	Cal Recycle is the state's leading authority on recycling, waste reduction, and product reuse. **Resources:** Maintains contact lists of hazardous waste generators, haulers/handlers and enforcement agencies. Coordinates Integrated Waste Management Disaster Response Plans with counties, cities, Cal OES, and other public agencies.
Office of Environmental Health Hazard Assessment	Protects and enhances public health and the environment by scientific evaluation of risks posed by hazardous substances. **Resources:** Coordinates the provision of timely and accurate health effects information. Provides health effects information to emergency managers, following hazardous material releases.
State Water Resources Control Board	Develops and enforces water quality objectives and implementation plans that will best protect the State's waters. **Resources:** Provides lists of hazardous waste disposal sites, technical personnel and advice related to the consequences of a hazardous materials incident on water resources, conducts water sampling, monitoring, analyses and assessment activities and guidance on options concerning diversion, containment, treatment and temporary storage of hazardous waste. Provides: environmental technical staff with expertise concerning the recovery measures taken after

	a hazardous material incident on water resources. Provides water information, sampling, water technology/equipment and advice to the public during an emergency and/or a hazardous materials incident related to water.
California Natural Resources Agency	The agency addresses natural resource issues ranging from conservation, water, fish and game, forestry, parks, energy, coastal, marine and landscape. The agency may assign primary and support roles to those departments within the agency that have the authorities, capabilities and resources necessary to meet emergency needs.
California Coastal Commission	Protects, conserves, restores, and enhances environmental and human-based resources of the California coast and ocean. Has managed NOAA grant funding in the past. **Resources:** Has an "Adopt a Beach" program throughout the state and is regularly monitoring and cleaning up beaches. The California Coastal Commission is also engaged in the JTMD situation and passing information along to their many volunteers.
California Conservation Corps	The State Emergency Plan identifies the California Conservation Corps as supporting 16 of the 17 California Emergency Functions that may be assigned during a disaster. **Resources:** Provides crews, and/or equipment to clear debris and support emergency operations. Crews to assist with the restoration of property.
California Department of Conservation	Provides services and information that promote environmental health, economic vitality, informed land-use decisions and sound management of our State's natural resources. **Resources:** Provides advice on oil spills and responds accordingly to the incident. Provides technical expertise and responds to oil spill, gas, and/or geothermal incidents.

California Department of Fish and Game (Cal DFG)	Cal DFG maintains native fish, wildlife, plant species and natural communities for their intrinsic and ecological value and their benefits to people. **Resources:** Provides statewide incident management and technical specialist positions and/or teams for marine or inland oil/hazmat incidents, staff to assess natural resource damages and provide wildlife rehabilitation and technical expertise in habitat conservation for wildlife affected by an emergency or the response to the emergency. The Cal DFG has an Invasive Species Unit, that responds to all potential cases of invasive species. The Invasive Species Unit is part of the JTMD Work Group.
Office of Spill Prevention and Response (OSPR)	The mission of the OSPR is to provide best achievable protection of California's natural resources by preventing, preparing for, and responding to spills of oil and other deleterious materials, and through restoring and enhancing affected resources **Resources:** Responds to reports of oil and hazardous materials in primarily marine zones. OSPR can dispose of the substances using a variety of resources. OSPR will respond to both reports of oil and hazardous materials in the water. OSPR will coordinate with Cal EPA, CDFA and other involved parties.
Dept of Forestry & Fire Protection (CalFire)	Serves and safeguards the people and protects the property and resources of California. **Resources:** Provides: teams, vehicles, and aircraft (fixed and rotor wing) for patrol. Offers SEMS qualified personnel for all SEMS levels and positions, logistical support, finance personnel for cost tracking, procurement, collection and reimbursement. Provides emergency fire, SEMS and other associated emergency response training and planning assistance. Offers assistance with situational status analysis. Provides hazardous materials and other incidents response training and planning assistance, technical expertise in trained environmental assessment personnel and certified hazardous materials personnel.

	Provides technical expertise on emergency response planning and mitigation for spills and other incidents.
California Department of Water Resources	Manages the water resources of California in cooperation with other agencies. **Resources:** Provides engineering advice and services and technical resources. Monitors conditions and provide warning to CalEMA on developing weather, stream flow, flooding, dam performance, or other potential emergencies.
California Department of Food and Agriculture (CDFA)	Once of the primary mandates of CDFA is to protect against invasion of exotic pests and diseases. CDFA will work with Cal DFG, Invasive Species Unit and Cal EPA on invasive species issues and provide guidance regarding efforts to keep invasive species out of the state, find invasions and take steps to eradicate incipient populations of undesirable species. **Resources:** A draft California Aquatic Invasive Species Management Plan.
California Volunteers	Responsible for the coordination of volunteer activities related to disaster response and recovery, including necessary training, equipment, and transportation provisions. Cal Volunteers is the lead agency for coordinating all volunteer responses for the JTMD situation. Cal Volunteers is working with other California volunteer organizations regarding JTMD. **Resources:** Cal Volunteers administers California's Citizen Corps programs including: Disaster Corps, Community Emergency Response Teams (CERT), Medical Reserve Corps, Volunteers in Police Service, Fire Corps and Neighborhood Watch.

Federal Management Resources

Federal Emergency Management Agency (FEMA)	Provides funding for and debris management teams to assist with debris removal operations, under certain circumstances.
Natural Resources Conservation (NRCS)	Provides expertise in soil science and leadership for Service soil surveys.
National Park Service (NPS)	The National Park Service includes several parks along the Pacific from Channel Islands National Park in the south to Redwood National Park in the north. NPS has a direct link to the public through the Visitor Centers at each park and often park visitors are the first to report marine debris. The parks have an extensive public information system and outreach program. Park personnel and volunteers are also monitoring marine debris at multiple designated locations along the California coast and are represented on the Pacific Area JTMD Work Group. NPS operations include response capabilities, including marine vessels.
National Oceanic and Atmospheric Agency (NOAA)	NOAA is the lead federal agency for marine debris and supports research, prevention, and removal of debris. NOAA is coordinating the overall JTMD response, working with Federal, State, and Local partners on planning, data collection and assessment, and reduction of possible impacts to natural resources and coastal communities. NOAA has been holding biweekly teleconferences for Local, State and Federal agencies for information sharing and is disseminating information to the public via their website. NOAA is using computer models to simulate the movement of the debris since the time of the event, collecting at-sea observations from aircraft, satellite, and vessels, and collecting and logging reports of potential JTMD sightings through the disasterdebris@noaa.gov email address. In addition, in coordination with the State of California, NOAA has multiple official monitoring and assessment sites along the California Coast where various groups, including non-profit, volunteer-based organizations, are conducting regular monitoring. Finally, NOAA can provide trajectory modeling support for large at-sea debris sightings.

U.S. Environmental Protection Agency (U.S. EPA)	Provides technical assistance regarding debris removal operations and can conduct removals if funding is identified. The US EPA and the California Environmental Protection Agency (Cal EPA) have published additional guidelines for hazardous materials handling and are available in this document. These handling protocols characterize local HAZMAT procedures and protocols that exist in every county that has direct access to the Pacific Ocean.
U.S. Army Corps of Engineers (USACE)	Provides technical assistance and/or staff regarding USACE debris removal operations. Can conduct and/or contract debris removal operations upon authorization from FEMA.

APPENDIX B

JTMD Work Group Membership

The JTMD Work Group is comprised of specialists and subject matter experts in their fields.

Cal OES Members:

Ports and Harbors Emergency Services Coordinator (ESC) Lead
Earthquake and Tsunami Unit Representative
Fire and Rescue Branch Representative
Fire and Rescue Branch – HAZMAT Unit Representative
Law Enforcement Branch Representative
Regional Administrators
Deputy Regional Administrators
Regional ESCs (Two from each Region)
Public Information Office Representative
Radiological Preparedness Unit Representative
Recovery Branch Representative – Debris Management

Primary External Members:

Japanese Consul General (San Francisco and Los Angeles)
NOAA
USCG
US EPA
Cal EPA
Cal DFG, Invasive Species Unit
National Park Service
California Department of Parks and Recreation
US Health and Human Services Agency
California Health and Human Services Agency
Cal Volunteers
Non-Government Organizations (NGO) – consulted as needed

APPENDIX C

Guidelines for Japan Tsunami Marine Debris Contamination Assessment

Developed by the California Tsunami Debris Multiagency Advisory Coordination Group and the USEPA

Goal: Provide technical support to Local, State and Federal agencies tasked with identifying potentially contaminated marine debris generated by the Japan Tsunami of March 2011.

Role of Response Organizations: It will be difficult to differentiate between marine debris from the tsunami and other debris that commonly affects the West Coast shoreline. When responding to reports of unusual or suspect marine debris off shore or on the shoreline, any responder or response organization should follow standard hazard assessment procedures.

There is an extremely low likelihood that any tsunami debris from Japan is radioactive since the tsunami struck days before the Fukushima-Daiichi power plant incident occurred and the debris was likely carried out to sea before ever becoming contaminated. In addition, the breakup of the debris and exposure to the environment over long ocean distances combined with half life degradation of the isotopes will likely have reduced any radioactive contamination to very low levels, below any that would pose a human health threat.

Basic Procedure: It is a common occurrence for marine debris from a variety of sources to wash up on our beaches. Responders should follow their standard operating procedure for assessing and responding to any suspected contaminated debris they may find. The following assessment steps summarize the basic response procedures:

- Any response team called out to evaluate shoreline debris should conduct an upwind walking/screening survey using normal procedures and not handle anything appearing to be hazardous unless wearing proper personal protective equipment after the initial survey.

- Teams approaching debris should be actively monitoring for volatile organic compounds, oxygen levels, and lower explosive limit using a combination gas meter.

- Teams should also screen for potential radiation using a radiation survey meter that is capable of measuring microroentgen per/hr or microrem per/hr (mR/hr). Representative background readings should be collected by response teams using available instruments.* Background should be determined on the survey day in a known uncontaminated area similar in topography to the area where debris could be observed (note: background radiation readings will vary depending on local geology and weather and are typically lower on the water than on the shoreline).

- During a beached or floating debris survey event, a response team identifies radiation contamination equal to or greater than two (2) mR/hr, or at a lower value subject to the agency's discretion, the team should (1) consider evaluating the debris, and (2) consider requesting assistance from a radiation health expert from their home office or a state or federal agency. If radiation measurements equal or exceed 2mR/hr, then a radioactive source is likely present. Further investigation should not be conducted without determining whether the responding agency has the equipment and personnel to fully characterize the source and ensuring that all health and safety measures are implemented, including a dose management program.

- Make all required local, state and federal notifications, including the National Response Center – 800-424-8802.

- For additional information on California hazmat spill/release reporting, see:

  http://www.calema.ca.gov/HazardousMaterials/Pages/Spill-Release-Reporting.aspx

Additionally, if Japan tsunami marine debris is identified please report that discovery to the NOAA Marine Debris Program at: DisasterDebris@noaa.gov

* Radiation survey meters differ in their measurement outputs (readings). Some meters show their measurements in Roentgens or Roentgens/hour (e.g., Micro R meters) and others, in rems or rems/hour (e.g., microrem meters) for gamma radiation. These metrics are roughly equivalent (i.e., 1 Roentgen = 1 rem) and differ only in the detector design.

The EPA Region 9 office recommends that field personnel report the meter readings in whatever units are printed on the face of the meter, as they have always done, and rely on the radiation experts back in their home office (or other state or federal agencies) to interpret the measurements and issue their agencies' findings.

APPENDIX D

CALIFORNIA COASTAL COMMISSION

Japan Tsunami Marine Debris Volunteer Debris Removal Guidelines

Developed by the California Coastal Commission in support of the California Tsunami Marine Debris Multiagency Support Group (MASG).

Goal: Provide technical support to local, state, and federal agencies and non-profit volunteer organizations tasked with removing debris, including potentially contaminated marine debris, and marine debris generated by the Japan tsunami of March 2011.

Role of Response Organizations: When conducting any beach cleanup, all responding agencies and organizations should follow basic safety precautions, outlined below, under the assumption that the debris to be removed may potentially include items containing hazardous materials.

According to recent modeling results, faster moving items related to the Japan tsunami may have already been deposited on beaches along the West Coast (none confirmed in California as JTMD), British Columbia, and Alaska. Recent sightings of confirmed debris in Alaska agree with these projections. People who visit the coast and depend on the ocean are understandably concerned. We encourage caution and awareness; but there is no reason to stop fishing or avoid the coast. It is important to keep in mind that there is an extremely low likelihood that any tsunami debris from Japan is radioactive since the tsunami struck days before the Fukushima-Daiichi power plant incident occurred and the debris was likely carried out to sea before ever becoming contaminated. In addition, the tsunami affected an area of over 200 square miles, while the Fukushima-Daiichi plant was located in a very small portion of this area; thus the vast majority of the debris that entered the Pacific originated from areas far removed from the site of the nuclear plant. Despite these facts, incidences of potentially radioactive and/or hazardous debris items on U.S. shores are still possible as the tsunami debris may have contained everyday radiation and hazardous materials sources, such as household hazardous waste or contaminated debris from hospitals or other locations.

Basic Procedure: Volunteers who are performing beach cleanups, and the organizations or agencies that are managing those volunteers, should always keep safety as a foremost concern in their minds. A few basic guidelines can help avoid any unintentional injury or distress:

1. Volunteers should wear a glove on the hand with which they are picking up trash. Volunteers should also wear closed-toe shoes (no flip-flops or bare feet) at all times and have clothing and sun-block to protect from the sun.

2. Don't touch or pick up dead animals, or attempt to move injured animals. Instead, make the cleanup organizer aware of the animals and where they are located. The Cleanup organizer will contact the responsible authorities.

3. Volunteers should never pick up syringes, needles, or any hazardous objects. Mark the area and notify the cleanup organizer or local official of the hazardous item's location.

4. Always stay in teams of at least two.

5. Be cautious and aware of sensitive habitat areas (i.e. sand dunes).

6. Avoid over-exertion, sunburn, heat exhaustion, and dehydration. When in doubt, come in early.

7. All children under 14 should be supervised by an adult at all times.

8. Volunteers should not lift anything too heavy; when in doubt, don't try!

9. Do not go near any suspected hazardous materials (e.g., propane tanks, oil or chemical drums, etc.). If debris is spotted that a volunteer suspects to be hazardous or potentially hazardous, the debris should be left untouched and the cleanup organizer should be immediately informed. The local fire/hazmat department, environmental health agency or the Coast Guard National Response Center (800-424-8802) should be notified and respond as appropriate. While it is highly unlikely that marine debris will be radioactive and hazardous marine debris items such as drums or chemical canisters are uncommon, it is important that marine debris that is suspected as being hazardous be assessed and removed by trained professionals who can ensure the public's safety.

Additionally, if Japan tsunami marine debris is identified please report that discovery to the NOAA Marine Debris Program at: DisasterDebris@noaa.gov.

APPENDIX E

Cal OES Ports and Harbors Partnerships

Cal OES Ports and Harbors
The Cal OES Ports and Harbors Representative represents Cal OES, the JTMD Work Group and is the primary member of the Pacific Area JTMD Work Group.

California Department of Boating & Waterways
The California Department of Boating and Waterways is the State's direct link to the recreational boating community, local marinas and harbors. Often times they represent the private mariners of the State of California on special interest items or matters of importance. The Department has a successful public information system and outreach program.

California Marine Exchanges
The Marine Exchanges are located in all California ports and are a clearing house for the majority of marine information, such as vessel scheduling, movement, tracking and oceanic conditions. The Marine Exchanges have direct communications with mariners.

California Maritime Academy
Cal Maritime sponsors courses, seminars, workshops and exercises for oceanic scenarios, including maritime contingency planning and maritime response.

California National Guard 95th Civil Support Team (CNG CST) Specialized HAZMAT Unit
The 95th CST is available for HAZMAT planning and response. Cal OES Ports and Harbors Representative has an ongoing dialogue with the Unit's Planning Officers for operational support or response, if necessary during the JTMD situation.

Canadian Coast Guard (CCG)
The CCG has a similar mission and assets as the USCG. The USCG and the CCG are working jointly on the JTMD Situation.

Japanese Consul General
Regular meetings are held with the Japanese Consul General and staff and include updates from the Japanese Government. Japanese Research Teams working in the United States and Pacific Rim with their US Counterparts. There is a return of personal effects program coordinated with Cal OES and NOAA. The Japanese Consul General and staff will participate in the reviewing the JTMD ConOps.

Marine Sanctuaries (On Shore/Off Shore)
The governing organizations and groups are monitoring the JTMD situation. The organizations are also involved in planning and attending meetings concerning JTMD. The sanctuaries organizations are in continuous contact with the Pacific Area JTMD Work Group and the JTMD Work Group.

National Oceanic Atmospheric Agency (NOAA)
The NOAA Marine Debris Program is the coordination lead for the JTMD situation. Currently, NOAA has a representative assigned to Cal OES and the USCG in California just for JTMD coordination and expertise. NOAA leads the Pacific Area JTMD Work Group, bi-monthly meetings. NOAA maintains direct contact with JTMD Work Group Members, particularly with the Cal OES Ports and Harbors ESC Lead. NOAA provides oceanic modeling for debris tracking, and is coordinating other ocean and shoreline monitoring. NOAA has staff members assigned throughout the Pacific Area to monitor the JTMD situation. NOAA hosts the official email address for reporting and recording debris. NOAA is engaged in response operations. NOAA is a large contributor to public information materials.

Neptune Coalition (Marine Law Enforcement)
The Neptune Coalition consists of marine law enforcement units that are coordinated with the USCG. The Neptune Coalition monitors the waterways, bays and open waters regularly on routine patrols and emergency responses. The Neptune Coalition is part of the JTMD Work Group.

North American Aerospace Defense Command (NORAD), Department of Defense (DOD) - Maritime Alert Unit
The NORAD Maritime Alert Unit is a member of the Pacific Area JTMD Work Group. This Unit is responsible for the overall protection and detection of maritime conditions, threats or hazards for all of North America. They also have global and space reach.

Ocean Protection Council (OPC) – Marine Debris Steering Committee
The OPC leads a Marine Debris Steering Committee that addresses the many issues around the current ocean debris situation. The Committee has turned their focus to the JTMD situation and addressing the fact that the ocean debris problem has been increased due to JTMD situation. The forward prong of the Committee is public awareness and education. Some of the key members of the Marine Debris Steering Committee are: State Lands Commission, Cal Recycle, CA Department of Boating and Waterways, State Water Resources, CA Coastal Commission, Cal EPA and others.

US Army Corps of Engineers (USACE)
The USACE is contracted by the USCG to clear navigational hazards. The USACE also does other large scale debris removal and dredging, mostly to maintain depth and safety to shipping lanes.

United States Coast Guard (USCG), District 11 (D-11) - Headquarters
USCG D-11 oversees all US Coast Guard Operations in California through four Sectors located in Humboldt Bay, San Francisco, Los Angeles and San Diego and reports directly to USCG Headquarters, Washington D.C. There is direct communication with the Pacific Area USCG Command, including the Pacific Strike Force. There also is direct communication with the Canadian Coast Guard and Japanese

Coast Guard. The USCG ensures safety and security for all mariners and may coordinate debris removal of afloat items at sea that are hazards to navigation.

USCG Interagency Operations Centers (IOC)
The Command and Control Centers on USCG Bases, which have state of the art monitoring, controlling, tracking and responding to West Coast and Pacific Ocean situations. The Cal OES Ports and Harbors Rep is assigned as a staff member to the IOC at Sector San Francisco.

USCG Marine Transportation System Recovery Unit (MTSRU)
The MTSRU addresses shipping disruptions, diversions or contingencies involving ocean going vessels and status of seaport operations. The Unit has two leaders: the USCG Force Com/Planning Officer who is responsible for marine transportation and vessel status and the second leader, the Cal OES Ports and Harbors Rep who is responsible for port status and analysis, contingency operations, labor forces and inter modal systems. The MTSRU is a member of the Pacific Area JTMD Work Group.

USCG – US Navy - Port Readiness Unit (Threat Analysis)
The Unit monitors all threats to the Maritime Community, including open seas. The Unit also utilizes many external partners to accomplish this mission from local Marine Law Enforcement Units to United States Navy 3rd Fleet Resources. Cal OES Ports and Harbors Program and Cal OES Law Enforcement Division are members of this Group/Unit.

United States Navy, 3rd Fleet
In the last several years the 3rd Fleet has engaged the civilian community by planning and drilling to respond to disasters in California. The CalOES Ports and Harbors Representative has been involved with planning for naval response in California. Planning and exercises have been coordinated with the Defense Coordination Officer (DCO), Unified Coordination Group (UCG), Joint Field Office (JFO) and the State of California.

United States Navy Salvage Operations (SUPSAV)
SUPSAV is the U.S. Navy's SALVOR Unit (Marine Salvage). Assets, if in theater can be available for civilian response. SUPSAV has also participated in planning and drills with civilian counterparts. SUPSAV works routinely with the MTSRU.

US Dept of Transportation – Maritime Administration (US DOT – MARAD)
US DOT MARAD is responsible for issuing ocean condition advisories to mariners, and its focus is safety, security and welfare of the Maritime Community. MARAD also has pre-staged assets located throughout the State of California. The Cal OES Ports and Harbors Representative and MARAD have strategies for the possible use of MARAD Vessels as response vessels or vessels of opportunity. MARAD has issued advisories for JTMD.

APPENDIX F

Job Aid for Operational Area Public Safety Answering Points Regarding Suspected Japan Tsunami Marine Debris

If a report of an item found along the coastline is received and appears to be of Japanese origin then a notification must be made via email to the National Oceanic and Atmospheric Administration.

Suspected Japan Tsunami Marine Debris Report

Email Address: DisasterDebris@noaa.gov

Report will include:

1. Relevant description:
2. Location:
3. Date and time item was found:
4. Photos
5. Any other details deemed appropriate

Suspected Japan Tsunami Marine Debris Guidelines by Debris Type

Type of Debris	Examples	Recommended Actions for Public	Public Safety Answering Points Action
Litter and other typical marine debris items	Plastic bottles, aluminum cans, buoys, Styrofoam. Common marine debris.	Safely remove the debris and recycle as much of it as possible.	
Potential hazardous materials (HAZMAT)	Oil or chemical drums, gas cans, propane tanks (check for markings on the item that may denote that there's some kind of chemical or substance that may be harmful)	Do not touch the item or attempt to move it.	Report to NOAA Follow local HAZMAT procedures Call California State Warning Center (Cal OES) 1-800-852-7550 Call National Response Center 1-800-424-8802
Derelict vessel or other large debris item(s) afloat or in navigation lanes.	Fishing boat, shipping containers, other large containers	Do not attempt to move or remove vessels.	Report to NOAA Contact USCG at 510-437-3701
Mementos or possessions	Items appearing to be of personal or monetary value. Items with unique identifiers, names, or markings.	Once report is made to NOAA, NOAA will work to determine if it can be returned to Japan.	Report to NOAA
Human Remains	Body parts or cadavers.	Do not touch or attempt to move them.	Report to NOAA Follow local Coroner instructions

APPENDIX G

NOAA's
General Guidance

a. Be safe: Use common sense and follow general safety guidelines. If you don't know what an item is, don't touch it. If it appears hazardous, contact the appropriate authorities.

b. Marine debris items or significant accumulations potentially related to the tsunami need to be reported to DisasterDebris@noaa.gov with as much information as possible (including its location, the date and time you found it, photos, and any relevant descriptions).

c. It is important to remember that not all debris found on U.S. shorelines is from Japan, so please use your discretion when reporting items.

Guidelines by Debris Type

Type of Debris	Examples	Recommended Actions for Public
Litter and other typical marine debris items	Plastic bottles, aluminum cans, buoys, Styrofoam. Common marine debris types vary by location.	Safely remove the debris and recycle as much of it as possible.
Potential hazardous materials (HAZMAT)	Oil or chemical drums, gas cans, propane tanks (check for markings on the item that may denote that there's some kind of chemical or substance that may be harmful to humans or animals).	Contact your authorities and report the item with as much information as possible. Do not touch the item or attempt to move it. (*1)
Derelict vessel or other large debris item(s) afloat or in navigation lanes.	Fishing vessels, shipping containers, other large containers.	Do not attempt to move or remove vessels. Contact USCG. (*2)
Mementos or possessions	Items appearing to be of personal or monetary value. Items with unique identifiers, names, or markings.	NOAA and Cal OES will work with local Japan consulates to determine if they can help return the item to Japan.
Human Remains	Body parts or cadavers.	Contact local authorities, call 911 and report what you observed. Do not touch or attempt to move them.

For more information visit: www.marinedebris.noaa.gov

(*1) HAZMAT Reporting Procedures:

Call 9-1-1
Call California State Warning Center (Cal OES) 1-800-852-7550 (For spill reports only)
Call National Response Center 1-800-424-8802

(*2) USCG Contact Information

U.S. Coast Guard National Response Center
Toll Free: 1-800-424-8802
Online: www.nrc.uscg.mil/nrchp.html

U.S. Coast Guard Pacific Area Command
510-437-3701

Nearest USCGTG Sector Command Center can be contacted via VHF-FM Ch 16 or 2152 MHz

APPENDIX H

Additional Web Resources

Other web links for further information:

1. As the nation's lead for the JTMD situation NOAA has developed a web site:

   http://marinedebris.noaa.gov/tsunamidebris

2. Tsunami maps, reports, Japanese Tsunami Effects to California, National Tsunami Preparedness Week links and details, as well as additional tips on tsunami preparedness are available from the California Geological Survey at:

   www.tsunami.ca.gov.

3. NOAA Marine Debris –

   http://marinedebris.noaa.gov/tsunamidebris

4. Bulletins from the Japan Tsunami Debris Joint Information Center –

   http://disasterdebris.wordpress.com/2012/05/08/epa-noaa-may-bulletin/

5. Cal OES (general tsunami info) –

   http://www.caloes.ca.gov/PlanningandPreparedness/Pages/Tsunami-Science.aspx

6. Cal OES Tsunami Preparedness –

   http://www.caloes.ca.gov/PlanningandPreparedness/Pages/Tsunami-Preparedness.aspx

7. USEPA Japan Tsunami Debris Information –

   http://www.epa.gov/region9/marine-debris/bulletin/may2012.html