

Fish and Game Commission Meeting Binder



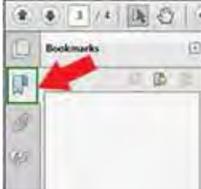
March 21, 2016

Marine Resources Committee Meeting

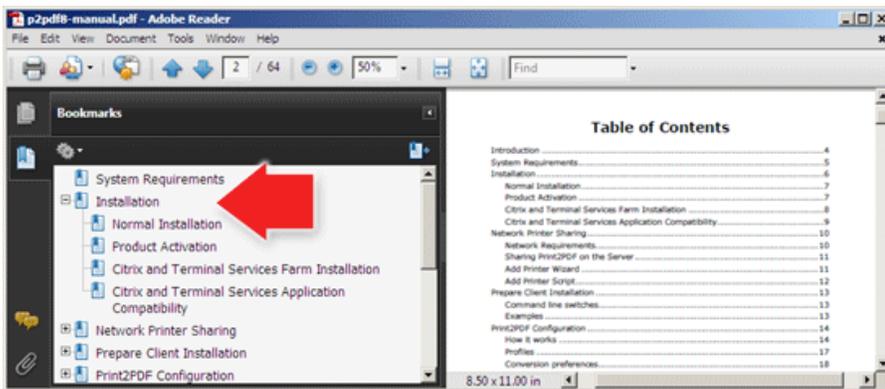
Los Alamitos

EASY GUIDE TO THE BINDER

1. Download and open the binder document using your Adobe Acrobat program/application.
2. Immediately click/tap on the “bookmark symbol” located near the top left-hand corner.



3. A bookmark panel should appear on either the top or the left-hand side of the screen. To make adjustments, simply use the Page Display option in the View tab. If done correctly, you should see something like:



4. We suggest leaving open the bookmark panel to help you move efficiently among the analysis sheets and supporting documents included in the binder. It's helpful to think of these bookmarks as a table of contents which allows you to go to specific points in the binder without having to scroll through hundreds of pages.
5. Resize the bars by placing the icon in the dark, vertical line located between the text boxes and using a long click/tap to move ←|→ in either direction. You may also adjust the sizing of the documents by adjusting the sizing preferences located on the Page Display icons found in the top toolbar or in the View tab.
6. Upon locating an analysis sheet for an agenda item that interests you, notice that you can get more information by double-clicking/tapping on any item underlined in red.
7. Return to the analysis sheet by simply re-clicking/tapping on the item in the bookmark panel.

OVERVIEW OF FISH AND GAME COMMISSION COMMITTEE MEETING

- Our goal today is informed discussion to guide future decision making, and, we need your cooperation to ensure a lively and comprehensive dialogue.
- We are operating under Bagley-Keene Open Meeting Act, but the Committee is not a decision making body and only makes recommendations to the full Commission for possible action.
- These proceedings may be recorded and posted to our website for reference and archival purposes.
- Items may be heard in any order pursuant to the determination of the Committee Co-Chairs.
- In the unlikely event of an emergency, please locate the nearest emergency exits.
- Restrooms are located _____.
- Committee meetings operate informally and provide opportunity for everyone to provide comment on agenda items. If you wish to speak on an agenda item, please follow these guidelines:
 1. Raise your hand and wait to be recognized by the Committee.
 2. Provide your name, affiliation (if any), and the number of people you represent.
 3. Time is limited; please keep your comments precise to give others time to speak.
 4. If several speakers have the same concerns, please appoint a group spokesperson.
 5. If you would like to present handouts or written materials to the Committee, please provide five copies to the designated staff member just prior to speaking.
 6. If speaking during public comment, the subject matter you present should not be related to any item on the current agenda (public comment on agenda items will be taken at the time the Committee members discuss that item).
- **Warning!** Laser pointers may only be used by a speaker doing a presentation.

Commissioners

Eric Sklar, President

Saint Helena

Jacque Hostler-Carmesin, Vice President

McKinleyville

Anthony C. Williams, Member

Huntington Beach

Vacant, Member

Vacant, Member

STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor

Mike Yaun, Acting Executive Director

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Fish and Game Commission



Wildlife Heritage and Conservation

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MARINE RESOURCES COMMITTEE

Committee Chair: Commissioner Sklar

Meeting Agenda

March 21, 2016, 11:00 a.m.

**West Ed Building - Ed Meyers Classroom
4655 Lampson Ave., Suite A, Los Alamitos**

This meeting may be audio-recorded

NOTE: Please see important meeting procedures and deadline information at the end of the agenda. All agenda items are informational and/or discussion only. The Committee develops recommendations to the Commission but does not have authority to make policy or regulatory decisions on behalf of the Commission.

1. Call to order / roll call to establish quorum
2. Approve agenda
3. Public forum for items not on agenda
The Committee may not discuss or take action on any matter raised during this item, except to consider whether to recommend that the matter be added to the agenda of a future meeting. [Sections 11125, 11125.7(a), Government Code]
4. Agency updates
5. Update on Red Abalone Fishery Management Plan
6. Update on Marine Life Management Act Master Plan for Fisheries revision process
7. Identify and discuss possible amendments to ocean sport fishing regulations for 2016 season (Sections 27.00, et al., Title 14, CCR)
8. Update on Pacific herring fishery and fishery management plan planning process
9. Informational presentation on marine debris and plastic pollution

10. Update on topics previously before the Committee
 - (A) Fisheries Bycatch Workgroup
 - (B) Other
11. Future agenda items
 - (A) Review work plan agenda topics and timeline
 - (B) Potential new agenda topics for FGC consideration
12. Adjournment

**FISH AND GAME COMMISSION
2016 MEETING SCHEDULE**

www.fgc.ca.gov

MEETING DATE	COMMISSION MEETING	COMMITTEE MEETING
April 12		Tribal River Rock Casino Quail Run Buffet 3250 Highway, 128 East Geyserville, CA 95441
April 13-14	Flamingo Conference Resort & Spa 2777 Fourth Street Santa Rosa, CA 95405	
April 18	Teleconference — Arcata, Sacramento, Los Alamitos and Yountville	
May 18		Wildlife Resources Department of General Services Ziggurat Building – Auditorium 707 3 rd Street West Sacramento, CA 95605
June 21		Tribal TBD
June 22-23	TBD	
July 21		Marine Resources Petaluma Regional Library 100 Fairgrounds Drive Petaluma, CA 94952
August 24-25	Lake Natoma Inn Hotel & Conference Center 702 Gold Lake Drive Folsom, CA 95630	
September 21		Wildlife Resources Woodland Public Library Leake Center Community Room 250 First Street Woodland, CA 95695
October 18		Tribal TBD
October 19-20	TBD	
November 17		Marine Resources Irvine, CA
December 7-8	Portofino Inn & Suites 3805 Murphy Canyon Road San Diego, CA 92123	

OTHER MEETINGS OF INTEREST

Wildlife Conservation Board

- May 26, Sacramento
- August 30, Sacramento
- November 16, Sacramento

Pacific Fishery Management Council

- April 9-14, Vancouver, WA
- June 23-28, Tacoma, WA
- September 15-20, Boise, ID
- November 16-21, Garden Grove

Pacific Flyway Council

- September 2016, TBD

Western Association of Fish and Wildlife Agencies

- July 2016, Cody, WY

IMPORTANT COMMITTEE MEETING PROCEDURES INFORMATION

Welcome to a meeting of the California Fish and Game Commission's Marine Resources Committee. The Committee is chaired by up to two Commissioners; these assignments are made by the Commission.

The goal of the Committee is to allow greater time to investigate issues before the Commission than would otherwise be possible. Committee meetings are less formal in nature and provide for additional access to the Commission. The Committee follows the noticing requirements of the Bagley-Keene Open Meeting Act. It is important to note that the Committee chairs cannot take action independent of the full Commission; instead, the chairs make recommendations to the full Commission at regularly scheduled meetings.

The Commission's goal is the preservation of our heritage and conservation of our natural resources through informed decision making; Committee meetings are vital in developing recommendations to help the Commission achieve that goal. In that spirit, we provide the following information to be as effective and efficient toward that end. Welcome, and please let us know if you have any questions.

PERSONS WITH DISABILITIES

Persons with disabilities needing reasonable accommodation to participate in public meetings or other Commission activities are invited to contact the Reasonable Accommodation Coordinator at (916) 651-1214. Requests for facility and/or meeting accessibility should be received at least 10 working days prior to the meeting to ensure the request can be accommodated.

SUBMITTING WRITTEN MATERIALS

The public is encouraged to attend Committee meetings and engage in the discussion about items on the agenda; the public is also welcome to comment on agenda items in writing. You may submit your written comments by one of the following methods (only one is necessary): **Email to fgc@fgc.ca.gov; deliver to California Fish and Game Commission, 1416 Ninth Street, Room 1320, Sacramento, CA 95814; or hand-deliver**

to a Committee meeting. *The Commission no longer accepts written comments or requests for regulations changes via facsimile; please submit written comments or requests for regulations changes by email, mail service or in person.*

Written comments received at the Commission office by 5:00 p.m. on March 8, 2016 will be made available to the Committee prior to the meeting. Written comments received between 5:00 p.m. on March 8, 2016 and 12 noon on March 16, 2016 will be made available to the Committee at the meeting. After March 16, 2016 five copies of written comments must be delivered at the meeting, otherwise they will not be made available to the Committee until after the meeting.

The Committee **will not** consider comments regarding proposed changes to regulations that have been noticed. If you wish to provide comment on a noticed item, please provide your comments during Commission business meetings, via email, or deliver to the commission office.

NOTE: Materials provided to the Committee may be made available to the general public.

SPEAKING AT THE MEETING

Committee meetings operate informally and provide opportunity for everyone to comment on agenda items. If you wish to speak on an agenda item, please follow these guidelines:

1. Raise your hand and wait to be recognized by the Committee co-chair(s).
2. Once recognized, please begin by giving your name and affiliation (if any) and the number of people you represent.
3. Time is limited; please keep your comments concise so that everyone has an opportunity to speak.
4. If there are several speakers with the same concerns, please try to appoint a spokesperson and avoid repetitive comments.
5. If you would like to present handouts or written materials to the Committee, please provide five copies to the designated staff member just prior to speaking.
6. If speaking during public forum, the subject matter you present should not be related to any item on the current agenda (public comment on agenda items will be taken at the time the Committee members discuss that item). As a general rule, public forum is an opportunity to bring matters to the attention of the Committee, but you may also do so via email or standard mail. At the discretion of the Committee, staff may be requested to follow up on the subject you raise.

VISUAL PRESENTATIONS/MATERIALS

All electronic presentations must be submitted by the written materials deadline (March 16, 2016 at 12 noon) and approved by the Commission executive director before the meeting.

1. Electronic presentations must be provided by email or delivered to the Commission on a USB flash drive by the deadline.
2. All electronic formats must be Windows PC compatible.
3. It is recommended that a print copy of any electronic presentation be submitted in case of technical difficulties.
4. A data projector, laptop and presentation mouse will be available.

LASER POINTERS may only be used by a speaker during a presentation.

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

3. PUBLIC FORUM**Today's Item****Information** **Direction**

Receive public comments for items not on the agenda.

Summary of Previous/Future Actions (N/A)**Background**

The Committee generally receives two types of correspondence or comment under public forum: Requests for the Committee to consider new topics, and informational items. As a general rule, requests for regulatory change need to be redirected to the full Commission and submitted on the required petition form, FGC 1, titled "Petition to the California Fish and Game Commission for Regulation Change" (Section 662, Title 14, CCR). However, at the discretion of the Committee, staff may be requested to follow up on items of potential interest to the Committee and possible recommendation to the Commission.

Significant Public Comments (N/A)**Recommendation**

If the committee wants to recommend any new future agenda items based on issues raised and within the FGC's authority, staff recommends holding for discussion under today's Agenda Item 11.(B), *Potential new agenda topics for FGC consideration*.

Exhibits (N/A)**Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

4. AGENCY UPDATES**Today's Item****Information** **Direction**

Receive updates from other government agencies on marine items.

Summary of Previous/Future Actions (N/A)**Background**

This is a standing item for DFW, Ocean Protection Council (OPC), and other government agencies to provide an update on marine-related items of interest.

- A. OPC: An OPC staff member (TBD) may attend to provide an update.
- B. DFW Marine Region: Dr. Craig Shuman, Regional Manager, will provide an update. This update will include recent activities associated with the crab fisheries closures due to elevated domoic acid levels.
- C. DFW Law Enforcement Division: Bob Puccinelli, Assistant Chief, will provide an enforcement update.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits (N/A)****Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

5. ABALONE FMP**Today's Item****Information** **Direction**

Receive DFW update on red abalone fishery management plan (FMP) development process and timeline.

Summary of Previous/Future Actions

- FGC accepts MRC recommendation to develop red abalone FMP Oct 8, 2014; Mt Shasta
- Receive update on FMP process Nov 4, 2015; Ventura
- **Today receive update on FMP process Mar 21, 2016; Los Alamitos**

Background

A fishery management plan (FMP) for red abalone is under development. Currently, the management and recovery of all abalone species in California is guided by the Abalone Recovery and Management Plan (ARMP), adopted by FGC in 2005. The ARMP was required by legislation in 1997, prior to enactment of the Marine Life Management Act (MLMA). The MLMA now requires that FMPs form the primary basis for managing the state's marine fisheries. In light of changes in the red abalone fishery, and limitations in the management responses available under the ARMP, FGC endorsed a proposal from DFW to develop an FMP for the existing northern California recreational red abalone fishery, separate from recovery under the ARMP.

The endorsed process to develop the red abalone FMP was launched through a series of public workshops hosted by DFW and FGC staff in the fall of 2014, followed by an online angler survey in Feb 2015. Since then, DFW has provided updates at MRC meetings on stakeholder input and next steps in the FMP development process.

DFW has informed staff that the original FMP timeline will need to be modified due to extensive efforts to support Dungeness crab sampling for domoic acid by the same staff involved in preparing the FMP. At this meeting, DFW will provide an update on the timeline, as well as opportunities for public and scientific input.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits (N/A)****Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

6. MLMA MASTER PLAN**Today's Item****Information** ☒**Direction** ☐

Receive DFW update on progress in efforts to review and amend the current FGC-adopted master plan for fisheries pursuant to the Marine Life Management Act (MLMA).

Summary of Previous/Future Actions

- Received overview of plan and timeline Nov 4, 2015; MRC, Ventura
- **Today's update on progress** Mar 21, 2016; MRC, Los Alamitos

Background

The MLMA, enacted in 1998, directs DFW and FGC to manage state fisheries sustainably through an ecosystem-based approach (§ 7050 et seq., Fish and Game Code). To help achieve its goals, the MLMA calls for developing a master plan that specifies the process and resources needed to prepare, adopt and implement fishery management plans (FMPs) for fisheries managed by the state (§ 7073, Fish and Game Code). The master plan is intended to help focus management effort on the highest priority species and to describe the specific tools and approaches to be applied in achieving the goals of the MLMA.

The current Master Plan was developed by DFW with input from stakeholders and adopted by FGC in 2001 (see <https://www.wildlife.ca.gov/Conservation/Marine/Master-Plan>). Since then, priorities have evolved and new issues have arisen. New tools and approaches have become available that have the potential to significantly improve fisheries management. Given that the MLMA calls for the master plan to be periodically reviewed and amended, these new tools and approaches can be incorporated into an amended master plan with the potential to broaden the policy scope of the document and facilitate moving more fisheries under active management and FMPs, as envisioned in the MLMA. A master plan amendment is significant and substantial enough that DFW's Marine Region has elevated its priority to one of five strategic work plan objectives (Exhibit 1).

In Nov 2015, DFW provided an overview of the background, scope, and proposed approach to amend the MLMA master plan for fisheries (exhibits 2-4). Today, DFW will provide an update on progress made in support of the current information-gathering stage.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits**

1. DFW Marine Region Strategic Work Plan - Summary, dated Oct 21, 2015
2. Master Plan for Fisheries Top Ten Frequently Asked Questions, dated Oct 22, 2015
3. DFW Draft Proposed Approach to Amend the Marine Life Management Act Master Plan, dated Oct 22, 2015
4. Draft Ongoing and Proposed Analyses Supporting the Development and Implementation of an Amended Master Plan for Fisheries, dated Oct 22, 2015

Committee Direction/Recommendation (N/A)

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

7. OCEAN SPORTFISHING**Today's Item**Information Direction

Identify and discuss possible amendments to ocean sportfish regulations scheduled for action in 2016.

Summary of Previous/Future Actions

- **Today's MRC vetting** Mar 21, 2016; MRC, Los Alamitos
- Notice hearing Aug 24-25, 2016; Folsom
- Discussion hearing Oct 19-20, 2016; Crescent City
- Adoption hearing Dec 7-8, 2016; San Diego

Background

This is an annual opportunity to discuss possible changes to ocean sport fishing regulations for the subsequent season. Any proposals that the MRC would like to recommend be included in a rulemaking package would need to advance to FGC in April for inclusion at the FGC notice hearing in August.

Currently DFW is proposing one amendment to sport fishing regulations beyond the federal fishery conformance packages already scheduled. The proposed change is to adjust the seasonal boundary for recreational razor clam fishing at Clam Beach, Humboldt County (§ 29.45, Title 14, CCR). The current boundary is defined by Strawberry Creek. The natural channel of Strawberry Creek has migrated southward far beyond the originally-intended boundary and this migration has impacted public access to clamming grounds.

Significant Public Comments

Humboldt County leaders, including retired Humboldt County supervisor Jimmy Smith, the Humboldt County Board of Supervisors, and Humboldt Area Saltwater Anglers, Inc., have repeatedly requested DFW to rectify the situation (See example in Exhibit 1).

Recommendation

Recommend FGC support for the DFW-proposed change to the clamming boundary at Strawberry Creek. Discuss any additional proposals for the 2016 rulemaking and, if necessary, request public petitioners to complete the required FGC form for petitions for rulemaking change.

Exhibits

1. Letter from Humboldt County Board of Supervisors to DFW, Nov 3, 2015

Committee Direction/Recommendation (N/A)

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

8. PACIFIC HERRING**Today's Item****Information** **Direction**

Receive DFW update on the 2015-16 Pacific herring commercial fishery and update on planning process to develop a fishery management plan.

Summary of Previous/Future Actions (N/A)**Background**

Fishery Update: FGC annually adopts commercial herring regulations to establish fishing quotas, pursuant to Section 163, Title 14, California Code of Regulations. Quotas are proposed based on herring spawning population size estimates from DFW surveys. At this meeting, DFW will provide an overview of the 2015-16 herring fishery, and implications for possible regulation changes this fall.

Fishery management plan (FMP): FGC and DFW identified Pacific herring as a priority fishery for developing an FMP as mandated in the Marine Life Management Act. For over two years, a collaborative working group of herring fleet leaders, staff from conservation non-governmental organizations, and DFW staff, has been developing a vision and concepts for an FMP. Today, DFW will provide an update on progress in securing funding necessary to initiate FMP development.

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits (N/A)****Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

9. MARINE DEBRIS**Today's Item****Information** **Direction**

Receive informational presentations concerning marine debris and plastic pollutions from:

- 1) Dianna Cohen, CEO and Co-Founder of Plastic Pollution Coalition;
- 2) Sarah Sikich, Vice President of Heal the Bay; and
- 3) Dr. Sherry Lippiatt, California Regional Coordinator for National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program.

Summary of Previous/Future Actions (N/A)**Background**

Marine debris is defined by the California Coastal Commission as “any manufactured or processed solid waste material that enters the marine environment from any source.” The Ocean Protection Council (OPC) simply calls it “ocean litter.” Both land-based activities and ocean-based activities can result in marine debris and lead to potential harm to marine wildlife through ingestion, entanglement, or disruption of habitat. Marine debris prevention, removal, and education are identified as priority for several organizations, local and state agencies, OPC, and in the West Coast Governors Alliance on Ocean Health. The NOAA Marine Debris Program has been in effect since it was authorized by Congress in 2006. As an example, an overview of activities previously undertaken by OPC, and in partnership with several agencies and organizations, is provided in exhibits 1 and 2 below.

FGC has recently highlighted its concern with marine debris in California's coastal waters and ocean ecosystem within which California's living marine resources reside. Today, invited speakers will provide an informational briefing on marine debris and the actions being taken at the local, State and Federal levels as a context for discussion.

Significant Public Comments

1. April Wakeman, representing Sportfish Conservancy, recommends MRC concentrate on areas within FGC authority and influence, such as engaging the current coalition focused on reducing whale entanglement risks.

Recommendation

Solicit input on possible ways that FGC might engage in addressing marine debris concerns, including possible coordination with other agencies or with collaborative efforts underway.

Exhibits

1. Email from Holly Wyer, OPC with list of OPC activities on marine debris, Mar 17, 2016
2. OPC Staff Report on Marine Debris, dated Jun 27, 2013
3. Letter from April Wakeman, Sportfish Conservancy, dated Mar 3, 2016

Committee Direction/Recommendation (N/A)

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

10. PREVIOUS TOPICS**Today's Item**Information Direction

Receive update on topics previously discussed by MRC and provide guidance regarding further efforts.

Summary of Previous/Future Actions (N/A)**Background****A. Fisheries Bycatch Workgroup**

In March 2015, MRC requested that staff schedule an initial meeting of the MRC bycatch workgroup (endorsed by FGC in Dec 2014) and explore potential funding to support future workgroup meetings. Staff will update MRC on initial progress in establishing the MRC bycatch workgroup.

B. Other

This is a place-holder for updates or comments regarding previous agenda items before MRC but not included in today's agenda.

Significant Public Comments (N/A)**Recommendation**

Provide direction on any topics.

Exhibits (N/A)**Committee Direction/Recommendation (N/A)**

COMMITTEE STAFF SUMMARY FOR MARCH 21, 2016

11. FUTURE TOPICS**Today's Item****Information** ☒**Direction** ☒

Review upcoming agenda items scheduled for the next and future MRC meetings, hear requests from DFW and interested stakeholders for future agenda, and identify new items for consideration.

Summary of Previous/Future Actions

- FGC approves draft Jul MRC topics Jun 22-23, 2016; Huntington Beach
- Next MRC meeting Jul 21, 2016; MRC Petaluma

Background

Committee topics are referred by FGC and scheduled as appropriate. FGC-referred topics and draft schedule are shown in Exhibit 1. MRC agendas currently include several complex and time-intensive topics. The committee has placed emphasis on issues of imminent regulatory importance, and thus consideration of new topics will require planning relative to existing committee workload.

Agenda topics identified for the Jul 2016 MRC meeting include:

1. Abalone Fishery Management Plan (FMP) update
2. California's fishing communities
3. Fisheries bycatch workgroup update
4. Pier and jetty fishing project update
5. Ocean acidification and hypoxia (OAH): presentation on the findings and recommendations of the OPC West Coast OAH Science Panel

Other potential topics for Jul or Nov 2016 MRC meetings include:

1. Herring FMP development update
2. Kelp and algae harvest management review
3. MLMA Master Plan for Fisheries revision update
4. Commercial sea cucumber fishery overview by DFW

Significant Public Comments (N/A)**Recommendation**

Review current rulemaking calendar (Exhibit 2) and draft MRC work plan schedule, consider updates to scheduling of recommended projects, and consider whether any potential new topics could be added to or replace existing topics; decide whether to request FGC refer any new topics for Committee evaluation.

Exhibits

1. MRC 2016 Work Plan, updated Mar 10, 2016
2. Perpetual Timetable for FGC Anticipated Regulatory Actions, updated Feb 25, 2016

Committee Direction/Recommendation (N/A)

Department of Fish and Wildlife Marine Region Strategic Work Plan - Summary
Advancing Marine Resource Management in California
Updated - October 2015

Goal

Align statewide interests in marine resource management and fully utilize current technology, best available science, and best management practices to advance marine resource management in California.

Objectives

- Develop and implement electronic data collection and reporting structure relevant to management
- Amend Marine Life Management Act (MLMA) Master Plan to guide implementation of MLMA and increase scope of active management
- Determine appropriate structural organization and capacity to facilitate proactive management
- Identify and fill existing management gaps
- Evaluate and implement sustainable funding structure

Needs

- Joint work plan to achieve objectives
- Discipline exercised by all parties to focus short-term efforts on the Strategic Work Plan and critical resource management needs
- Leverage external support opportunities

Timeline

- Initial focus on electronic data collection and MLMA Master Plan amendment through mid - 2018

Metrics for success

- Implementation of electronic reporting of updated data streams
- Recognized achievement of management objectives mandated in the MLMA
- Sufficient and appropriate structural organization and capacity for effective management

Master Plan for Fisheries Amendment

Top Ten Frequently Asked Questions

1. What is the Master Plan for Fisheries?

The Marine Life Management Act (MLMA) is a California law, passed in 1999, that directs the Department of Fish and Wildlife (Department) and the Fish and Game Commission (Commission) to manage state fisheries sustainably through an ecosystem-based approach. To help achieve the MLMA's goals, the Act calls for the development of a strategic plan known as the Master Plan for Fisheries. The Master Plan is intended to help focus management effort on the highest priority species and to describe the specific tools and approaches to be applied in achieving the goals of the MLMA. The Master Plan is a document that is developed by the Department with input from stakeholders and adopted by the Commission.

2. Why is the Master Plan for Fisheries being amended now?

The current Master Plan was adopted fifteen years ago. Since then, priorities have evolved and issues arisen that are not addressed in the existing Master Plan. New tools and approaches have become available that can significantly improve fisheries management that can be incorporated into an amended Master Plan.

3. Who is leading the amendment effort?

The Department of Fish and Wildlife Marine Region will be directing the effort. The Department may oversee contractors assigned to specific tasks such as meeting facilitation, editing, conducting analyses, process management, and logistics.

4. What are the benefits of amending the Master Plan?

When the Master Plan was originally adopted, it included a list of species that were priorities for Fishery Management Plan (FMP) development. However, in the last 14 years, those priorities have changed considerably. An amendment will help the Department and stakeholders develop shared expectations of what successful implementation of the MLMA looks like. It will also serve to focus attention on fisheries that would most benefit from additional focus to achieve or maintain sustainability. In addition, a range of new fisheries management tools and approaches have been developed over the last decade that can better assess the status of stocks and ensure that management measures are tuned to the needs of fish populations and the fishing communities that depend on them. Successful implementation of these tools through an amended Master Plan can reduce risk and potentially result in greater fishing opportunity, improved access to the growing number of sustainability conscious markets, increased revenue, and greater adaptability to changing climate and oceanic conditions.

5. What is the timeframe for updating the Master Plan?

2015 - The Department and the Commission will define the Master Plan development process, identify information and resources needed, work to secure funding, and compile background information.

2016 - The Department will conduct or oversee supporting analyses, and engage in initial outreach to stakeholders.

2017 - Issue-based workshops will be held. The Master Plan is drafted, revised in response to tribal, peer review and stakeholder comments.

2018 - The Master Plan is anticipated to be adopted in early 2018.

6. How will stakeholders be affected?

The Master Plan revision will not change fishing regulations directly. Rather, it will establish priorities, policies, and approaches that will guide management in the future, making management more consistent and predictable. These policies include identifying fisheries that will most benefit from FMPs, identifying tools for assessing fish stocks and managing harvest, understanding when and how to consider socioeconomic impacts, how to integrate the new MPA network into management, and how best to engage stakeholders and build partnerships.

7. What opportunities are there for public input?

The MLMA places significant emphasis on the role that stakeholders and outside experts should play in Master Plan development. Accordingly, the Department anticipates a range of opportunities for public engagement during 2016 and 2017, including town hall meetings, issue-based workshops, web surveys, meetings of the Commission and its Marine Resources Committee, and designated document review periods.

8. How are outside groups and funding involved?

Partnerships are highlighted by the MLMA as an important means of leveraging outside resources to expand the Department's capacity and improve management. For example, the Department may choose to engage in partnerships with outside groups such as fishing associations or environmental groups to develop background materials, or use funds from the Ocean Protection Council or the philanthropic community to help pay for facilitation or supporting analyses. The Department and the Commission are committed to maintaining the integrity and transparency of the process and all partnerships will be structured to achieve that goal.

9. Does the review have any relationship to the MLPA Initiative?

No. This is a separate effort under a different law. The Marine Life Protection Act (MLPA) Initiative was focused on creating an improved network of areas where fishing is prohibited or restricted for the purpose of ecosystem protection. By contrast, the MLMA and its implementation plan, the Master Plan for Fisheries, are focused on the compatible goals of improving fisheries management and on how to achieve sustainable and economically viable fisheries in the State. Nevertheless, the Master Plan review will be an opportunity to help identify how the new MPA network should be considered when managing fisheries.

10. How does this affect other Department priorities?

Several major strategic initiatives are moving forward at the same time as the Master Plan review, including the development of FMPs for the recreational red abalone and commercial herring fisheries, the transition to electronic reporting, addressing whale entanglement, and ongoing management of state and federally managed fisheries, among others. The Master Plan amendment is a major undertaking that will shape how the Department manages fisheries over the next five to ten years. As a result, some other activities will likely be deferred until it is completed. An amended Master Plan for Fisheries will make state management of fisheries more efficient, transparent, and predictable.

DRAFT

Proposed Approach to Amend the Marine Life Management Act Master Plan

Vision:

In 1998, California adopted one of the nation's most progressive marine management laws, the Marine Life Management Act (MLMA). In 2012, the state completed a science-based statewide network of marine protected areas (MPAs) under the Marine Life Protection Act (MLPA). Effective implementation of these two laws can distinguish California as one of the best managed marine environments in the world.

In the 15 years since its adoption, the MLMA has been an effective guide for certain fisheries. However, the law has not been fully implemented due to competing demands and insufficient funding. At the same time, the past 15 years have yielded valuable lessons regarding implementation and significant advancements have been made in the field of fisheries management and science, offering more efficient ways to implement the MLMA. The MLMA itself remains an effective framework. However, the current Master Plan for Fisheries, which the MLMA requires as a guide to implementation, does not reflect recent innovations in fisheries management and science. By revising the Master Plan to incorporate these innovations and best practices, implementation of the MLMA can be revitalized to achieve its vision of thriving fisheries, healthy ecosystems, and transparent and strategic management.

Goals:

Revise the Master Plan for Fisheries so that it enhances sustainability of the state's ocean fisheries, increases management effectiveness and efficiency, sets clear expectations, and fosters transparency and flexibility.

Objectives:

These goals will be pursued through the following objectives:

1. Establish priorities for management efforts (what should be done?) (Fish & Game Code 7073(b) (2))

The MLMA requires the Master Plan to prioritize fisheries for management. The existing Master Plan's priority fisheries list should be revised to reflect new approaches and information. Updating the list would address the California Department of Fish and Wildlife's (DFW) and the Fish and Game Commission's (FGC) strong desire to develop a broadly accepted set of priorities to guide strategic investment of time and resources. Updating the priority list would also serve the interests of fishermen, scientists, conservation and other organizations, and the interested philanthropic community.

2. Develop strategies for implementing MLMA-based active management (what form should those efforts take?) (Fish & Game Code 7072, 7074, 7080)

The current Master Plan's guidance on the contents of Fishery Management Plans (FMPs), as well as information requirements and processes for developing them, presents a single, data-intensive model for management under the MLMA. This model reflects the state of practice in the late 1990s and should be updated to incorporate newer, less onerous, and less data-

intensive approaches. Reinterpreting the MLMA provisions for active management under a revised Master Plan should demonstrate opportunities to more efficiently implement the MLMA by scaling the planning approach for each fishery to the available data and the size of the fishery.

3. Develop strategies for enhanced management: (what new tools/approaches can be used?) (Fish & Game Code 7073(b) (3))

Stock Assessments — Active management of fisheries under MLMA has been constrained by an expectation that sound management should strive to reduce uncertainty through the application of integrated stock assessments, where all available information is simultaneously analyzed with models that find the best fit, including biological reference points related to sustainability. It is now possible to develop less costly assessments of such fisheries that are of sufficient quality to inform management and guide data collection, or to form the basis of harvest control rules. Additional capacity could be accessed by taking advantage of California's rich set of research institutions, universities, agencies, funding sources, and broad interest in advancing fisheries science and management. The Master Plan could help encourage these partnerships and endorse creative approaches to generating and funding stock assessments.

Harvest Control Rules — A core element of effective fisheries management is a harvest control rule that can adjust fishing mortality to reflect the changing status of a given population. Most California fisheries operate without such formal rules. National and international innovations have produced tools for structuring harvest control rules in a more straightforward fashion than was previously done. However, in order for such elements to become common features of harvest control rules, appropriate guidance needs to be incorporated into the Master Plan.

Ecosystem Considerations — A distinctive feature of the MLMA is the explicit inclusion of ecosystems in the definition of sustainability. However, it has proven difficult to explicitly incorporate ecosystem considerations into management of state fisheries, partly because the existing Master Plan provides only very broad guidance in this challenging area. In the last decade, significant advances have been made in considering the ecosystem impacts of fisheries in important, if still incomplete ways. Adaptation and application of these approaches would provide a systematic practical way to meet the standards of MLMA regarding ecosystem conservation.

Using MPAs to help advance MLMA goals — The recent completion of the statewide marine protected area (MPA) network creates an opportunity to better understand, integrate, and account for MPAs in achieving the fisheries and ecosystem protection goals of the MLMA. Specifically, MPAs can influence harvest control rule approaches since a known percentage of biomass may be protected inside MPAs. They may also influence effort capacity targets, provide opportunities for collecting essential fishery information or estimating stock status, and can impact decisions regarding appropriate levels of risk. MPAs can also create unique management opportunities, protect habitat, and can have bearing on the economic considerations that go into fisheries management. These issues intersect with many areas of MLMA concern, and clearly articulating in the Master Plan what MPA integration can mean would be a valuable step.

Bycatch — MLMA explicitly requires that fisheries bycatch be evaluated and reduced as appropriate. However, a lack of policy guidance and relevant information regarding bycatch in specific fisheries has created a degree of uncertainty with respect to the preparation of new FMPs. As with other aspects of managing data-poor fisheries, it may be possible to develop a protocol that can guide a systematic effort to develop and evaluate information on bycatch in a fishery while setting management measures that properly reflect risk and uncertainty.

Improving data collection and use —The transition to an electronic-based data collection program will help establish a foundation of information upon which a wide range of management strategies and responses can be based. Improving the timeliness of data availability and ensuring that what is collected is used to guide and enhance management is a critical strategy.

Economic Considerations — Economic analysis has the potential to provide valuable information for assessing the viability of management options. However, determining the economic status and trends in a fishery, and the potential impacts of management measures, remains a great challenge for a variety of reasons, including a lack of critical data (e.g., the costs of fishing), limited DFW staff capacity, and diverse analytical approaches, as well as limited understanding on the part of decision makers and stakeholders of the methods and limitations of economic analysis. Articulating the methods and roles of economic analysis in management decisions so that stakeholders and decision makers share a common understanding could provide a stronger basis for evaluating options, incentives and disincentives, and other economic factors than now exists.

Community Considerations — MLMA calls for consideration of community impacts of fishery management measures, and such impacts can be a focus of great stakeholder interest. However, DFW and FGC lack a settled approach to considering community impacts. Nonetheless, a range of tools are available for evaluating the community impacts of management decisions. Describing options for conducting community impact analysis of fishery management measures can help ensure that these impacts are considered in a consistent fashion reflecting best practices and that expectations are realistic.

4. Identify strategies for enhanced stakeholder engagement in fisheries management (who should be engaged and how?) (Fish & Game Code 7073(b) (4))

Stakeholder Involvement — The MLMA establishes a prominent role for stakeholder participation in the development of FMPs and other management measures. While the existing Master Plan includes guidance on stakeholder involvement, agency staff, decision makers, and stakeholders express dissatisfaction with current approaches. The increasing use of social media and other innovations, including by Federal fishery management councils, provide the opportunity to create a toolbox of methods for involving stakeholders in more efficient, flexible, and informative ways. Guidance on the circumstances under which different tools work best would enable planning for regulatory and other processes large and small.

Collaborative Management — The MLMA explicitly encourages DFW and FGC to manage fisheries in collaboration with fishermen and other stakeholders. However, neither the Act nor the Master Plan provide guidance that operationalizes this direction. This lack of a framework has frustrated some efforts to develop collaborative management arrangements even when partner organizations express an interest in doing so. Extensive experience with collaborative management, primarily outside California, can be drawn upon to create a framework that DFW, FGC, and stakeholders can use for identifying, evaluating, and structuring collaborative

management activities in a way that increases capacity for effective fisheries management, respects the prerogatives of DFW and FGC, complies with state law, and inspires fishermen and other stakeholders to assume greater accountability for effective management.

5. Identify strategies for making the Master Plan an adaptive and living document, improving efficiencies, and engaging the scientific community (how to ensure usability and adaptability over time?) (Fish & Game Code 7073(b) (4))

Updates to the Master Plan are process-intensive and the next revision should address the need to make the Master Plan more relevant to the regular work of DFW and the FGC. For example, the Master Plan could set out a suite of higher level goals, or it could describe the development of objectives aimed at achieving those goals. DFW's development of these annual objectives could be comparatively agile and process-free, and would help ensure the Master Plan's relevance over time, both to the Department and to stakeholders looking to collaborate with DFW efforts. A web-based portal may help serve to engage the scientific and stakeholder community and be a means for keeping the plan and implementing products relevant and useful over time.

6. Identification of resource needs (what's needed to accomplish?) (Fish & Game Code 7073(b)(3))

It is essential that the plan realistically identify the resources needed for its implementation, otherwise the new tools and approaches described will be unable to be brought to bear.

Proposed Approach and Timeline:

The amendment to the Master Plan is proposed to be separated into two distinct phases. The first phase will be focused on information gathering and is expected to take place through the end of 2016. The projects and analyses that will be undertaken as part of the information gathering stage are described in the document entitled "Ongoing and Proposed Analyses Supporting the Development and Implementation of an Amended Master Plan for Fisheries."

The second phase will be focused on the amendment to the Master Plan for Fisheries. This phase will include tribal consultations, scoping sessions, informational and content specific workshops, public input and peer review. It is anticipated this phase will be initiated in late 2016 and conclude in early 2018 with the possible adoption of the amended Master Plan by the Fish and Game Commission.

DRAFT

Ongoing and Proposed Analyses Supporting the Development and Implementation of an Amended Master Plan for Fisheries

MLMA CONSISTENCY ASSESSMENT

MLMA-based Assessment Framework (Center for Ocean Solutions)

A Marine Life Management Act (MLMA)-based assessment framework is under development that is expected to evaluate the degree to which the management of an individual fishery is consistent with the directives of the MLMA. The effort draws from a number of sustainability assessment frameworks from around the world and distills, refines, and translates the most appropriate performance metrics into a non-technical approach for CDFW to use in tracking and enhancing performance under the MLMA. The expected end product will be a web-based tool to help assess consistency with the Act, identify gaps, and inform management priorities

STOCK ASSESSMENT, RISK MANAGEMENT and SUSTAINABILITY

California Fisheries Tool-kit (Natural Resources Defense Council/University of British Columbia)

This tool-kit now under development can help provide stock assessments, research protocols, and potential management strategies for individual fisheries. Led by the Natural Resources Defense Council (NRDC)/University of British Columbia and California Department of Fish and Wildlife (CDFW), this project will develop a structured framework for improving stock assessment and harvest control rules for California state fisheries. At the heart of the project is the design and implementation of a customized California Fisheries Toolkit that will include the life histories of state-managed species, the characteristics of the state's fishing fleets, and assessment outputs and harvest control rules that are compatible with the requirements of the MLMA. Once developed, it is anticipated that the Toolkit will enable CDFW to identify and apply optimal stock assessment methods and harvest control rules and to design data collection plans for fisheries under state management.

ECOSYSTEM CONSIDERATIONS

Readying California's Fisheries for Climate Change (California Ocean Science Trust)

The purpose of this project is to develop recommendations and considerations to inform a chapter in the Master Plan that will provide a framework and approach to guide sustainable fisheries management in the face of a changing climate. CDFW has sought the scientific and integration support of the Ocean Protection Council-Science Advisory Team (OPC-SAT) to co-produce recommendations for a chapter of the amended Master Plan. Facilitated by the OST, the OPC-SAT (including relevant external experts) proposes to work collaboratively with DFW

and FGC staff to develop an approach by which climate change can be considered in sustainable management of California fisheries. The approach will bring the best scientific thinking to bear on this topic and develop a set of recommendations of science guidance that can inform fisheries policy. The intended outcome of this work is a scientifically robust peer reviewed framework and approach to guide sustainable fisheries management in the face of a changing climate that can be integrated into the amended Master Plan.

FISHERY PRIORITIZATION

Risk Assessment and Ecosystem Considerations (Ocean Science Trust)

The project will consist of three components: 1) a Productivity and Susceptibility Analysis (PSA) to 30 of California's primary commercial and recreational species, 2) the development of a decision making framework that comprehensively evaluates the ecological, social, and economic threats associated with each fishery and prioritizes the management actions that will provide the most value to the state, and 3) testing that framework on a suite of five fisheries to understand its applicability statewide. The outcome will be a risk-based prioritization framework that is specific to California's management objectives as outlined in the MLMA. This framework is anticipated to assist the state in the prioritization of fisheries for Fishery Management Plan (FMP) development. It will also provide guidance on how the state should invest in future data collection and monitoring activities, and provide a critical link between the management of individual fishing activities and the comprehensive planning needed to meet ecosystem-based fishery management mandates.

BROADER APPLICATION of the MLMA

Status of Fisheries Dashboard (TBD)

Application of the MLMA has historically been focused on a relatively few fisheries for which FMPs have been developed. However, a new approach to another requirement under the MLMA, status of fisheries reports, could help broaden its application to other species. Development and regular updates of web-based status reports could form a "California Fishery Dashboard" that provides a comprehensive picture of fisheries management in California, increases transparency, and focuses management and research. A consistent structure to the reports that's focused on the goals of the MLMA would help identify where management is consistent with the Act and where gaps remain. The status report would also serve to focus FMP development efforts in a cost-effective way on the specific gaps and issues needing attention.

Scaled Fishery Management Plans (TBD)

If a FMP is needed, its scale should reflect the size of the fishery and complexity of the issues it presents. For example, fisheries with both commercial and recreational sectors, multiple gear types, broad geographic distribution, significant resource concerns, and allocation issues, may require more intensive public processes, more complex documents, and more funding to

develop. Comparatively simpler fisheries may need considerably less process and resources. The development of a framework to help scale FMP development efforts will further help ensure that any fisheries that move from a status report to a FMP, do so in a cost-effective and tailored way.

ESSENTIAL FISHERY INFORMATION and DATA NEEDS

Data Review (MRAG Americas)

CDFW is undertaking a review of its marine fisheries information collection and management programs. The review will comprise five analytical components:

- Describe existing CDFW programs for gathering and managing state marine fisheries-dependent management information,
- Inventory the CDFW marine fisheries-independent information assets,
- Identify current and anticipated fisheries management information needs,
- Describe current constraints and potential solutions for improving information gathering programs, and
- Identify potential strategies, partners, and estimated costs for improvement projects.

This work is expected to result in explicit recommendations for data collection improvement over the short, medium, and long term, along with estimates of associated costs. The resulting work should identify data collection needs to meet legal requirements, policy considerations, and goals. It should also develop recommendations to address data needs that leverage aspects of the existing monitoring programs, and consider trade-offs between costs and coverage levels, timeframes for implementation, and possible providers of potential solutions.

SOCIOECONOMICS and FISHING COMMUNITIES

Socioeconomic Profile (TBD)

A California socio-economic profile will be undertaken to provide information on the economics of each primary fishery, port, and region to help understand the history and dynamics of a fishery and how management may affect community and socioeconomic goals. In addition to providing a current view, the profile will also identify strategies and recommendations for tracking key metrics over time.

Understanding the potential economic and community impacts of regulation as well as trends in effort and landings can help prioritize and guide management so that it minimizes unintended socioeconomic impacts. The proposed project will analyze patterns of participation by fishermen in state-managed fisheries, using appropriately masked agency data on permit holders, landings, ex-vessel revenues, and other dimensions. The resulting analyses may inform reports on the status of state-managed fisheries, required under the MLMA, as well as a possible review of the Fish and Game Commission's restricted access policy.

COLLABORATIVE MANAGEMENT and STAKEHOLDER ENGAGEMENT

Partnerships (The Nature Conservancy)

The Nature Conservancy is developing a draft Partnerships Report that outlines a role for fishery stakeholders to assist CDFW in achieving progressive and adaptive fishery management strategies. The document will seek to provide a general definition of fishery partnerships, what makes them successful, and how different models of fishery partnerships could apply to California fisheries management. It will also describe the policy setting and the opportunities for partnerships identified within the MLMA.

The document will be organized around the primary tasks related to fisheries management including: prioritization of management efforts, fishery specific planning, research and monitoring, assessment, decision rules, and compliance and enforcement. For each management task, the report will provide an overview, a description of the current status and limitations, potential opportunities for partnership-based solutions and an evaluation of the organizational capacity and durability that partner organizations must possess in order to effectively partner with CDFW. The report will also provide case study examples and lessons learned from existing partnerships in California. TNC will be working with CDFW to help ensure the report reflects the goals, interests, and limitations of the Department and will be a useful source of information for the Master Plan review.

Stakeholder Engagement Toolkit (Center for Ocean Solutions; Kearns & West)

This project will provide guidance for fisheries managers on how to efficiently and effectively engage with stakeholders. The Center for Ocean Solutions (COS) and Kearns & West are developing a stakeholder engagement toolbox that will help match management goals to specific outreach and engagement strategies that ensure targeted and meaningful stakeholder involvement in the decision making process. Stakeholders and experts will have an opportunity to shape the how the considerations and recommendations identified are incorporated into the Master Plan itself.



BOARD OF SUPERVISORS

COUNTY OF HUMBOLDT

825 5TH STREET

EUREKA, CALIFORNIA 95501-1153 PHONE (707) 476-2390 FAX (707) 445-7299

November 3, 2015

Department of Fish and Wildlife
Marine Region
Peter Kalvass, Senior Environmental Scientist
32330 North Harbor Dr.
Fort Bragg, CA 95437

Subject: Request for Clamming Boundary Line Adjustment at
Clam Beach (Little River Beach)

Dear Mr. Kalvass:

The purpose of this letter is to request consideration of an adjustment to the seasonal boundary line for clamming at Clam Beach (Little River Beach) Humboldt County. Clam Beach is an important and valued asset for coastal access, recreation, and natural resources. Clam Beach hosts a significant population of Pacific razor clams which are harvested under the Ocean Sport Fish regulations. The present rules divide the clamming grounds into north and south beaches with Strawberry Creek defined as the middle management boundary. Clamming on the north beach (between Strawberry Creek and Little River) is open during odd-numbered years and clamming on the south beach (between Strawberry Creek and the Mad River) is open during even-numbered years.

Utilizing Strawberry Creek as the central boundary for alternating seasonal closures worked well when the creek discharged into the ocean west of Humboldt County's south parking lot and campground. For decades, this alignment effectively divided Clam Beach into more or less equivalent areas. However, starting in the mid-1990's, Strawberry Creek began migrating southward along the beach before discharging into the ocean.

In recent years and to date, the creek's confluence with the ocean has moved more than a half mile south of its historical location. This configuration creates a substantial imbalance with a large northern area and a much smaller southern area. In addition, the distance between the parking lot and the southern area creates an access hardship for seniors and people with mobility challenges who would like to pursue clams.

Before he retired, Humboldt County Supervisor Jimmy Smith, in consultation with 5th District Supervisor Ryan Sundberg, contacted you to discuss boundary adjustments. Jimmy Smith followed up on your suggestion to communicate the issue to the area California Department of Fish and Wildlife's enforcement branch. Those subsequent conversations were very beneficial and led to discussion of a multi-county (Humboldt-Del Norte) option; one which could close all

clamming on those two county's beaches one year and open them the following year (a comprehensive management approach). We very much appreciate those detailed communications. However, given the high level of public input on this issue and the complexity of two counties with separate beaches and diverse constituencies, we are respectfully requesting to remedy the current situation with just a minor boundary change.

Our preferred option would involve adjusting the seasonal boundary line at Clam Beach to a defined location due west of the County's south parking lot. This proposed change is consistent with historical management intent and in our opinion, the least controversial. The County would install the appropriate signage if our request is approved.

We ask that you consider this proposal and propose the next step. One option is that the County could initiate and submit a proposal for the Fish & Game Commission. Another option is that Fish & Wildlife staff could incorporate the proposal into another rule package or some other submittal to the Commission. We ask that you consider the most expedited route to make this change, because next year (2016) will bring clamming back to the south beach area.

Our staff contact is Hank Seemann with the Public Works Department (707-445-7741 or hseemann@co.humboldt.ca.us).

Sincerely,

A handwritten signature in blue ink that reads "Estelle Fennell". The signature is written in a cursive, flowing style.

Estelle Fennell, Chair
Humboldt County Board of Supervisors

EF:kh

From: Wyer, Holly@CNRA
Sent: Thursday, March 17, 2016 12:13 PM
To: Ashcraft, Susan@FGC
Cc: Vierra, Amy@CNRA
Subject: OPC Activities on Marine Debris

Hi Susan,

It was great to meet you on Monday. As we discussed, I've included a list below of OPC activities, resolutions and funded projects on the issue of marine debris. I also wanted to provide you with a work plan prepared by former Sea Grant Fellows at the OPC, which outlines actions taken by a number of agencies on the issue of marine debris:

http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20131121/Item4-attach-Marine-Debris-Work-Plan-Final-V2.pdf. I hope this is helpful for your meeting on Monday.

Sincerely,

Holly Wyer
Project Manager
Ocean Protection Council
916-653-0538
Holly.Wyer@resources.ca.gov

Derelict Fishing Gear Removal Pilot Project: In 2005, the OPC funded the California Derelict Fishing Gear Removal Pilot Project with the Sea Doc Society. The Sea Doc Society removed nearly 10 tons of fishing gear from the Channel Islands from July 2005 to December 2006. The Sea Doc Society used the success of the pilot project to launch the California Lost Gear Recovery Project.

Marine Debris Resolution: In 2007, the OPC adopted a resolution that called for a plan of action to reduce and prevent marine debris. The resolution called for the development of a marine debris steering committee and called for the committee to come back to the council with its recommendations. The Implementation strategy described below consists of the steering committee's recommendations.

Marine Debris Steering Committee: The 2007 Marine Debris Resolution was the genesis of the Marine Debris Steering Committee. The most recent work done by the Committee related to tsunami debris and public education in 2012.

Implementation Strategy to Reduce and Prevent Ocean Litter: In 2008, the OPC adopted an Implementation Strategy. The strategy outlined three priority actions for measureable success:

1. Implement at producer take-back (EPR) program for convenience food packaging
2. Prohibit single-use products that pose significant ocean litter impacts where a feasible, less damaging alternative is available
3. Assess fees on commonly littered items

Toxicological Profiles: In 2009, the OPC issued a grant to the Integrated Risk Assessment Branch of the Office of Environmental Health Hazard Assessment within CalEPA to develop toxicological profile reports for BPA, NP and DEHP to inform how these chemicals in plastic affect the marine ecosystem.

Extended Producer Responsibility Resolution: In 2009 the OPC adopted an amended resolution supporting the establishment of extended producer responsibility programs in California, and recommended legislation that implements the CalRecycle Board's framework for extended producer responsibility.

Master Environmental Assessment on Paper vs. Plastic vs. Reusable Bags: In 2009, the OPC authorized funding a contract to a consulting firm to prepare a Master Environmental Assessment on the life cycle and environmental impacts of paper, plastic and renewable bags.

Plastic Debris in the California Marine Ecosystem: In 2011, the OPC in partnership with OST and USC Sea Grant finalized a report on the current research, solution efforts, and data gaps for marine debris.

Save Our Shores Marine Debris Program: In 2011, Save Our Shores completed an OPC-funded project to remove debris from coastal watersheds and the shoreline along the Monterey Bay National Marine Sanctuary in Santa Cruz County and educate the public on marine debris. Debris removal also included data collection to document the quantity and type of debris being found.

Cigarette Litter Abatement Demonstration Program: In 2011, Save Our Shore completed an OPC-funded project to determine best practices for reducing watershed and beach cigarette butt litter in Capitola and Santa Cruz. The Project involved baseline monitoring, installation of cigarette butt receptacles, and continued monitoring to see if the receptacles and education campaign worked. On average, placement of receptacles reduced cigarette butt litter by 70-80 percent.

Marine Debris Database: In 2012, the OPC participated in development of the marine debris database as a member of the Marine Debris Action Team as part of the West Coast Governor's Alliance.

Workshop on Marine Debris: In 2013, OPC staff held a workshop on marine debris after the June 2013 meeting and a staff report was prepared for the Council's consideration at the November 2013 meeting.

Trash Amendments Resolution: In 2014, the OPC adopted a resolution that the Chairman of the Council would write a letter of support to the State Waterboard encouraging adoption of the trash amendments.

Marine Debris: A Snapshot of Work in California

**Ocean Protection Council
Staff Report
Amanda Sackett
June 27, 2013**



California Local, State and Federal Agencies Contributors



The 27-member San Francisco Bay Conservation and Development Commission (BCDC) was created by the California Legislature in 1965 in response to broad public concern over the future of San Francisco Bay.



The mission of the Coastal Commission is to protect, conserve, restore, and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations. <http://www.coastal.ca.gov/>



CalRecycle's vision is to inspire and challenge Californians to achieve the highest waste reduction, recycling and reuse goals in the nation. Through innovation and creativity, sound advancements in science and technology, and efficient programs that improve economic vitality and environmental sustainability, we build a stronger California. <http://www.calrecycle.ca.gov/>



Caltrans Improves Mobility Across California. One of Caltrans goals is to preserve and enhance California's resources and assets.



City of Los Angeles' Stormwater Program's mission is to protect the beneficial uses of receiving waters while complying with all flood control and pollution abatement regulations.



Los Angeles County, one of California's original 27 counties, was established Feb. 18, 1850. Originally the County occupied a comparatively small area along the coast between Santa Barbara and San Diego, but within a year its boundaries were enlarged from 4,340 square miles to 34,520 square miles, an area sprawling east to the Colorado River.



The mission of the Department of Boating and Waterways is to provide safe and convenient public access to California's waterways and leadership in promoting safe, enjoyable and environmentally sound recreational boating.



The mission of EPA is to protect human health and the environment.



Watershed Management Division was established in August 2000 to address the flood risk management, water quality, water conservation, open space, and recreational needs of the Los Angeles County Flood Control District.



The mission of the Monterey Bay National Marine Sanctuary is to understand and protect the coastal ecosystem and submerged cultural resources of central California.



The National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program (MDP) supports national and international efforts to research, prevent, and reduce the impacts of marine debris. <http://marinedebris.noaa.gov>



The California Ocean Protection Council’s (OPC) mission is to ensure that California maintains healthy, resilient, and productive ocean and coastal ecosystems for the benefit of current and future generations. www.opc.ca.gov



The Southern California Coastal Water Research Project (SCCWRP) is a research institute focusing on the coastal ecosystems of Southern California from watersheds to the ocean. SCCWRP was formed in 1969 to enhance the scientific understanding of linkages among human activities, natural events, and the health of the Southern California coastal environment; to communicate this understanding to decision makers and other stakeholders; and to suggest strategies for protecting the coastal environment for this and future generations. <http://www.sccwrp.org/Homepage.aspx>



The U.S. Coast Guard is one of the five armed forces of the United States and the only military organization within the Department of Homeland Security.



The Ventura Countywide Stormwater Quality Management Program’s mission is to enhance, protect and preserve water quality in Ventura County water bodies using proactive and innovative ideas for preservation of biodiversity, ecological viability and human health.



The State Water Board’s mission is to preserve, enhance and restore the quality of California’s water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. <http://www.waterboards.ca.gov/>

Non-Governmental Organizations Contributors



The 34th America’s Cup Healthy Ocean Project is a Global “Call to Action” Campaign that embraces the connection between the sport of sailing and protecting and restoring the ocean.



BASMAA is a 501(c)(3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area representing 96 agencies, including 84 cities and 7 counties. BASMAA is focused on regional challenges and opportunities to improving the quality of stormwater that flows to our local creeks, San Francisco Bay and Delta, and the Ocean.



The California Coastkeeper Alliance’s mission is to unite 12 local Waterkeeper programs to fight for swimmable, fishable and drinkable waters for California communities and ecosystems. <http://www.cacoastkeeper.org/>

Clean Seas Coalition



The purpose of the Coalition is to act as an informal clearinghouse for diverse efforts aimed at making the recommendations of the Ocean Protection Council relating to marine debris a reality, and to increase public awareness of the serious environmental impacts of disposing of trash and plastic waste in the Ocean.

<http://www.cleansseascoalition.org/>

Californians Against Waste is dedicated to conserving resources, preventing pollution and protecting California's environment through the development, promotion and implementation of waste reduction and recycling policies and programs.



Heal the Bay's mission is to make southern California's coastal waters and watersheds, including Santa Monica Bay, safe, healthy and clean.

<http://www.healthebay.org/>



The mission of the nonprofit Monterey Bay Aquarium is to inspire conservation of the oceans.



The Natural Resources Defense Council's mission is to safeguard the Earth: its people, its plants and animals and the natural systems on which all life depends.

<http://www.nrdc.org/>



The Ocean Conservancy's goal is to bring people together to find solutions for our water planet. We educate and empower people to defend not only the ocean and its wildlife, but also the millions who earn their living from the ocean.

<http://www.oceanconservancy.org/>



Oikonos is a non-profit organization that studies and protects imperiled ecosystems by engaging diverse communities through innovative scientific and artistic collaborations.



The University of California, Davis Wildlife Health Center's SeaDoc Society launched the California Lost Fishing Gear Recovery Project in July 2005. Since 2006, the project has removed more than 90 tons of lost fishing gear from California's coastal ocean. As well, the project has cleaned more than 1,400 pounds of recreational fishing gear off public fishing piers from Santa Cruz to Imperial Beach, including more than 1 million feet of fishing line. www.lostfishinggear.org



For over 30 years, Save Our Shores has been leading efforts to protect and preserve the Monterey Bay National Marine Sanctuary.



Surfrider's mission is the protection and enjoyment of oceans, waves and beaches through a powerful activist network.

<http://surfrider.org/>



Turtle Island Restoration Network's mission is to mobilize people in local communities around the world to protect marine wildlife and the oceans and inland watersheds that sustain them.

INTRODUCTION

Marine debris is a problem of international scale, as demonstrated by the North Pacific Subtropical Gyre; however, it is also an issue that needs to be addressed at a local level. Marine debris pollutes our beaches, creates a hazard for humans, entangles and poisons wildlife, and imposes costs on local municipalities through collection efforts and lost tourism revenue. The Ocean Protection Council (OPC) identifies marine debris as a priority issue and will continue its work to coordinate efforts to reduce marine debris by leading collaborative partnerships, supporting implementation of past recommendations, funding targeted studies to inform management and policy debates, and sharing that information with decision makers.

This document serves as an overview of marine debris related work from a variety of actors within California. The snapshot includes current actions that state agencies and non-governmental organizations (NGO) are taking to address the marine debris problem. This information provides the OPC with a better understanding of ongoing projects in California and will help identify gaps in order to better focus future efforts. Over 30 entities participated and reported their work, giving a comprehensive look at the various efforts of NGO and federal, state and local agencies.

Thus far, governmental contributors include; Bay Conservation and Development Commission, Ocean Protection Council, CalRecycle, CalTrans, California Coastal Commission, the County of Los Angeles, Department of Boating and Waterways, the Environmental Protection Agency, the City of Los Angeles, Los Angeles County Flood Control District, Monterey Bay National Marine Sanctuary, NOAA Marine Debris Program, Southern California CWRP, the University of California at Davis, and Water Resource Control Boards. NGO contributors include: America's Cup Healthy Ocean Project, Bay Area Stormwater Management Agencies Association, California Coastkeeper Alliance, Californians Against Waste, Heal the Bay, Ocean Conservancy, Oikonos, Turtle Island Restoration Network, Clean Seas Coalition, Surfrider Foundation and Natural Resources Defense Council.

This document is a compilation of existing marine debris programs and projects, and the OPC acknowledges that it is not an exhaustive account. Nevertheless, the activities reported provide enough information to identify existing management needs and gaps in order to effectively reduce marine debris.

ANALYSIS

The activities reported provide unique insight into the work being done to curb marine debris in California. With over 30 entities participating, the efforts to reduce marine debris are diverse and demonstrate significant effort towards addressing marine debris. The OPC can play a pivotal role in leading and coordinating the various statewide and West Coast efforts to make landmark progress in reducing trash. Of particular significance are the opportunities presented

by reinvigorating the California Marine Debris Steering Committee and supporting the work of the West Coast Governors Alliance on Ocean Health's Marine Debris Coalition.

Out of all activities reported cleanup and storm drain diversion, education and outreach and regional coordination had the highest number of entities working on them. Notably, fewer entities reported activities involving source reduction activities, legislative support and/or advocacy and research on marine debris.

Cleanup efforts and storm drain diversion/ capture are two of the most frequent activities in California to address marine debris. Over 20 entities work on cleanup, removal and diversion efforts. This is a high cost activity that contributes to the substantial expenditure reported in the [recent study](#) by Kier Associates and the Natural Resources Defense Council. The study found that California spends nearly half billion dollars a year preventing marine debris. In this category specific examples of activities reported include California Coastal Cleanup Day, substantial efforts to install and maintain storm drain diversion and capture devices and street sweeping. The high cost associated with this category of activity raise concern. The OPC could play a role in coordinating a more efficient means to reduce marine debris by focusing efforts on prevention and source reduction efforts.

Education and outreach efforts are one of the top reported activities in the report. Virtually all entities reported activities in this category. Significant social media presence and local and community outreach aim to encourage proper waste management, i.e. anti-litter campaigns, and discourage the use of common marine debris items such as disposable plastic bottles and single use plastic bags. Additionally, twelve entities reported working on regulations and bans of common marine debris items. Education and outreach coupled with regulations and bans of common marine debris items throughout cities and counties in California have resulted in significant awareness of marine debris. Yet both categories- education/outreach and regulations/ bans- consist of localized, piecemeal efforts that would benefit from increased coordination by which the OPC could play a lead role in improving. For instance, instead of 70+ local restrictions and/or bans on common marine debris items, industry manufacturers, retailers, and those impacted by marine debris would benefit from statewide, uniform bans and/or regulations. Additionally, the OPC can work to support Thank You Ocean's effort to coordinate a unified message on marine debris through the Ocean Communicator's Alliance.

Most entities reported some level of regional coordination activity. Many entities coordinate on a local scale. For example, there is significant coordination on storm drain diversion and capture efforts among entities in different local regions, such as in the Bay Area and in Southern California. There is also significant coordination and collaboration on data collection, research and monitoring efforts. The collaboration tends to be localized. For example, there is a high level of coordination around the 2013 Bight Regional Assessment Program among entities in Southern California. Statewide, there is substantial coordination on cleanup efforts among federal, state and local agencies with NGOs. Coastal Cleanup Day is a highly successful event each year and an example of successful collaboration. The two efforts that draw statewide coordination are Japanese Tsunami Marine Debris (JTMD) activities and the California Marine

Debris Steering Committee. The West Coast Governor's Alliance Marine Debris Coalition presents a unique opportunity to bring together stakeholders representing state, federal, regional, tribal and NGOs along the West Coast.

Among the least reported activities are source reduction efforts. Very few entities reported work to promote reducing the sources of marine debris. Statewide coordination and collaboration on source reduction measures is one of the most needed, important and pivotal roles the OPC could fulfill in order to efficiently reduce marine debris. The Marine Debris Steering Committee would be an effective tool to create momentum for this activity.

Legislative support and/or advocacy work on marine debris reduction was only reported from NGOs. Entities reported advocacy efforts including support for transparency on end-of-life claims on plastic products, extended producer responsibility and local and statewide bans/regulations on common marine debris items. There is a significant need for state agencies to be able to support legislation aiming to reduce marine debris. The OPC should consider support for legislation that aligns with their goals and objectives as outlined in the Strategic Plan.

Reports of existing and ongoing research on marine debris and research needs provide important insight into the state of knowledge on the issue. Agencies and NGOs have both undertaken research to identify the sources and to create a baseline of marine debris. There is a resounding need for further research on the impacts of marine debris on water quality as well as socio-economic assessments of marine debris impacts. This information will enhance the current regional understanding of the effects of marine debris and enable a more comprehensive and consistent approach to curb the influx of pollution and toxins entering California's waters. The OPC could play a vital role in research coordination should commit to supporting research and initiatives that improve the scientific understanding of the effects of marine debris.

Notably, no activity or collaboration was reported with industry in California. The industries associated with marine debris include manufacturers and retailers of common marine debris items and the associated materials. In order to comprehensively address the complex issue, collaboration with industry will be crucial. As suggested, source reduction is a vital component in curbing marine debris and one in which legislative action is necessary. In order to create politically feasible legislation, collaboration is needed. As a coordinating body, OPC could work to bring together all state actors, including industry to work together to find progressive solutions.

Based on this analysis several activities, in which the OPC could play a lead role, emerge in order to comprehensively address marine debris in California. These include:

- The need for increased collaboration on outreach and education efforts on marine debris, including a unified message

- The need for statewide uniform policy on bans and regulations on common marine debris items.
- The need for statewide collaboration by a unifying body such as the California Marine Debris Steering Committee.
- The need to coordinate and concentrate work on preventing and reducing the sources of marine debris, such as by extended producer responsibility and bans and/or regulations on common marine debris items.
- The need for increased collaboration on marine debris legislation, particularly by state agencies in order to unify efforts.
- The need for state level legislative support by state and local agencies
- The need for increased scientific research particularly on the subject matter of the impacts of marine debris and socio-economic assessment.
- The need for coordination with industry members, particularly manufacturers and retailers of common marine debris items

The reported activities were classified into categories based on the nature of the activity. The fourteen categories are color coded. Please refer to the key below.

Key:

	General Activities
	Abandoned Derelict Vessel Removal
	Storm Drain Capture and Diversion and Measures to Reduce Improper Waste Management
	Cleanup and Trash Removal
	Trash Bin Placement and Trash Management at Events
	Recycling and Composting Activities
	Source Reduction- Prevention Measures to Decrease the Sources of Common Marine Debris Items Including Packaging Materials
	Education and Outreach Activities
	Bans and/or Regulations on Common Marine Debris Items
	Monitoring and Assessment of Marine Debris
	Research on Marine Debris
	Research Needs
	Legislative Support and/or Advocacy for Bills that Aim to Reduce Marine Debris
	Regional Coordination on Marine Debris Activities

DEBRIS FROM LAND

This section contains information provided by **Local, State and Federal Agencies** on their marine debris activities relevant to land based debris sources.

Bay Conservation and Development Commission	
	Between 1997 and the present, the Richardson’s Bay Regional Agency (RBRA) has removed more than 797 vessels from Richardson’s Bay, equating 9,900 tons of marine debris. As of May 2012, there were approximately 160 illegally moored vessels in Richardson’s Bay, the majority of which are either abandoned or resided on. In 2012, the SF Bay Conservation and Development Commission (BCDC) assisted the RBRA in applying for and obtaining a \$500,000 solid waste disposal grant from CalRecycle to support its ongoing vessel removal efforts.
	Between 1995 and 2003, in a project known as Aqua Terra, the Port of Redwood City and local law enforcement removed 113 vessels from Redwood Creek, equating 1,000 tons of marine debris.
	Between 2005 and 2011, Contra Costa County Sheriff’s Department removed 186 vessels from its waterways.
	In 2011, CalRecycle and US EPA partnered to remove approximately 700 tons of marine debris and 15 vessels from the Petaluma River. Two hundred tons of metal was recycled.
	Presently, the Alameda-Oakland Estuary contains 30 abandoned and lived on vessels and other marine debris that is scheduled for removal in 2013 at a cost of \$1.2 million dollars (See below under regional coordination efforts for partners.)

CalTrans	
	Caltrans Institutional Controls include: public education and outreach programs, sweeping, litter removal and improved trash Bin/container management.
	Installation of structural treatment best management practices (TBMPs) statewide which capture trash from highway runoff before being discharged to waterbodies are required as part of roadway improvements or retrofit projects. Caltrans maintains and cleans these devices free of trash and clogging to contain debris effectively. Structural Controls include installation of the following: Full-Capture Treatment Devices (i.e. GSRD);Infiltration Basin; Media Filter;Detention Basin
	Caltrans performs trash removal efforts by targeting hotspots along highways, ramps, especially in highly urban areas.
	Adopt-A-Highway (AAH) Program provides an avenue for individuals, organizations, or businesses to help maintain sections of roadside within California's State Highway System to

	be cleaner and more attractive and at the same time helps to control the growing cost of litter removal.
	Caltrans performs sweeping of roads and shoulders to remove litter and debris.
	Drain Inlet Cleaning- Caltrans inspects drain inlets and performs cleaning when 50% capacity is reached; these activities are typically conducted before the rainy season in order to maintain hydraulic capacity.
	Litter removal is also performed by Caltrans maintenance crews, contracted litter removal, California Conservation Corps, and parolees.
	Caltrans also implements covered trash bins which are placed at vista points, and Park-and-Ride facilities throughout the District to encourage motorists to dispose of trash in containers rather than discarding it onto the roadway or parking lots at these facilities. Such trash bins are kept covered to prevent windblown trash from escaping.
	As part of its Stormwater Program, Caltrans implements guidelines in the detection, prevention, control, and reporting of illegal connections and illicit discharges, illegal dumping, and spill discharges in state highways.
	The Litter Abatement Plan was developed as a comprehensive approach to address the many issues related to litter and achieve a balance between physical intervention and proactive, preventive measures.

CalRecycle	
	From late 2000 to early 2007 CalRecycle (formerly the California Integrated Waste Management Board) approved six partial grants under its Solid Waste Disposal and Codisposal Site Cleanup Program (Cleanup Program) to mitigate the impacts of and remove solid waste from storm water discharges to local waterways, beaches, and estuaries in Southern California jurisdictions. CalRecycle's total expenditures were approximately \$3.7 million.
	In the Fall of 2009 the Cleanup Program performed a \$1.9 million remediation project at the Goat Canyon debris basins in Border Field State Park in San Diego County to install trash collection booms and remove trash and trash-laden sediment that was threatening the Tijuana River estuary. In the Fall of 2012 the Program performed another basin cleanout at a cost of \$1.0 million.
	Provides assistance to stakeholders to develop/strengthen recycling, source reduction, composting programs.
	Assists stakeholders with identifying where receptacles are most needed and ensuring they are in place and maintained so that the public has a resource to dispose or recycle materials instead of littering.

	Provides grants and resources to local governments for education and outreach and purchase of recycling bins.
	Ensures landfills, transfer stations, material recovery facilities, non-disposal facilities are operating in compliance and prevent debris from facilities, such as barrier fencing.
	Ensures household hazardous waste is properly disposed to prevent illegal dumping of materials in drains that lead to the ocean.
	Continues to work with stakeholders on AB 2449 regarding plastic bag recycling
	Staff at CalRecycle continue to interact with Zone Administrators from Recycling Market Development Zones to site and expand businesses in California that will recycle materials, such as plastics.

California Coastal Commission (CCC)	
	The California Coastal Commission organizes California Coastal Cleanup Day, a one-day beach and inland waterway cleanup that has happened 29 years in a row and is the largest annual volunteer event in the state. http://www.coastal.ca.gov/publiced/ccd/ccd.html
	The CCC also directs the year-round Adopt-A-Beach Program, in which volunteers can clean a beach or shoreline in any of the 15 coastal counties and select inland counties. Volunteers must commit to three cleanups per year to be considered an official “adopter,” although student groups are only required to clean once a year. One-time volunteers are welcome at any public cleanup. http://www.coastal.ca.gov/publiced/aab/aab1.html
	Through a grant-making program, the CCC supports the Kids Adopt-A-Beach Day, during which students from elementary schools in several (usually 7 or so) communities up and down the coast participate in beach cleanups and aerial artwork. These children have all participated in a school assembly focused on marine debris prior to their participation in the cleanup. http://www.oceanday.net/

City of Los Angeles	
	The City of Los Angeles has attained a 90% trash discharge reduction from its storm drain system into the Los Angeles River and Ballona Creek Watersheds as of September 2012.
	The City has retrofitted approximately 50,000 catch basins with trash catch basins inserts and/or catch basin curb opening screen covers.
	The City has invested over \$80 million, since 2001, in structural BMPs to significantly reduce trash discharges to the local waterbodies.

County of Los Angeles	
	As part of compliance with nine Trash TMDLs in Los Angeles County, the County of Los Angeles has been implementing various structural and institutional controls over the last decade. As of 2012, the County spent over \$7 million to install nearly 4,000 trash Full Capture Devices in catch basins throughout the County Unincorporated Areas of Ballona Creek and Los Angeles River watersheds, attaining over 90% trash reduction in these areas. This effort and associated expense is expected to double in the near future as the County embarks on implementing other Trash TMDLs in the remaining watersheds of the County.
	In 2004, the County of Los Angeles adopted smoking ban ordinance for all County beaches. In 2009, this ordinance was extended to public parks and golf courses.
	In 2008, the County of Los Angeles adopted a single-use plastic bag ordinance, which bans plastic carry-out bags at stores in the County Unincorporated Areas.
	In 2009, the County of Los Angeles phased out the use of Expanded Polystyrene food containers at all County facilities.
	The County of Los Angeles implements aggressive street sweeping and catch basin cleaning programs in the County Unincorporated Areas.

Department of Boating and Waterways (DBW)	
	DBW is authorized to oversee two grant programs vital to the state's efforts in reducing and eliminating abandoned vessels: the Abandoned Watercraft Abatement Fund (AWAF), and the Vessel Turn-In Program (VTIP).
	Since 1999, the AWAF has provided assistance to local participating agencies in removing 1622 vessels at an average cost of \$3200 per boat. Currently, 20 agencies statewide participate in AWAF with an expected increase to 27 in FY 2013/14.
	The VTIP, a pilot program effective in 2010, has resulted in 180 vessels surrendered by boat owners that had the potential of becoming abandoned, at an average cost of \$1600 per boat. Eleven agencies currently participate; increasing to 18 participants in FY 2013/14.

Environmental Protection Agency Region 9 Marine Debris Program (EPA)	
	In 2012 -2013 EPA R9 awarded the Agency's first source reduction grants to Monterey Bay Aquarium (MBA) and Product Stewardship Institute (PSI). MBA's program trained approximately 100 K – 12 California teachers about source reduction as it relates to decreasing marine debris, and in turn those teachers developed 30 innovative source

	reduction projects with their students. PSI focused on promoting green procurement practices to minimize use of single use disposable packaging with vendors on three coastal UC campuses.
	Recently California State University (CSU) and EPA R9 agreed on a partnership to assess marine debris using EPA R9's beach cleanup protocols wherein debris is not only sorted by type, volume and weight, but also through brand name identification. We are going to use this data to go back upstream to the vendors and manufacturers whose products are most frequently identified as marine debris to explore options with them for source reduction.

Los Angeles County Flood Control District (LACFCD)	
	The Los Angeles County Flood Control District installed trash booms at the mouth of major channels, such as Los Angeles River and Ballona Creek to prevent inland trash from going out to the Ocean. Over 1000 tons of trash is being removed annually from the trash booms.
	As part of the MS4 Permit compliance, the LACFCD conducts visual monitoring and removal of trash and debris from open channel at least once a year before a storm season.
	From 2002 to 2004, the LACFCD conducted a trash monitoring in the Los Angeles and Ballona Creek Watersheds to establish trash baseline and specific trash generation rate per landuse. The study results were used for prioritization of land areas for implementation of Trash TMDLs. Further, the Regional Water Quality Control Board used the study finding to set baseline for many of the trash TMDLs in Los Angeles region.
	In 2005, the LACFCD conducted a special study to assess removal effectiveness of various structural BMPs, such as catch basin inserts and hydrodynamic separators.
	The LACFCD annually sponsors the California Coastal Cleanup Day, organized by Heal the Bay .

Marine Debris Program, NOAA	
	The Marine Debris Program (MDP) and NOAA Restoration Center run an annual Community-Based Marine Debris Removal grant program. Previous grantees (2006 – 2012) have included the San Diego Unified Port District, The Watershed Project, Save Our Shores, UC Davis / SeaDoc Society, and San Francisco Baykeeper.
	The MDP and National Marine Sanctuaries Foundation supported Save Our Shores' Annual Coastal Cleanup Day efforts in Monterey and Santa Cruz Counties (2012 – 2013).
	A 2012 MDP grant to California Emergency Management Agency was awarded to the Coastal Commission's Adopt-A-Beach program to support mini-grants to eight program partners.

	The MDP has an active national outreach and education program focused on public education and marine debris prevention.
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Ocean Protection Council (OPC)	
	In 2011, the Ocean Protection Council commissioned an independent synthesis of scientific information as a place-marker for the current state of research on plastic debris in California's marine environment. The California Ocean Science Trust partnered with USC Sea Grant , to produce the report, Plastic Debris in the California Marine Ecosystem: A Summary of Current Research, Solution Efforts and Data Gaps .
	The OPC convenes a Marine Debris Steering Committee which is comprised of 17 state and federal agencies and the four marine sanctuaries. The Committee agreed that a top priority was to increase communication and awareness among the public regarding Japan Tsunami Marine Debris (JTMD), and that OPC would take the lead on coordinating messaging and developing resources through Thank You Ocean.
	In 2011, an OPC-funded project on cigarette butt waste in beaches was completed. This project was led by Save Our Shores (SOS) in the cities of Santa Cruz and Capitola, CA, as a response to a lack of decrease in cigarette butt waste at beaches with smoking bans. This study demonstrated that smoking bans require corresponding public education and ongoing waste collection and removal to ensure efficacy.
	In April 2009, the OPC issued a Resolution Support for Extended Producer Responsibility Programs . This resolution resolved to target the reduction of packaging to reduce the environmental impacts of products, reduce the costs to local government of handling packaging waste, supports the concept of Extended Producer Responsibility and recommends legislation that implements the CIWMB framework.
	In November 2008, staff brought to the Council an Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter . Implementation Strategy contained the goal to reduce the amount of litter that accumulates in the ocean through the following objectives; <ul style="list-style-type: none"> ○ Reduce single-use plastic packaging and promote sustainable alternatives; ○ Prevent and control litter and plastic debris; ○ Cleanup and remove litter; and ○ Coordinate efforts with other jurisdictions in the Pacific region.
	In February 2007 the OPC adopted the Resolution of the California Ocean Protection Council On Reducing and Preventing Marine Debris . This resolution resolves to pursue a wide-range of recommendations aimed at reducing and preventing marine debris.

State Water Resources Control Board (State Water Board)	
	<p>The California State Water Resources Control Board is considering the adoption of Amendments for Trash in the California Ocean Plan and the Enclosed Bays, Estuaries and Inland Surface Waters (Trash Amendments). The proposed Trash Amendments will include five elements: (1) Water Quality Objective, (2) Prohibition of Discharge, (3) Implementation, (4) Compliance Schedule, and (5) Monitoring. Water Board staff will release a draft Staff Report and Substitute Environmental Document (SED) for public comment. Following this formal release, the State Water Board will hold a public workshop(s) and a public hearing. At this time, staff proposes the State Water Board will consider adoption of the Trash Amendments in Winter 2013.</p> <p>http://www.waterboards.ca.gov/water_issues/programs/trash/index.shtml</p>
	<p>Assembly Bill (AB) 258, which became effective January 1, 2008, adds Chapter 5.2 to Division 7 of the California Water Code, section 13367, entitled "Preproduction Plastic Debris Program." This section of the Water Code applies to facilities in California that manufacture, handle, or transport preproduction plastics, the raw materials used to produce plastic products. Regional and State Water Board staff conduct compliance inspections of preproduction plastic manufacturing, handling, and transport facilities enrolled under California's Industrial General Permit (IGP) for storm water discharges. Collectively these inspections are helping to develop cost-effective regulatory approaches for addressing this pollution problem.</p> <p>http://www.waterboards.ca.gov/water_issues/programs/stormwater/plasticdebris.shtml</p>
	<p>In California, 27 water bodies have approved total maximum daily loads (TMDLs) for impairments due to trash. One of the trash reduction mechanisms is the installation of the full capture devices into all catch basins. By keeping trash from entering the storm drains, this reduces the amount of trash that enters a surface water body and the ocean or beach.</p> <p>http://www.epa.gov/waters/tmdl/docs/34863-RevisedStaffReport2v2.pdf</p>
	<p>The San Francisco Bay Region (Region 2) uses provisions in the San Francisco Bay Area Municipal Regional Stormwater NPDES Permit (MRP) to address trash. The MRP prohibits the discharge of "rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas." The trash-related receiving water limitations identified in the MRP do not place numeric targets on trash but use narrative language to prohibit discharges.</p> <p>http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/phase1r2_2009_0074.pdf</p>

Southern California Coastal Water Research Project (SCCWRP)	
	<p>The Bight'13 Regional Debris Assessment Program will assess the quantities and types of debris in riverine channels. In doing so, we seek to quantify the abundance and types of debris</p>

	<p>in the channels of wadeable streams throughout Southern California Bight watersheds that have the potential to contribute to marine debris. The approach to answering this question involves assessing urban land use sites in the fall, with a mix of new sites to compare seasonal abundances and sites revisited from the spring to look at accumulation rates over the summer dry period.</p>
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Ventura Countywide Stormwater Quality Management Program (VCSQMP)	
	<p>Implement storm drain maintenance programs. Inspect and clean all catch basins and drainage facilities. In 2011-12 over 10,000 catch basins were inspected and cleaned if 25% or more full of debris. In addition, during the same time period, 55,000 tons of trash, sediment, and solid debris were removed from drainage facilities including 13,000 tons from channels and ditches and 42,000 tons from detention basins. All catch basins are labeled with the “Don’t Dump, Drains to Creek/Ocean” message.</p>
	<p>Implement street sweeping programs. In 2011-12 over 100,000 curb miles were swept countywide.</p>
	<p>Require conditions of development that target pollutants of concern, including trash on all new and redevelopment projects.</p>
	<p>Installed trash capture devices on all catch basins and trash receptacles in high-trash generating areas.</p>
	<p>Established programs for trash management at public events.</p>
	<p>Adopted litter and trash ordinances with specific prohibitions for the discharge or deposition of trash that may enter the storm drain system or receiving waters.</p>
	<p>The City of Ojai adopted Single-Use Bag Ordinance.</p>
	<p>The cities, the County, and VCWPD endorsed a pro-rata share of a regional Environmental Impact Report (EIR) to be prepared by Beach Erosion Authority for Clean Oceans and Nourishment (BEACON), which is required to be completed under the California Environmental Quality Act (CEQA) before the model single-use bag ban can be adopted. This is the first step for the other cities and the County to move forward with the consideration of adoption of a single-use plastic bag ban</p>
	<p>The cities of Camarillo and Oxnard, the County and VCWPD have complied with the Revolon Slough/Beardsley Wash Trash Total Maximum Daily Load (TMDL). Compliance has included the installation of full capture trash devices, special monthly trash cleanups, monthly monitoring in accordance with approved Trash Monitoring and Reporting Plan (TMRP) and a Minimum Frequency and Collection (MFAC) Program.</p>
	<p>The City of Ventura, the County and VCWPD have complied with the Ventura River Estuary</p>

	<p>Trash Total Maximum Daily Load (TMDL). Compliance has included the installation of full capture trash devices, special trash cleanups, weekly and/or monthly monitoring in accordance with approved Trash Monitoring and Reporting Plan (TMRP) and a Minimum Frequency and Collection (MFAC) Program. In 2011-12, the City of Ventura and VCWPD conducted arundo and homeless encampment trash removal events within their properties in Ventura River Estuary removing over 550 tons of trash. In addition, the City of Ventura, County, and other Agencies are committed to multi-agency effort to reduce trash and homeless encampments within the Ventura River watershed.</p>
	<p>The City of Thousand Oaks, Ventura County and VCWPD have complied with the Malibu Creek and Lagoon Trash TMDL and Santa Monica Bay Near and Santa Monica Bay Offshore Marine Debris TMDL. Compliance has included the installation of full capture trash devices in high trash areas (Class A catch basins per NPDES MS4 Permit), special trash cleanups, monthly monitoring per approved TMRP/MFAC program. In addition, a Plastic Pellet Spill Response Plan has been submitted to the Regional Water Quality Control Board.</p>
	<p>In 2011-12 the VCSQMP began comprehensive data analysis effort, aiming to identify historical trends in water quality and pollutant of concern to receiving waters.</p>
	<p>Hazardous materials collection events are held throughout the year.</p>

This section contains information provided by **non-governmental organizations** on their marine debris activities relevant to land based debris sources.

Bay Area Stormwater Management Agencies Association (BASMAA)	
	<p>Beginning in 2010, Bay Area cities and counties identified and assessed, and annually clean up and document trash removed from high trash impacted locations on State waters totaling at least one trash hot spot per 30,000 population or one per 100 acres of retail/wholesale commercial land area, and at least one spot per Municipal Regional Permit permittee.</p>
	<p>Beginning in 2010, Bay Area cities, counties, and special districts developed a methodology to determine the baseline trash load from their storm drain systems, and reported preliminary loads in 2012.</p>
	<p>In 2012, Bay Area cities, counties, and special districts produced short-term trash load reduction plans designed to attain a 40% trash load reduction by July 1, 2014.</p>
	<p>By February 1, 2014, Bay Area cities, counties, and special districts will develop long-term trash load reduction plans designed to attain a 70% trash load reduction by July 1, 2017 and a 100% reduction by July 1, 2022.</p>
	<p>By July 1, 2014, Bay Area cities and counties will have installed and maintained full trash</p>

	capture devices to treat runoff from an area equivalent to 30% of retail/wholesale commercial land uses. Installation of many of these devices (more than 4,000) will have been made possible through the Bay Area-wide Trash Capture Demonstration Project , a project of the San Francisco Estuary Partnership, using Federal stimulus funds (American Recovery and Reinvestment Act of 2009) and state bond funds.
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California Coastkeeper Alliance	
	Works to strengthen the State Water Board trash policy as a Public Advisory Group member, and solicit input from local stakeholders.
	Coordinates with the Clean Seas Coalition to support statewide source control legislation, including SB 405 and AB 158 (plastic bag bans), AB 521 (marine plastic pollution producer responsibility), and SB 529 (fast food packaging reduction).
	Advocates for the State Water Board to implement initial trash reduction programs in the Phase II Small MS4 General Stormwater Permit (MS4 Phase II), and for the State Water Board to re-open its municipal stormwater permits (MS4 Phase II and Caltrans MS4 permits) to insert the Board’s trash policy requirements once adopted.
	Identifies waterways impaired by trash, and collecting and submitting data and photos to support waterways’ inclusion on the State Water Board’s 2012 303(d) List of Severely Polluted Waters.
	California Waterkeeper groups are actively monitoring critical trash “hotspots” throughout the state, with several Waterkeepers producing SWAMP-compatible data. Along with Rapid Trash Assessment methodology for monitoring trash, several California Waterkeepers are also conducting micro-plastics and open-ocean trawl monitoring.
	Local California Waterkeepers are conducting regular beach cleanup events throughout the state and are using the events to conduct trash source identification.

Californians Against Waste	
	Tracks/advocates for policies to reduce waste and/or increase recycling for problem products that can end up as marine debris.
	Sponsors/supports statewide legislation on issues related to marine litter reduction. Some related bills this year include: SB 405 (Padilla) Plastic bag reduction, SB 529 (Leno) Fast food packaging reduction, AB 521 (Hueso-Stone) Marine debris producer responsibility, AB 1001 (Gordon) Bottle bill expansion, AB 1142 (Bloom) Smoke free beaches/parks.
	Helps local agencies adopt single-use bag ordinances and polystyrene food packaging

	ordinances. Today, there are more than 76 cities or counties that have an adopted bag ban, and a similar amount for adopted foam food packaging bans.
	Participates at CalRecycle, Ocean Protection Council, and other state agencies on marine pollution issues, including protection of and regulatory processes for Rigid Plastic Packaging Container program and Bottle Bill program.
	Commented on the 2012 revision of the Federal Trade Commission Green Guides for the Use of Environmental Marketing Claims.
	Sponsored recent legislation (SB 567 by Senator DeSaulnier) to prevent greenwashing and false end-of-life claims on plastic products. For the last three years we have worked on a campaign to enforce this law, and the Green Guides, on egregious violations.
	Actively participates as a member in the American Society for Testing and Materials on proposed standards and revisions of current standards for plastics, including degradation and recycling of plastics.
	Supports efforts to enforce AB 258 (Krekorian), a bill we supported in 2007 to prevent pollution of plastic production pellets/nurdles.

Clean Sea Coalition	
	Facilitates the Clean Seas Coalition: a nationwide coalition of NGOs, businesses, academics, government representatives and individuals working to reduce plastic in our oceans and waterways.
	Promotes source reduction of plastics through advocacy, regulation and legislation: at the local, state, national and international levels.
	Advocates for CA state bills on: smoking ban; polystyrene ban; plastic bag bans; Extended Producer Responsibility; and other packaging bills (i.e. Leash the Lid, etc.)
	Assists in the development of and supports the CA State Trash Policy
	Supports the implementation of ban ordinances at the local level, in CA and other states and countries.
	Participates in legal defense of source reduction ordinances.
	Participates in development of local, state, national and international policy initiatives about marine debris, sustainable packaging, EPR, etc.
	Facilitates the reporting and compiling of information critical to source reduction legislation and ordinances; information such as source identification of trash, trash characterization,

	environmental and health impacts of plastic on humans and other species, etc.
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Heal The Bay	
	In 2012, Heal the Bay conducted 632 beach clean-ups at LA beaches, with over 36,400 volunteers.
	Currently working on statewide marine debris prevention legislation (e.g. EPR (AB 521), plastic bag bans (SB 405 and AB 158), fast food container (SB 529), and opposing legislation that would countervail marine debris prevention efforts.
	Participating in development of State Water Board trash policy through Public Advisory Group and advocacy efforts.
	Assisted with development and implementation of trash TMDLs in Los Angeles area.
	Working on local and tracking adoption of single-use bag policies (currently 72 municipalities in CA with a single-use bag policy under 51 ordinances) and policies that require more sustainable alternatives to foam food containers.

Monterey Bay Aquarium	
	In 2013, the Monterey Bay Aquarium supported AB 521, a bill authored by Assemblymember Mark Stone and Senator Ben Hueso that would set goals for reducing plastic pollution in our coastal waters and require producers of plastic products to join consumers and state and local governments in addressing the problem of marine plastic pollution. The bill was held in the Assembly Appropriations Committee this year but we will continue to support this policy in 2014.
	The Aquarium also supports local ordinances to ban plastic bags and polystyrene food-packaging in communities around the Monterey Bay.

Natural Resources Defense Council	
	Helped negotiate and defend in court the Los Angeles Trash TMDLs.
	For 22 years have produced Testing the Waters, an analysis of beach water quality at key recreational beaches around the country: http://www.nrdc.org/water/oceans/ttw/ . The 2013 report will include a feature on trash as a pollutant of concern off California's beaches.

	Since 1990's, NRDC has advanced improved waste management, recycling and extended producer responsibility laws and policies in a variety of states to address range of problematic waste products. The organization also defends such laws from attack in court.
	Developed and continuing to refine a unique producer responsibility program to address marine plastic pollution. This program was introduced in 2013 in AB 521 (Stone and Hueso).
	Cultivating ongoing information exchange at the international level, between experts, government representatives and stakeholder through a web based platform (www.stopplasticpollution.org) and through engagement with the Convention on Biological Diversity, the Global Environment Facility, and at the United Nation (UN) Conference on Sustainability in Rio de Janeiro in 2012. Educated and engaged policymakers from around the world about the problem of marine debris and about effective solutions and helped achieve a final agreement and commitment to address marine pollution, especially plastics, from land-based sources.
	NRDC is a lead member of the UN Environment Programme's Marine Litter Partnership, and hosted a December 2012 meeting of experts in marine litter source reduction law, policy and market innovations. Future meetings of this group to focus on extended producer responsibility are under development.
	Assist colleague organizations, e.g. in the Clean Seas Coalition, by supporting California State and local legislation to control some of the most problematic forms of plastic waste (e.g., single-use plastic bags and polystyrene take-out containers).

Ocean Conservancy	
	Convening an academic working group at the National Center for Ecological Analysis and Synthesis (NCEAS) at UCSB, to quantify the annual input of plastics entering the ocean globally, on an annual basis.
	Conducting brand characterization of marine debris items found on U.S. beaches.
	Modeling historical debris data to identify whether beaches are "sources" or "sinks" for marine debris. Modeling has been successfully completed on small scale but looking to expand.
	Rolling out new International Coastal Cleanup data form and supporting materials that apply material-specific classification to debris items.

Oikonos	
	Oikonos is working with the Ocean Stewardship Committee at the Berkeley Yacht Club to create regular shoreline cleanups along the Berkeley Marina shorelines.

Save Our Shores	
	Conducts an average of 250 inland and beach cleanups per year.
	Led the effort to ban styrofoam food containers in Santa Cruz City, Santa Cruz County, Watsonville, Scotts Valley, Capitola, Carmel, City of Monterey, County of Monterey, Pacific Grove, Seaside, Del Rey Oaks, Salinas, Marina.
	Led the effort to expand the foam ban to include retail sale of foam products in City of Santa Cruz, County of Santa Cruz, Capitola.
	Led the effort to ban plastic bags in County of Santa Cruz, City of Santa Cruz, Watsonville, Capitola, City of Monterey, Carmel.
	Led the effort to expand the plastic bag ban in the County of Santa Cruz to include restaurants.
	Is working with restaurants to reduce their use of disposable plastics. Currently they are leading the "Last Plastic Straw" campaign - encouraging restaurants to only give out straws upon request, or eliminate straws, or replace with paper or aluminum alternatives.

Surfrider Foundation	
	Rise Above Plastics (RAP) program's mission to reduce the impacts of plastics in the marine environment by raising awareness and advocating for a reduction of single-use plastics. This program is most successful in bag and EPS foam bans at the local level. http://www.surfrider.org/programs/entry/rise-above-plastics
	Hold On To Your Butt program – designed to keep cigarette butts off the beach through smoking bans, awareness and receptacles.

Turtle Island Restoration Network	
	<i>Bag the Plastics</i> campaign's goals are to reduce the impacts of plastics to endangered sea turtles and ocean wildlife through raising awareness and supporting policy advocacy for a reduction of single-use plastics and polystyrene foam items (http://www.seaturtles.org/plastics).

	<p><i>Marine Debris Action Teams</i> lead scientific assessments of marine debris density on shorelines and remove debris from the ocean ecosystem. To date, over 15,000 items have been recorded and removed from California beaches, density data from six beaches has been collected for two years consecutively, and methods training delivered to professionals at seven ocean conservation organizations. Staff and volunteers also conducted micro-plastics and on-water trawl monitoring.</p>
	<p>The new <i>Create Plastic-Free Sea Turtle Habitat</i> project works to transform sea turtle beach conservation stations into community centers for marine debris education, research, and beach cleanups. After its launch in 2013, 800 pounds of garbage were removed from sea turtle beaches in Costa Rica in one week.</p>

DEBRIS FROM OCEAN

This section contains information provided by **local, state and federal agencies** on their marine debris activities relevant to ocean based debris sources.

California Coastal Commission (CCC)	
	<p>Both the Coastal Cleanup Day Program and Adopt-A-Beach Program deal with debris that washes up on shore from the ocean, as well as debris from land-based sources.</p>
	<p>In 2013, the CCC launched a new Japan Tsunami Marine Debris Cleanup Program in all 15 coastal counties, seeking to gather information about and remove debris that originated with the 2011 tsunami in Japan. http://www.coastal.ca.gov/publiced/jtmd/jtmd.html</p>

CalRecycle	
	<p>CalRecycle provides assistance to stakeholders with piers or boardwalks on waste reduction and recycling to reduce the amount of debris discarded into the ocean</p>
	<p>Beginning in 2010 CalRecycle undertook a series of Cleanup Program pilot projects to directly clean up marine debris and abandoned vessels in California's waterways. Five pilot projects were completed by CalRecycle's contractors with assistance from other agencies at sites in Contra Costa, Sacramento, and Sonoma Counties. The pilot projects were completed over a period from early 2010 to late 2012 at a total cost of \$2.6 million. A cleanup pilot project is currently underway in the Port of West Sacramento in Yolo County and another is under development in the Oakland Estuary in Alameda County. In addition, in 2012 CalRecycle provided \$495,000 grant to the Richardson Bay Regional Agency for a pilot project to clean up abandoned and derelict vessels in Richardson Bay in Marin County.</p>

CalTrans	
	In activities or projects located above or within waterbodies, Caltrans consults with various stakeholders and apply certifications from environmental agencies to ensure debris and other pollutants will not affect the surrounding water quality.

City of Los Angeles	
	The City of Los Angeles operates a series of stormwater low flow diversions at outlets to Santa Monica Bay that prevents dry-weather nuisance flow from entering the ocean. Preventing trash, bacteria, and other pollutants from entering the Bay.
	The City of Los Angeles is currently constructing dry-weather flow reduction projects in the Santa Monica Bay Watershed. These projects will capture trash and other pollutants as well as beneficially use the flow for groundwater augmentation or above ground irrigation.

Environmental Protection Agency Region 9 Marine Debris Program (EPA)	
	Since early 2012, EPA R9 has worked with CA State and county agencies to develop and disseminate assessment protocols for handling potential tsunami debris making landfall that may contain oil or hazardous materials. The protocols were also shared with Coastal Tribes, NPS, BLM, and the States of AK, OR, WA, HI, and Mexico and British Columbia. EPA R9 also worked collaboratively with CA Coastal Commission to develop protocols for volunteer groups interested in helping collect marine and tsunami debris.

Marine Debris Program, NOAA	
	The MDP, NOAA Southwest Fisheries Science Center, NOAA Office of National Marine Sanctuaries (Cordell Bank and Monterey Bay), and UC Davis / SeaDoc Society collaborated on survey, assessment, and removal of derelict fishing gear (DFG) and other marine debris in deepwater benthic environments in Central and Southern CA (http://montereybay.noaa.gov/resourcepro/resmanissues/lostgear.html).
	The MDP coordinates the international response to debris generated by the March 2011 earthquake and tsunami in Japan. This includes shoreline monitoring and assessment, collection and tracking of debris sightings, aerial and satellite detection efforts, close coordination and collaboration with the impacted states and other federal and local partners, addressing invasive species concerns, outreach and communication efforts, and modeling the trajectory of tsunami debris.

	<p>The MDP partners with the National Fish and Wildlife Foundation, Covanta Energy, and Schnitzer Steel on the Fishing for Energy program, which provides free port-side disposal options for derelict and retired fishing gear and offers grants for gear removal and assessment efforts. In 2012, Fishing for Energy placed a temporary disposal bin in Long Beach; the program is currently scoping other locations in California.</p>
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Monterey Bay National Marine Sanctuary	
	<p>Using a remotely operated vehicle, the Monterey Bay National Marine Sanctuary and partners retrieved lost fishing gear including over 1000 feet of rockfish gillnet, a variety of crab and spot prawn traps and 700 pounds of clump weight lead.</p>

Southern California Coastal Water Research Project (SCCWRP)	
	<p>The Bight'13 Regional Debris Assessment Program will assess the quantities and types of debris in marine and estuarine sediments and epibenthos. Here we seek to evaluate the differences in the abundance and types of debris found in surface sediments (epibenthos) retained from otter trawls and within sediments among major Bight estuarine and marine habitat types.</p>
	<p>The Bight'13 Regional Debris Assessment Program will assess the prevalence of plastic in nearshore demersal and pelagic fish. Here we will quantify the amount and types of debris ingested by demersal and pelagic fish found in onshore versus offshore habitats. Fish stomach contents will be analyzed to determine if plastic is present, and in what types and amounts.</p>

State Water Resource Control Board	
	<p>The California Ocean Plan specifies that wastes discharged to the ocean must be essentially free of floatable, will become floatable or settleable material or substances. The California Ocean Plan further designates 34 Areas of Special Biological Significance (ASBS). Waste discharges are prohibited into an ASBS.</p> <p>http://www.waterboards.ca.gov/water_issues/programs/ocean/index.shtml</p>

United States Coast Guard (USCG)	
	<p>USCG's primary concern with marine debris is that it may obstruct the safe navigation of federally regulated waterways. Coast guard will generally coordinate with US Army Corps of</p>

	Engineers to remove debris and the Waterways Management Division will monitor, notify mariners, or mark it on navigational charts if it becomes a permanent obstruction to navigation
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Ventura Countywide Stormwater Quality Management Program (VCSQMP)	
	The cities, the County and VCWPD actively participate in the annual Coastal Cleanup Day events. We organize the cleanup of over 22 inland waterbodies and coastal beach locations. In 2012 over 11,000 pounds of trash and recyclables were removed by over 3,300 volunteers at over 36 miles of shorelines. It is worth mentioning that Ventura County’s beaches continue to score high on Heal the Bay’s Beach Report Card. In the 2012 report, Ventura County’s beaches received 100 percent A grades for both dry and wet weather and received the coveted spot of having the most pristine beach water in Southern California.

This section contains information provided by **non-governmental organizations** on their marine debris activities relevant to ocean based debris sources.

Bay Area Stormwater Management Agencies Association (BASMAA)	
	Bay Area cities, counties, and special districts regularly clean up ocean debris deposited by the tides in shoreline areas and up creeks through routine maintenance programs and volunteer cleanup events (e.g., Coastal Cleanup Day).

California Lost Fishing Gear Recovery Project, UC Davis

	Contracts with commercial fishermen to recovery lost fishing gear from coastal marine waters, utilizing SCUBA techniques and equipment, and with funding from state and federal agencies and private foundations.
	Maintains a database of all lost commercial fishing gear observed and recovered by project personnel and ocean users.
	Provides a website with information regarding lost fishing gear in California: http://www.seadocsociety.org/lostfishinggear .
	Maintains a toll-free hotline and an online reporting form for lost fishing gear accessible via the website; these reporting systems are monitored daily and enable anyone to report the loss of or sighting of lost fishing gear; a link to the website can be found on the California Department of Fish & Wildlife website.
	Produced a California Lost Fishing Gear Recovery Project Policies & Procedures Manual,

	available for downloading from the project website.
	Serves as a Point of Contact for emerging commercial and recreational fishing gear recovery projects nationwide.

Heal the Bay	
	Track efforts if we hear of a dumping issue.

Ocean Conservancy	
	National Center for Ecological Analysis and Synthesis (NCEAS) working group is identifying data sources for which ocean-based debris estimates can be generated (e.g., fishing, cruise ships) and an estimate of global “ocean-derived” plastic debris can be calculated.

Oikonos	
	Aspects of Oikonos research on plastic ingested by Black-footed albatross and Northern fulmar seabirds has promoted an awareness for urgent actions to stop the flow of plastic entering the ocean.
	The research project on Northern fulmars is entitled: BiOPs - Biological Indicators of Ocean Plastic Pollution and the main goal is to improve the health of the North Pacific Ocean by reducing the amount of pollution entering the marine food webs. To this end, Oikonos is using seabirds and fish as biological samplers of litter at sea and quantifying changes in the amount and types of bioavailable plastic pollution levels in the major oceanographic regions of the North Pacific.
	The research project on Black-footed albatross provided important information to create the activity package in partnership with Cordell Bank National Marine Sanctuary and the Papahānaumokuākea Marine National Monument for middle school/high school educators entitled <i>Winged Ambassadors Ocean Literacy through the Eyes of Albatross</i> . Lessons include <i>Introduction to Seabirds, Tracking Albatross Migrations, Protecting Ocean Hotspots, Bolus Analysis, and Campus Debris Survey</i> .

Save Our Shores	
	Has been running the Dockwalker program since 1992. This is a program where we train volunteers to walk the docks in the 4 harbors of the Monterey Bay Sanctuary to talk to boaters

	about not polluting and hand out free clean boating kits which provide tools to prevent pollution. Information includes where to safely dispose of used oil and what the fines are for disposing of trash at sea. This program was adopted by the State of California as the statewide model and has been adopted by some other states as well.
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Turtle Island Restoration Network	
	Campaigning to remove drift gillnets as a legal fishing gear in California. Mile-long derelict drift gillnets represent a source of potential marine debris that harms ocean habitat and entangles marine life.
	Recording and reporting floating debris items when engaged in offshore Leatherback Watch Program cruises. (http://www.seaturtles.org/events)

OUTREACH AND MESSAGING

This section contains information provided by **local, state and federal agencies** on their outreach and messaging activities relevant to marine debris.

Bay Conservation and Development Commission	
	BCDC Commission Briefing on Abandoned Vessels and Marine Debris, March 21, 2013.
	In 2002, the Port of Redwood City adopted ordinances to better manage its harbor and waterways and prevent the return of the so-called “Aqua Terra” problem.
	In 2005, Contra Costa County established and implemented ordinances to manage an illegal vessel-mooring problem that had crept up on the region.
	In 2008, following Contra Costa County’s lead, Solano and Sacramento Counties established and implemented ordinances to manage their illegal vessel-mooring problem.
	In 2011, the City of San Leandro updated its vessel mooring ordinances to include all of the water areas within the City limits in addition to the marinas and regularly issues violation letters to the owners of illegally moored vessels.
	Senate Bill 122 to extend the VTIP Program

CalTrans	
	For Caltrans Non-highway facilities Caltrans performs stenciling of storm drain inlets which

	<p>serves to educate the public and Caltrans staff about the connection between storm runoff and receiving waters. Caltrans currently stencils storm drain inlets in maintenance stations, in Park-and-Ride facilities, and along state routes as stenciling is not required in areas where pedestrian access is prohibited.</p>
	<p>Using a comprehensive, multicultural approach and in partnerships with multiple agencies, the Don't Trash California campaign targets primary offenders of highway littering, as well as the general public, to create a social mindset in California that California does not tolerate polluting our freeways and highways.</p>
	<p>The Adopt a Highway Program has reached out to more than 120,000 Californians that have cleaned over 15,000 shoulder-miles of roadside. AAH Informational Handouts are available for those who want to participate in the program.</p>

CalRecycle	
	<p>CalRecycle utilizes the majority of forms of social media for programs related to disposal, recycling, technology, composting and legislation.</p>
	<p>CalRecycle staff provides education and outreach to stakeholders on ways to reduce illegal dumping, littering and recycling programs located at beaches.</p>

California Coastal Commission (CCC)	
	<p>The Coastal Cleanup Day, Adopt-A-Beach, and to some degree, the Japanese Tsunami Marine Debris (JTMD) Cleanup programs all have outreach and messaging components.</p>
	<p>The CCC makes an especially big push around outreach and messaging for Coastal Cleanup Day, which includes event posters, postcards, t-shirts, web pages, and social media. You can access our Facebook page at www.facebook.com/CaliforniaCoast and our Twitter page at twitter.com/cleanupday</p>

City of Los Angeles	
	<p>The City of Los Angeles' Stormwater Program is one of the sponsors that brings about Kids Ocean Day at Dockweiler State Beach. This event takes elementary age kids to the beach to learn about the ocean and how to sustain it. Now in its 20th year, the most recent event in 2013 brought over 3,000 kids to the beach.</p>
	<p>The City of Los Angeles' Stormwater Program is active in the social media using internet tools such as its website, Facebook, YouTube, and blog to distribute its message.</p>

	The City of Los Angeles' Stormwater Program provides free of charge educational materials to residents, schools, environmental and community-based organizations.
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Department of Boating and Waterways	
	DBW works closely with law enforcement agencies and public marinas to develop awareness and understanding of these two grants. Attendance at meetings of state, federal and public entities, speaking engagements, site visits, and diligent attention to abatement activity of participants has helped strengthen and grow participation of local public agencies.
	"Is Your Boat An Anchor?" This VTIP poster was designed and distributed by DBW to participants for their outreach efforts to their local communities.
	DBW maintains information on its website for potential and participating agencies as well as the public.

Environmental Protection Agency Region 9 Marine Debris Program (EPA)	
	EPA R9 participates in numerous conferences, workshops and trainings ranging from the local level to international organizations presenting information related to our Regional Marine Debris Program, giving routine updates on our research work, grant opportunities and collaboration activities. http://www.epa.gov/region9/marine-debris/index.html

Los Angeles County Flood Control District (LACFCD)	
	As part of the efforts to meet AB 939 solid waste diversion requirements as well as the MS4 Permit requirements, the County and the LaCFCD established the www.CleanLA.com website to provide outreach to County residents, businesses, institutions, and government to promote sustainable living such as the "Reduce, Reuse, and Recycle" strategy.

Marine Debris Program, NOAA	
	In 2013, the MDP announced a Federal Funding Opportunity for outreach and education partnership projects, which is planned to continue on an annual basis contingent on funding availability.

	The MDP has a wealth of information and outreach materials, resources, project information, videos, and links online at http://marinedebris.noaa.gov , which includes links to social media including blogs, Facebook, and Twitter.
	The MDP developed a number of Japan tsunami marine debris – specific outreach tools and materials, including brochures, posters, graphics, videos, and podcasts.
	The MDP recently revised a set of lesson plans for grades 1 through 12, “Turning the Tide on Trash”, which is available for download at http://marinedebris.noaa.gov/outreach/activity.html . The MDP runs an annual “Keep the Sea Free of Debris!” art contest for K-8 students

Monterey Bay National Marine Sanctuary	
	Reduce benthic hazards to marine organisms posed by lost fishing gear. Gear can create long-term entrapment mechanisms that continuously impact fish and crustaceans for many years. Net materials are constructed to be strong and resilient, thus preventing escape of entangled wildlife and persisting in the environment for decades. Nets and traps have also been documented to entangle bottom feeding whales and other marine mammals, becoming ensnared on flukes and fins.
	Removing gear from the benthos also provides a safer environment for deepwater submersible researchers and fishermen. Lost fishing gear can cause hazards to fishing gear being actively used by fishermen. For example, lost traps may snag additional traps being set nearby. Catching new gear on lost gear is a nuisance and a hazard.
	Provide HD images and video to the public as shared via Facebook and SIMoN (Sanctuary Integrated Monitoring Network Photo Library).

Ocean Protection Council (OPC)	
	The Ocean Protection Council in partnership with the National Oceanic and Atmospheric Administration (NOAA) runs a statewide outreach campaign, Thank You Ocean. Thank You Ocean has prioritized marine debris as one of their top four priority issues. The Thank You Ocean website features information about marine debris, Japanese tsunami marine debris as well as action items for the public to reduce their personal impact on marine debris. Thank You Ocean also has featured marine debris on several of their bimonthly podcast productions. http://www.thankyouocean.org/threats/marine-debris/

Southern California Coastal Water Research Project (SCCWRP)	
	Results from the Bight'13 Regional Debris Assessment Program will be used by participants to outreach to the public as well as stakeholders managing land and ocean resources.

State Water Resource Control Board (State Water Board)	
	The State Water Board released a short Trash Video on the September 13, 2012. This video highlights the issue and challenges of trash throughout state waters (i.e. rivers, lakes, and ocean) and details the role of the State and Regional Water Boards in finding a solution. http://www.waterboards.ca.gov/videos/video_pages/beaches.html

United States Coast Guard (USCG)	
	Contact local Coast Guard units to report marine debris in federally regulated channels.

Ventura Countywide Stormwater Quality Management Program (VCSQMP)	
	The VCSQMP has an extensive public outreach program, "Community for a Clean Watershed", that includes a campaign focusing on trash. The program includes messaging via television, radio, webpage, Facebook, and print advertising. In addition, school outreach is conducted with a focus on litter prevention. Visit our outreach website at www.cleanwatershed.org to view the program's outreach efforts, including the commercial, "A Day in the Life" on trash. Over 7 million impressions are made annually via the countywide outreach program.
	In addition to the VCSQMP's outreach, the Ventura County Coalition for Clean Waterways, of which most cities, the County and VCWPD are members of, organize Coastal Cleanup Day in Ventura County at over 22 sites and sponsors a very intensive social media campaign for the event. Visit the website at www.vccoastcleanup.org or Facebook at www.facebook.com/VenturaCountyCoastalCleanupDay .
	In addition to the countywide efforts, each of the ten cities and the County run outreach campaigns with a focus on trash, that includes Earth Day events, newsletter mailouts, and school outreach programs.

This section contains information provided by **non-governmental organizations** on their outreach and messaging activities relevant to marine debris.

America's Cup Healthy Ocean Project	
	<p>Organization of and participation in 16 shoreline or beach clean-ups here in the Bay Area, in partnership with Sea Scavenger. These clean-ups have resulted in over 1600 volunteer hours and more than 8000 pounds of trash removed from the shoreline. Additional clean-ups are planned through September 2013.</p> <p>Periodic public film and lecture series events, many of which focused on the issue of marine debris. However, each event includes introductory discussions of the ACHOP commitment to keeping plastics out of the ocean. Further public events about marine debris are being planned during this summer's America's Cup.</p>
	<p>Support for the Zero Waste racing events in accordance with the America's Cup Sustainability Plan. The October 2012 America's Cup World Series (ACWS) event had a 98% waste diversion rate, and this summer's event will similarly include measures such as no single-use plastic bottles; compostable ware at all concessions; Recycle/Compost stations throughout the venue; and volunteers to help guests with sorting along with back-of-house waste sorters.</p>
	<p>An ACHOP exhibit, which debuted during ACWS events in the summer and fall of 2012. An enhanced exhibit will be installed on Marina Green in summer 2013, and plastics messaging will also be present throughout Piers 27 and 29. This messaging is estimated to be viewed by millions of visitors.</p>
	<p>Ongoing online and social media content encouraging the America's Cup audience and the general public to take individual action in support of ocean health.</p>

Bay Area Stormwater Management Agencies Association (BASMAA)	
	<p>In 2004-05, as part of a multi-year Regional Advertising Campaign focused on raising watershed awareness, BASMAA added behavior change messages, including an anti-littering message.</p>
	<p>Starting in 2006-07, BASMAA has conducted at least one media pitch every year to Bay Area media outlets focused on preventing litter and cleaning up areas with significant amounts of trash.</p>
	<p>In 2011-12, BASMAA developed and launched a 3-year Regional Outreach Campaign, Be the Street, using a social media approach to create a new social norm for littering in a targeted sector of the population – primarily young males (aka "Rubbish Rebels").</p>

	Bay Area cities and counties have supplemented BASMAA's Regional Advertising Campaigns and Regional Outreach Campaign with complementary and locally focused efforts.

California Coastkeeper Alliance	
	Conducts outreach to local organizations on the development of the State Water Board's trash policy around coastal cleanup day and other beach cleanup events. We collect and use beach cleanup day statistics and photos in advocacy to the State Water Board for a strong trash policy.
	Educates media and the public on the content and State Water Board process to develop a statewide trash policy. Developed a briefer to summarize the trash policy components, describe its impact to municipalities, and relation to bag bans and other source reduction efforts.
	Works with California Waterkeepers to provide information to local media outlets on trash impacts to local waterways and tips on how to reduce trash when visiting outdoor areas (eg. Los Angeles Waterkeeper's 10 minute trash cleanup).
	Encourages the public to report marine debris and other sources of pollution via the <i>Swim Guide</i> smartphone application and local Waterkeeper hotlines.

Californians Against Waste	
	Conducts informational presentations on the need for and enforcement of California's anti-greenwashing plastics labeling law.
	Participates in panels on single-use plastic pollution and ways to reduce it.
	Maintains website with an online activist tool kit for local bag bans and a regularly updated list of local bag and food packaging ordinances.
	Provides public updates on marine-debris related bills, ordinances, and issues via website blogs, social media outlets, and action alerts to members.

Heal the Bay

	Delivers presentations about marine debris prevention and what people can do in their daily lives at beach clean-ups, Speakers Bureau presentations (Heal the Bay volunteer corps of 50 speakers give multi-media presentations to over 40,000 people annually), Youth Summits (4 annually), and other outreach events.
	Conducts outreach through social media via Twitter (>31,000 followers), Facebook (>9,500 likes), and Instagram (2450 followers), as well as Majestic Plastic Bag You Tube video. We may be hosting some Twitter parties on marine debris this year, contingent upon funding.
	Runs the Los Angeles International Coastal Clean-up Day which includes over 60 sites.
	Features a plastic pollution exhibit at our Santa Monica Pier Aquarium (more than 85,000 visitors annually).
	Hosts an interactive Heal the Bay marine debris database (used with beach clean-up groups and schools): http://www.healthebay.org/about-bay/pollution-101/marine-debris-database

Monterey Bay Aquarium	
	In 2011 we reopened our Ocean Travelers gallery, which now exhibits works by artists who have focused on ocean conservation. Several art installations are made from everyday plastic items and tell stories about how plastic marine debris impacts open-ocean animals like seabirds, sea turtles and whales. Our Guest Ambassadors also utilize the exhibit to interpret the impacts of marine debris with visitors throughout the year and with students during the summer through our Teen Conservation Leaders program. (https://www.montereybayaquarium.org/efc/efc_plastic/)
	In the 2012-2013 academic year, we hosted a three-part Ocean Plastic Pollution summit to help teachers and their students reduce single-use plastics in their schools and communities. The summit included fall, winter, and spring sessions (two of which were overnights) at the Aquarium, addressed the science behind plastic issues, and offered networking opportunities for teachers. It also included support for teachers and students who undertook various action projects targeting source reduction of plastic and involving measurable data and communication of results to the school or community. Nearly 30 teachers and their students completed projects that ranged from reduction of plastic utensils in the cafeteria to purchasing hydration stations for use with reusable water bottles. We will be hosting another three-part summit in 2013-2014.

Natural Resources Defense Council (NRDC)	
	NRDC has 1.4 million members and activists nationwide who periodically receive information about our work on marine plastic pollution. We also send action alerts and information to our

	½ million California members and activists.
	Created and are continuing to update a coalition website for groups interested in supporting producer responsibility for marine plastic pollution at www.stopplasticpollution.org
	Produced a short film to explain producer responsibility for marine plastic pollution: http://youtu.be/Lkuek9RqjXE

Ocean Conservancy	
	Provides an education program for teachers, volunteer organizations, etc. to be used prior to, during, and following Cleanup events in order to build a holistic understanding about the issue of ocean trash.
	Runs a social media campaign on plastics as a disruption to the natural order of things, emphasizing the inhumanity of plastics in the ocean.

Oikonos	
	Use of results of Oikonos research on plastic ingested by Black-footed albatross and Northern fulmars has been used to inspire people of all ages to be involved in ocean stewardship and the prevention of plastic pollution.

Save Our Shores	
	Save Our Shores (SOS) runs the Annual Coastal Cleanup Day for Monterey and Santa Cruz County which includes 70 sites and up to 4,000 volunteers.
	Attend at least 50 community events in both counties where we distribute information about marine debris.
	Run monthly beach cleanups in both counties where we conduct a marine debris presentation before the cleanup.
	In the past year we have increased the number of corporate groups coming out for cleanups 10 fold. These groups receive a presentation on marine debris before cleaning the beach.
	Run the Adopt A Beach program in both counties so we give a marine debris presentation to all of these groups on their first cleanup.

	Send out a newsletter three times a year that always includes information about marine debris and this reaches 5,000 people.
	Send out a monthly electronic newsletter that reaches 5,000 people and includes information about upcoming cleanups. Collect data at all of our cleanups and we post the information on our website and on the Monterey Bay Sanctuary's SIMoN (Sanctuary Integrated Monitoring Network) site.
	Conduct outreach through our Facebook and Twitter accounts and our Blog. June 2013 we launched a Beachkeepers program so we have additional social media accounts for that program that caters to individuals going out and cleaning up their favorite beach on their own.
	Give presentations to civic organizations such as Rotary groups approximately 25 times per year.
	Created a marine debris curriculum and we were awarded the Santa Cruz County Green Schools contract for the past three years. We reach over 3,000 students per year in all grade levels with our in-class and on the beach presentations.

Surfrider Foundation	
	The Surfrider Foundation maintains a website, Facebook, Twitter and Blog (http://www.surfrider.org/coastal-blog/c/rise-above-plastics) accounts.
	Conducts grassroots outreach through our 84 local Chapters.
	Surfrider holds "Teach the Teacher" courses so that the issues can spread through the community through word of mouth.

Turtle Island Restoration Network	
	Focus of outreach messaging is linking the fact that 37% of leatherbacks encountered have ingested plastic, California's coast is a critical habitat feeding area, the Pacific leatherback is now the official marine reptile of the State, leatherbacks mistake plastic for their jellyfish prey, and Californians should work to protect them from plastic pollution.
	Delivering presentations about the impacts of plastic marine debris to marine life (4,000 audience annually), leads and supports beach clean-ups (12-20 annually), and promotes advocacy at outreach events (10,000 audience annually).

	<p>Outreach through membership emails and social media via Twitter, Facebook, and YouTube reaches an audience of over 100,000 per message.</p> <p>(http://www.facebook.com/pages/Sea-Turtle-Restoration-Project/199010435394)</p> <p>(http://twitter.com/SeaTurtles_org)</p> <p>(http://www.youtube.com/user/SeaTurtleRestoration)</p>
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EMERGING RESEARCH AND RESEARCH NEEDS

This section contains information provided by **local, state and federal agencies** on emerging research relevant to marine debris as well as overarching research needs.

Bay Conservation and Development Commission	
	<p>Database of location, quantity and cost to abate abandoned, collapsed and derelict structures in and around SF Bay, including pilings.</p>

CalTrans	
	<p>Caltrans has been continuously evaluating and investigating new methods to contain debris and other pollutants using treatment best management practices. The Department has conducted Monitoring Research and Applied Studies and updates technology and development status reports to annually.</p>

City of Los Angeles	
	<p>The City of Los Angeles as part of reaching full compliance with the existing Trash TMDLs is currently conducting a scientific study to quantify the benefits of its institutional measures in the reduction of trash discharges. Preliminary results of Year-1 are promising in that it appears that the City of Los Angeles will be able to demonstrate full compliance with the TMDL.</p>
	<p>Through the many years of implementing various measures to achieve Trash TMDL compliance, the City of Los Angeles recognizes that various programs, such street sweeping, can be enhance (i.e., changing the performance standard from “curb miles” to “mass collected”) to improve its effectiveness. Additional research is needed to determine similar parameters in other programs that can realize significant impacts.</p>

Department of Boating and Waterways	
	Track abandoned and derelict vessels (ADVs) in California which would indicate trends, provide photos and status (floating/sunk), identify repeat offenders, identify boats repeatedly sold at lien sales, identify position/location/changes of specific ADVs, and improve and coordinate efforts and communication with local agencies.
	Identify “at-risk” vessels and communicate with owners before they abandon them.
	Track and identify vessel owners not maintaining registration.
	Update old lien sale laws to reduce the possibility of boats recurring in lien sales from agency to agency.
	AWAF and VTIP grant program trends: successes, differences, future

Environmental Protection Agency Region 9 Marine Debris Program (EPA)	
	Working with the Romberg Center in Tiburon, EPA R9 is using CODAR (Coastal Doppler Radar) technology, tracking the velocity of currents off the coast of California, to better predict areas and times of likely marine debris landfall.
	In partnership with California Office of Environmental Health Hazard Assessment, (OEHHA) and UC Davis, UC Santa Barbara and UC San Diego, EPA R9 has supported and developed three fish tissue studies to examine the effects of ingestion and subsequent transfer of persistent organic pollutants to fish tissue from marine microplastics. We are also preparing to assess areas of open ocean convergence and accumulation of microplastics along coastal California during 2014.

Marine Debris Program, NOAA	
	In 2013, the MDP announced a Federal Funding Opportunity for research projects focused on the chemical impacts and degradation rates of marine debris. This opportunity is planned to continue on an annual basis contingent on funding availability. Specific research focus areas are guided by the MDP’s five-year research strategy.
	In 2012, the MDP initiated the Marine Debris Monitoring and Assessment Project (MD-MAP),

	<p>which partners with various organizations for regular shoreline surveys according to NOAA survey protocols at select shoreline sites and submission of survey data to an online database at md-map.net. The project currently includes monitoring at least 26 shoreline sites in California. Partners include Gulf of the Farallones National Marine Sanctuary, Heal the Bay, Save our Shores, Sonoma Surfrider, Monterey Surfrider, Ocean Conservancy, and the California Coastal National Monument Task Force.</p>
	<p>The MDP and IEC, Inc. are conducting a project in Orange County, CA to assess the economic benefits of reduction of marine debris through establishing whether residents' recreational travel decisions are affected by shoreline debris loads.</p>

Monterey Bay National Marine Sanctuary	
	<p>An HD video camera mounted on the remotely operated vehicle captured footage of the gear and documented a diversity of fishes, invertebrates and habitats. We completed a total of 30 site surveys and video characterization from areas 30-300 meters deep in the Monterey Bay National marine Sanctuary.</p>
	<p>MBNMS staff refined deepwater remotely operating vehicle (ROV) retrieval procedures of lost fishing gear such as nets and traps.</p>
	<p>This project provided a unique opportunity to characterize encrusting invertebrate communities associated with lost fishing gear. In state marine protected areas, invertebrates were removed by hand when possible, photographed on deck, and then returned to the water, as well as any entrapped fish. At locations outside state MPAs, unusual or interesting specimens found on the nets or in traps were collected for educational or scientific purposes. Selected invertebrates associated with the retrieved gear were collected and/or photographed.</p>
	<p>MBNMS staff led a graduate level internship for a California State University of Monterey Bay student to develop a 3D visualization of the lost fishing gear density at Portuguese Ledge.</p>

Southern California Coastal Water Research Project (SCCWRP)	
	<p>The Bight 13 Debris survey addresses the research need to quantify the abundance and types of debris found in coastal watersheds and nearshore marine environments and to link the abundance to ingested plastic in demersal and pelagic fish. Additional work is needed to establish the effect of ingested plastics on bioaccumulation of contaminants in fish and other marine life.</p>

State Water Resource Control Board (State Water Board)	
	Quantification of impacts of trash on beneficial uses.
	Protocols for monitoring trash reduction.
	Quantification of chemical bioaccumulation in the food chain from trash materials.
	Quantification of economic benefits from trash reduction in a municipality.

Ventura Countywide Stormwater Quality Management Program (VCSQMP)	
	Cost-effective trash assessment and monitoring programs.
	Effectiveness of control measure implementation.
	Full capture equivalent studies.

This section contains information provided by **non-governmental organizations** on emerging research relevant to marine debris as well as overarching research needs.

Bay Area Stormwater Management Agencies Association (BASMAA)	
	In 2013, Bay Area cities, counties, and special districts will be reporting refined trash loads from their storm drain systems, based on additional storm event data.
	Beginning in 2013, using a Proposition 84 stormwater planning and monitoring grant, BASMAA will be developing and evaluating stormwater and receiving water monitoring methods to accurately measure trash loads from stormwater conveyances and receiving waters and detect trends over time; and assessing the effectiveness and costs/benefits of implementing enhanced source control best management practices as alternatives to trash full capture devices (a treatment BMP).

California Coastkeeper Alliance	
	Identify what types of products are showing up in rivers, shorelines, and on beaches. Identify

	the source of these products. Identify the primary sources of micro-plastic debris.
	Assess the percentage of the plastic industry in full compliance with Operation Clean Sweep and determine what practices are effective during storm events, and if there are any plastics facilities implementing those practices successfully.
	Analyze the prevalence of debris in near shore fauna.
	Additional research on the extent and magnitude of plastic debris consumed by coastal fishes.
	Analyze the impacts of plastic pollution on benthic communities.
	Determine the effects of bioaccumulation of toxins in marine species due to plastic pollution in the marine environment.
	Assess the economic impacts of marine debris on our beaches and in our waterways. Determine the economic cost to cleanup marine debris from our storm drains, beaches, and waterways.
	Identify the composition of plastic marine debris to determine if it has changed off the California coast over the years.

Californians Against Waste	
	How to best clarify environmental claims in the market to prevent greenwashing or consumer confusion.
	Impacts to litter reduction if statewide bottle bill program is expanded to cover additional containers.
	Effectiveness of local ordinances in reducing litter and related costs.
	Direct cost savings of marine pollution reduction to consumers, local governments, waste haulers, etc.
	Quantification of marine debris components, by percentage and product.

California Lost Fishing Gear Recovery Project, UC Davis
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	Improved and more sustainable processes involving fishing communities for the reduction and retrieval of lost fishing gear.
	Greater understanding for the health impacts of marine debris, including lost fishing gear, on marine life and habitats.

Clean Seas Coalition	
	Need for more information and NGO understanding about Bioplastics.
	Need to gather more information and data on the effectiveness of the implementation of source reduction ordinances.

Heal the Bay	
	Promotion of recent US EPA's recent economic research which highlights the costs of marine debris, as well as NOAA's research on this issue.
	Cost-benefit analyses comparing single-use products (e.g. water bottles, plastic bags, coffee cups) to reusable alternatives – sort of like a life-cycle assessment comparison.
	Cost analysis of contamination of the recycling stream by biodegradable products.
	Analysis of cost savings to businesses in communities with carryout bag reduction policies.
	Market evaluation of the green job potential of shifting towards reusable items in place of single-use alternatives (e.g. bags, water bottles, coffee mugs, etc).
	Additional analysis of the ability for compostable/biodegradable plastics (e.g. Metabolix Mirel) to breakdown in aquatic environments, and toxicological analysis of the byproducts from any breakdown that occurs.
	Additional analysis of the bioavailability of toxins associated with plastic marine pollution (plastic additives and chemicals adsorbed to plastic marine debris) to wildlife.
	Bioaccumulation studies of toxins associated with plastic marine pollution (plastic additives and chemicals adsorbed to plastic marine debris) in marine life.

Ocean Conservancy

	Identify what the <u>actual</u> entry points of debris into the marine environment are. Moving beyond ambiguous terms and “storm water” source, and identifying actual pathways for which prevention, not cleanup, can be implemented.
	Toxicity of plastics/contaminants in seafood.

Oikonos	
	During coastal cleanups on the future shoreline cleanups in the Berkeley Marina, the use of the California Coastal Commission data cards to collect marine debris data contributes to emerging research and research needs.
	Oikonos conducted a review of the 'state of knowledge' that demonstrated that the phenomenon of seabird plastic ingestion has been widely documented in seabirds and warrants an urgent need to implement a robust approach to quantify the severity of exposure and trends over time.

Save Our Shores	
	Drafted a paper on plastic bag bans to show how and why local bans were put in place on the Central Coast. There is currently no paper such as this available to refute the claims of the plastics industry that say that bag bans are bad for local economies. This paper shows that plastic bag litter has decreased by 80% in just the first year of the bag ban. This could mean that local economies are doing better because beaches are cleaner and bringing more visitors. There could be more research done to effectively prove this argument in support of bag bans.

Surfrider Foundation	
	Costs of plastic pollution on local economies.
	Effects of plastic pollution on marine environment, including marine animals (there is a lot out there, but it is good to be more specific).
	Need to refute plastics industry arguments about the safety of plastic bags and dangers of reusable bags.

Turtle Island Restoration Network	
	Publishing standardized scientific method to record marine debris density on shorelines with objective source score. Preliminary results from indicate high density variability with significant source score differences among twelve sites in California and six sites in Costa Rica.
	Current micro-plastics observations will drive future shoreline investigations to determine density and estimate total beach plastic load within Point Reyes Seashore.
	Re-formatting debris density and coastal cleanup data to include in NOAA and West Coast Governors Alliance marine debris online databases.

REGIONAL COORDINATION EFFORTS

This section contains information provided by **local, state and federal agencies** on their regional coordination efforts related to marine debris.

Bay Conservation and Development Commission	
	State Department of Boating and Waterways Abandoned Watercraft Abatement Fund (AWAF)
	State Department of Boating and Waterways Vessel Turn In Program (VTIP)
	United States Coast Guard sponsored quarterly inter-agency meetings and establishment a database of abandoned and derelict vessels. Attendees include local harbormasters and salvors and staff from local, state and federal agencies. The meetings have forged partnerships and coordination that would not otherwise have occurred.
	In 2011, an East Bay Harbormaster formed the Estuary Coalition to manage an abandoned vessel, anchor out vessel and theft problem in the Alameda Oakland Estuary, which lead to the below cited project.
	CalRecycle and National Fish and Wildlife Foundation partnership and planned a \$1.2 million dollar cleanup of the Alameda Oakland Estuary to remove approximately 1,000 tons of marine debris consisting of abandoned wharves, pilings and 30 vessels
	Richardson's Bay Regional Agency's ongoing work to remove abandoned and derelict vessels from Richardson's Bay.

	<p>Since 1949, the Army Corps of Engineers has been removing debris from the Bay's navigation channels using its authority under the Harbors and Rivers Act. During the past three years, this program's budget has averaged \$2.5 million dollars annually.</p>
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CalTrans	
	<p>Caltrans districts coordinate with local enforcement agencies (LEA) concerning proper storage and disposal of waste generated materials.</p>
	<p>Whenever accidental spills occur in highways, Caltrans conduct coordinated efforts with the CHP, DTSC, RWQCB, and other environmental agencies to contain and remove any debris or chemicals away from the public.</p>
	<p>Caltrans has performed Enhanced storm Drain Inlet Inspection and Cleaning Program in coordination with metropolitan areas along the South Coast as part of litter and debris reduction.</p>
	<p>Caltrans also has maintenance agreements with various local agencies which include litter abatement efforts.</p>

California Coastal Commission (CCC)	
	<p>CCC staff chairs the West Coast Governors' Alliance Marine Debris Action Coordination Team, which is developing a strategy for addressing marine debris along the entire West Coast, among other deliverables. http://www.westcoastoceans.org/index.cfm?content.display&pageID=81</p>
	<p>CCC staff also participates in the California Ocean Protection Council's Marine Debris Steering Committee. http://www.opc.ca.gov/</p>

City of Los Angeles	
	<p>The newly adopted LA Region Stormwater Permit (Dec. 28, 2012, issued by the LA Regional Water Quality Control Board) requires the development of Regional Watershed Plans (Enhanced Watershed Management Programs) as well as a Coordinated Integrated Monitoring Plans (CIMP). The City of Los Angeles is leading efforts in 4 Regional Watershed Plans and CIMP (LA River, Ballona Creek, Dominguez Channel, and Santa Monica Bay – J2 & J3).</p>

	The City of Los Angeles is partnering with over 30 LA Region Municipalities to accomplish the preparation of the Plans in realizing improve water quality in the local waterbodies as well as an effective monitoring program.

Department of Boating and Waterways	
	Letter of Support for CalRecycle’s Oakland Estuary Enhancement Project.
	Increased AWAFF funding support to Delta law enforcement agencies for FY 13/14.
	Attendance and participation of U.S.C.G. Abandoned Vessel Workgroup meetings.
	Increased communication with other state entities involved in ADVs.

Environmental Protection Agency Region 9 Marine Debris Program (EPA)	
	In FY 2011, Region 9 developed a cross-media Marine Debris Strategy to employ existing EPA program tools and resources and work with a host of governmental and non-governmental partners to address the problem of marine debris both on land and in the open ocean. The Strategy encompasses waste minimization and trash reductions from stormwater discharges as well as further assessment of marine debris characteristics and investigation of potential cleanup approaches in rivers, estuaries, lakes and the open ocean. We are also continuing our collaborative efforts to monitor the migration of tsunami debris and evaluate potential mitigation options.

Los Angeles County Flood Control District (LACFCD)	
	The County and the LACFCD participated in regional studies to quantify and assess the sources of trash through various regional programs, such as the Southern California Stormwater Monitoring Coalition, and the Southern California Bight Regional Monitoring Program.
	Since 2011, the County and the LACFCD have participated in the State Water Board’s Public Advisory Group to guide the development of a Statewide Trash Policy.

Marine Debris Program, NOAA	
	The MDP has Regional Coordinators located throughout the nation to engage in and support local and regional projects, partnerships, activities and actions, facilitate information sharing, conduct outreach, and identify regional issues and needs.
	In July 2013, the MDP will be publicly releasing the Marine Debris Clearinghouse, a web-based portal that will allow the active marine debris community and general public to access information on activities and lessons learned (http://clearinghouse.marinedebris.noaa.gov/).
	As part of the effort to coordinate the overall response to Japan tsunami marine debris, the MDP has had regular communication and coordination with various state and local partners, including CA Emergency Management Agency, Ocean Protection Council, CA Department of Natural Resources, CA Department of Fish and Wildlife, CA Coastal Commission, EPA Region 9, and U.S. Coast Guard District 11.
	The MDP has active participation on the West Coast Governors' Alliance Marine Debris Action Coordination Team.

Monterey Bay National Marine Sanctuary	
	California Academy of Sciences and Steinhart Aquarium collaborated to study and catalogue specimens found on the nets, such as sponges, brittle stars, tunicates and crabs.
	The collaborative project is funded through a federal settlement to conduct restoration projects in Monterey Bay National Marine Sanctuary. Other key contributors include Cordell Bank National Marine Sanctuary, UC Davis' SeaDoc Society, California Department of Fish and Game, National Marine Fisheries Service, Marine Advanced Technology Education Center, Marine Applied Research and Exploration, California State University Monterey Bay and fishing partners.

Ocean Protection Council (OPC)	
	Plays the role of liaison between the Executive Committee and Marine Debris Action Coordination Team through the West Coast Governors Alliance on Ocean Health. The Executive Committee is in the process of approving the marine debris strategy which is a framework to reduce the amount and impact of marine debris through leveraging existing resources and expertise within the three states and the federal government. Also heavily involved with the development of a regional marine debris database: http://debris-db.westcoastoceans.org/

	<p>Participates in the Pacific Coast Collaborative to address issues related to marine debris, including Japan Tsunami marine debris: http://www.pacificcoastcollaborative.org/priorities/resource/Pages/ResourceConservation.aspx</p>
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Southern California Coastal Water Research Project (SCCWRP)	
	<p>The 2013 Regional Assessment Program (Bight'13) is a partnership that has grown to more than 60 organizations collaborating to address management questions of regional importance in the Bight offshore, nearshore and estuarine habitats. Although marine trawl debris has been a part of previous Bight surveys, Bight'13 represents the first time marine debris will be a focus area.</p>
	<p>Previous Bight surveys have provided the foundation for continuous trawl debris monitoring by local POTWs (e.g. Sanitation Districts of Los Angeles County, the City of Los Angeles and the City of Oxnard) as a requirement of the NPDES permit monitoring program developed by their corresponding Regional Water Quality Control Board (e.g. Los Angeles RWQCB).</p>
	<p>Bight'13 seeks to leverage ongoing data collection by the Stormwater Monitoring Coalition Stream Bioassessment assessment Program (www.smc.org), which is has been monitoring the abundance and types of debris in wadeable stream channels.</p>
	<p>For the Bight'13 Regional Debris Survey we are also partnering with Algalita Marine Research Institute, an independent research group, and with Coast Keeper, River Keepers and Heal the Bay—the environmental NGOs that are responsible for the majority of volunteer monitoring and debris clean-up activities in Southern California.</p>
	<p>The Bight '13 Regional Debris Assessment objective is to characterize the extent and magnitude of debris in Southern California Bight watersheds and marine environments and determine any linkages.</p>

State Water Resource Control Board (State Water Board)	
	<p>The State Water Board is part of the Bight '13 Debris Assessment Regional Monitoring Group. This group is tasked to assess trash and marine debris within the Southern California Bight.</p>
	<p>The State Water Board partnered with the Southern California Coastal Water Research Project (SCCWRP) and CSU Fullerton from 2009-2012 quantify the amount of plastic pellets on beaches with two main objectives. The first objective was to provide baseline information on the distribution and amount of plastic pellets on beaches throughout the state of California. The second objective was to conduct an intensified study in areas the</p>

	<p>pellets were found in from the baseline study to provide more detailed information on the distribution and amount of pellets in these areas.</p> <p>http://www.sccwrp.org/ResearchAreas/MarineDebris/DebrisOnBeaches/PlasticPelletsOnBeaches.aspx</p>
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United States Coast Guard (USCG)	
	Waterways Management Division will notify the public through a Broadcast Notice to Mariners to warn mariners of marine debris.
	Removal will be coordinated with US Army Corps of Engineers if necessary.

Ventura Countywide Stormwater Quality Management Program (VCSQMP)	
	The cities, the County, and VCWPD participate in the Stormwater Monitoring Coalition (SMC) of Southern California, Southern California Coastal Water Research Project (SCCWRP), and California Stormwater Quality Association (CASQA).
	The cities, the County, and VCWPD participate in all watershed organizations within Ventura County, including Ventura County Watersheds Coalition, Calleguas Creek Watershed Council, Santa Clara Watershed Council, Ventura River Watershed Council, and Malibu Creek Watershed Management Council.

This section contains information provided by **non-governmental organizations** on their regional coordination efforts related to marine debris.

Bay Area Stormwater Management Agencies Association (BASMAA)	
	In 2010, BASMAA constituted a new Trash Committee to provide a forum for Bay Area stormwater management agencies to share information on their trash load reduction efforts, develop regional guidance, and conduct regional projects.

California Coastkeeper Alliance	
	Participates in the Clean Seas Coalition.

	Works with California Waterkeepers to develop uniform data collection methods and forms so that local cleanup and volunteer monitoring efforts can be used to determine regional trends.
	Collaborates with California Waterkeepers to develop and participate in the Southern California Coastal Water Research Project's (SCCWRP) 2013 Bight Regional Monitoring Program to conduct regional debris monitoring in conjunction with existing monitoring efforts. Several Southern California Waterkeeper groups serve on the Bight debris committee to identify sites for marine debris monitoring, and mobilize volunteers and partners to conduct the monitoring. For example, San Diego Coastkeeper will collect data from more than 30 sites for ingestion analysis and tissue contaminant transfer.

Californians Against Waste	
	Collaborates with other environmental organizations in California and beyond via Clean Seas Coalition.
	Tracks and supports work by West Coast Governors Alliance on Ocean Health Marine Debris Action Coordination Team.

Clean Seas Coalition	
	Generally, participates in international policy initiatives and/or legislative review.
	Advocates for regional efforts to incorporate target reductions.

Heal the Bay	
	Participates in the Clean Seas Coalition (administered by Leslie Tamminen): http://www.cleanseascoalition.org/
	Participates in West Coast Governors Alliance Marine Debris Action Team: http://www.westcoastoceans.org/index.cfm?fuseaction=content.display&pageID=81 Works on WCGA development of a west coast marine debris database.
	Conducts surveys on two local LA beaches (Carbon Beach, Malibu and Malaga Cove, Palos Verdes) as part of the NOAA Japanese Tsunami Marine Debris Baseline Monitoring Surveys:

<http://marinedebris.noaa.gov/tsunamidebris/monitoring.html>

Ocean Conservancy

Collaborates with existing volunteer conservation organizations (e.g., sea turtle volunteer groups) to maximize resources and conduct debris monitoring in conjunction with existing monitoring efforts. Analyzes data to estimate probability of interactions between animals and marine debris.

Oikonos

Oikonos and Berkeley Yacht Club are working with the Shorebird Park Nature Center and Berkeley High School students from the Sea Stewards on doing regular coastal cleanups at the Berkeley Marina.

Natural Resources Defense Council (NRDC)

Tracks and supports the work of the West Coast Governors Alliance on Ocean Health Marine Debris Action Coordination Team.

Save Our Shores

Created the Central Coast Sanctuary Alliance in response to the failure of the bag ban to pass at the state level. This alliance is made up of 50 businesses and 50 NGOs in support of local bag bans. We started in 2011 and meet in person monthly to strategize which jurisdictions to tackle and when. We have representatives from both Monterey and Santa Cruz Counties so that we can attend city council and board of supervisor meetings, conduct outreach at local events and farmers markets, and hand out free reusable bags on the days the bag bans go into effect. We led the charge to ban plastic bags in Santa Cruz County and City, Capitola, Watsonville, City of Monterey and Carmel.

Surfrider Foundation

	Participates in the Clean Seas Coalition.
	Participates in the West Coast Governors Alliance on Ocean Health (Angela Howe is a member of the Marine Debris Action Coordination Team).
	Works with Coastal Commission on tsunami debris clean ups and Coastal Clean Up Day; also beginning to coordinate with NOAA more.

Turtle Island Restoration Network	
	Quarterly reporting of large marine debris and potential Japan Tsunami debris to project partners at National Parks, NOAA, National Marine Sanctuaries, and California Coastal Commission.
	Communicating marine debris density database needs to multiple partners and stakeholders to ensure future data compatibility.



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March 3, 2016

President Eric Sklar
Marine Resources Committee
California Fish and Game Commission
1419 Ninth Street, Suite 1320
Sacramento, CA 95814

Dear President Sklar:

Agenda Item 9 for the Marine Resources Committee is an Informational Presentation on marine debris and plastic pollution. Marine debris is a big problem.

The MRC has addressed multiple marine issues and is a great example of how the committee process can work successfully in bringing together all interested parties to develop solutions. Its resources are also limited.

Except for regulating fishing tackle, the commission has limited authority to address the sources of marine pollution, most of which are land-based. We suggest, therefore, that the MRC concentrate on the area where the commission can make an impact. Involving the existing coalition focusing on whale entanglements could be a good first step.

Thank you for your consideration.

Sincerely,

April Wakeman

Marine Resources Committee (MRC) 2016 Work Plan: Scheduled topics and timeline for items referred to MRC
(Updated Mar 10, 2016 for Mar 2016 MRC meeting)

Topic	Type of Topic	2016		
		MAR Los Alamitos	JUL Petaluma	NOV Ventura
Annual Sportfish Regulations	Annual cycle	X		
Abalone Fishery Management Plan	DFW project	X	X	X/ R
Herring FMP Development Updates	DFW project	X		X
Kelp and Algae Harvest Management and Regulations Review	DFW project			X
MLMA Master Plan for Fisheries Revision	DFW project	X		X
California's Fishing Communities	Potential special FGC project		X	
Fisheries Bycatch Workgroup	MRC workgroup	X	X	X
Pier and Jetty Fishing Review	Special FGC project		X	
Marine Debris and Plastic Pollution	Informational Presentation	X		
Ocean Acidification and Hypoxia	Informational Presentation		X	
Commercial sea cucumber fishery	Informational Presentation			

PERPETUAL TIMETABLE FOR CALIFORNIA FISH AND GAME COMMISSION ANTICIPATED REGULATORY ACTIONS

Updated: 02/25/16

For FGC Staff use.				REGULATORY CHANGE CATEGORY	ACTION DATE, TYPE AND LOCATION	2016												2017			
						MAR	MAR	APR	APR	APR	MAY	JUN	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
						15	21	12	13	14	18	18	21	22	23	21	24	25	21	19	20
QTRLY EFFECTIVE	DFW RU ANALYST	FGC ANALYST	LEAD			TELECONFERENCE	MRC LOS ALAMITOS	TRIBAL COMMITTEE GEYSERVILLE	FGC SANTA ROSA	TELECONFERENCE	WRC WEST SACRAMENTO	TRIBAL COMMITTEE TBD	FGC TBD	MRC PETALUMA	FGC FOLSOM	WRC WOODLAND	FGC TBD	MRC IRVINE	FGC SAN DIEGO	WRC TBD	FGC TBD
					File Notice w/OAL by	1/19/16			2/16/16	2/23/16			4/26/16		6/28/16		8/11/15		10/13/15		
					Notice Published	1/29/16			2/26/16	3/4/16			5/6/16		7/8/16		8/21/15		10/23/15		
*	SB	SF	MR	MARINE PROTECTED AREAS	632		E 3/1														
*	MR	ST	OGC	GRAY WOLF	670.5		E 3/1														
	SB	JS	FB	SPORT FISH	1.05 et al.		E 3/1				R				N					A	
	SB	SF	MR	PACIFIC HALIBUT SPORT FISHING	28.20				A		E 5/1									N	D
	SB	SF	MR	OCEAN SALMON SPORT FISHING (PHASE I)	27.80(c)			E 4/1												N	D
	SB	SF	MR	OCEAN SALMON SPORT FISHING (PHASE II)	27.80(d)					A	E 5/1									N	D
	SB	SF	FB	KLAMATH RIVER SPORT FISHING	7.50(b)(91.1)					A	V				E 8/1					N	D
*		ST	OGC	CLEAR LAKE HITCH	670.5			E 4/1													
*		ST	OGC	TRICOLORED BLACKBIRD - 2084 EMERGENCY	749										180 Days Expires 8/9/16						
	SB	ST	FB	UPPER SACRAMENTO RIVER EMERGENCY	7.50(b)(156.5)										180 Days Expires 8/9/16						
	MR	JS	FB	CENTRAL VALLEY SALMON SPORT FISHING	7.50(b)					A					E 8/1					N	D
	MR	JS	WLB	MAMMAL HUNTING 2016-2017	265 et al.					A	V			E 7/1						N	D
	SB	JS	FB	FISHERIES AT RISK EM 1ST 90 DAY EXTENSION	8.01		90 Day Ext. Expires 3/29														
	SB	JS	FB	FISHERIES AT RISK EM 2ND 90 DAY EXTENSION	8.01		EM	OAL NLT 3/19							90 Day Ext. Expires 6/29						
	SB	JS	FB	FISHERIES AT RISK REGULAR RULEMAKING	8.01					A					Effective NLT 6/28/2016						
	MR	JS	WLB	WATERFOWL	502					D/A				E 7/1						N	D
*	MR	CW	MR	ELECTRONIC REPORT OF MARINE LOGBOOKS	190					D/A				E 7/1							
*	MR	ST	MR	COMMERCIAL SEA URCHIN (PHASE I)	120.7					D/A				E 7/1							
*		SF	FGC	COMMISSION MEETING PROCEDURES	665								A			E 10/1					
*	SB	ST	MR	SPINY LOBSTER, SPORT AND COMMERCIAL	29.80 et al.								A			E 10/1					
*	SB	CW	WLB	NONLEAD AMMUNITION COUPON PROGRAM	250.2									D/A		E 10/1					
	SB	JS	FB	TIDAL WATERS SF/SAN PABLO BAY	1.53 27.00 28.65(a)									D						E 1/1	
*	SB	CW	WLB	DFW LANDS PASS	550 et al.									D		A				E 1/1	
*	MR	JS	WLB	FALCONRY CLEAN-UP	670									D		A				E 1/1	
*		CW	FGC	CONFLICT OF INTEREST CODE	782											D/A				E 1/1	
	MR	CW	WLB	UPLAND (RESIDENT) GAME BIRD	300									D		A	E 9/1			R	
*	MR	CW	WLB	NONGAME ANIMALS - GENERAL PROVISIONS	472									N		D/A				E 1/1	
*	SB	SF	MR	COMMERCIAL HAGFISH BARREL TRAPS	180.6(b)									N		D/A				E 1/1	
	MR	SF	MR	RECREATIONAL GROUND FISH	27.20 et al.											N				D	A E1/1
*	SB	CW	EB	ENHANCE PENALTIES FOR GAME ILLEGAL TAKE	715 (new)						V					N				A	E 1/1
	MR	JS	WLB	BIG GAME TAG QUOTA REPORTING PROCESS	360, 361, 362, 363, 364											N				D	A
*			MR	KELP AND ALGAE HARVEST MANAGEMENT	165, 165.5, 704									V						V	
*	MR	SF	MR	PACIFIC HALIBUT SPRT CONFORM PROCESS [2016]	28.20																
*			MR	COMMERCIAL SEA CUCUMBER [2016]	128																
*		ST	MR	COMMERCIAL SEA URCHIN (PHASE II) [TBD]	120.7																
*			OGC	AZA/ZAA [TBD]	671.1																

EM = Emergency, E = Anticipated Effective Date (RED = expedited review), N = Notice Hearing, D = Discussion Hearing, A = Adoption Hearing, V = Vetting, R = Committee Recommendation, WRC = Wildlife Resources Committee, MRC = Marine Resources Committee