California Marine Protected Area Network
OUTREACH AND EDUCATION GUIDE

Safeguarding an
Underwater Wilderness

CALIFORNIA MARINE PROTECTED AREAS
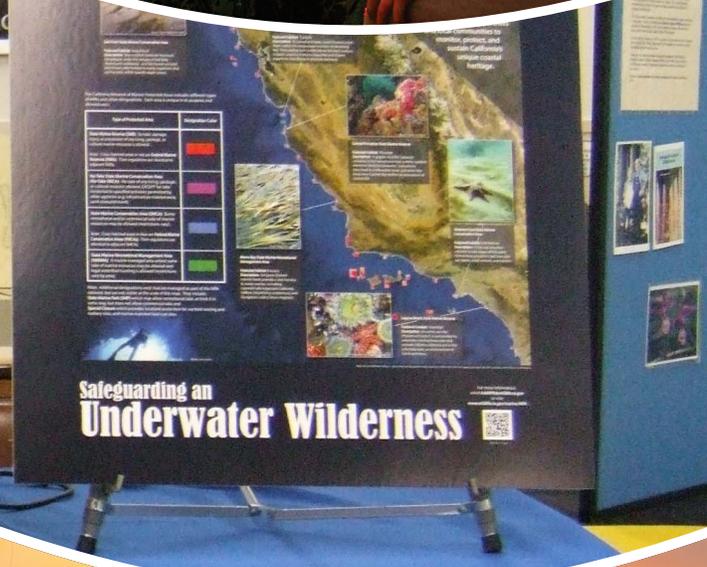
Safeguarding an Underwater Wilderness

Contents

Photo by Jerry Loomis

1. Introduction

The California Department of Fish and Wildlife (CDFW) works with partner agencies and organizations who assist in managing the state's Marine Protected Area (MPA) Network through the MPA Statewide Leadership Team. The Leadership Team was convened in April 2014 as a standing advisory body to ensure communication, collaboration, and coordination among entities that have significant authority, mandates, or interests that relate to the MPA Network. The Leadership Team includes state, federal, Tribal, and key non-profit partners.

CDFW recognizes that public outreach is one of the most effective methods for promoting awareness, enjoyment, and support for the state's MPAs and is essential to building compliance with MPA regulations. CDFW also recognizes that effective public outreach, with cohesive, consistent, and accurate messaging, is necessary for overall MPA Network success.

WHO IS THIS GUIDE FOR? WHO CONDUCTS MPA OUTREACH?

Since the Marine Life Protection Act (MLPA) was passed in 1999, and continuing through completion of an MPA Network along the entire California coast, numerous organizations have participated in public outreach and education (hereafter referred to as outreach) related to the MPA Network. Among others, those organizations/individuals include:

- State, federal, and local agencies
- Tribal governments and Tribal communities
- Local communities and interested stakeholders
- Non-governmental organizations (NGOs)
- Recreational anglers and commercial fishermen
- For-profit businesses
- Educational institutions

Communicating with the public about the MPA Network is a big task and will continue to require the involvement and coordination of many people and organizations. To that end, the following document has been created to help ensure consistent and accurate MPA messaging across the state. Note: this is a living document and the content may change as policies change or new information and/or resources become available.

QUICK REFERENCE

CDFW manages the MPA Network through the MPA Management Program, which consists of four focal areas: 1) outreach and education, 2) enforcement and compliance, 3) research and monitoring, and 4) policy and permitting. For inquiries related to any of those focal areas, please contact AskMPA@wildlife.ca.gov. Additionally, to report violations in an MPA, contact CalTip at (888) 334-CalTIP (2258) or go to the CalTip online reporting page.

2. Background

WHAT ARE MARINE PROTECTED AREAS?

A marine protected area is any area of the marine environment that has been reserved by international, national, state, territorial, Tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein. Worldwide, those protections come in many forms, including limitations to oil and gas development, prohibiting damage to historic and cultural resources, and banning or constraining the removal or disruption of marine life.

In California, MPAs restrict or prohibit take[1] of marine species and protect the habitats they depend on (see California's specific definition of MPAs on the next page).

Many analogies and metaphors have been used to describe MPAs, including "refugia," "sanctuaries," "underwater oases," "underwater parks," and "Yosemites of the sea." These descriptions can provide a useful starting point for understanding MPAs and can help the public make connections with what might otherwise be an unfamiliar term. Despite that, communicators should be wary of using those terms as exact equivalencies to MPAs, as California's MPAs differ from "parks," "refugia," and "sanctuaries" in some important ways:

- MPAs often protect representative habitats as opposed to the unique landscapes protected by parks.

- Unlike the California State Park system, California's MPAs were designed to work as part of a larger ecological network.

- Although MPAs welcome human visitors for a variety of purposes (including non-consumptive recreation, scientific study, cultural practices, and in some cases recreational and commercial consumptive use), they are primarily set aside for their ecological function, including benefits to species, habitats, and the wider ecosystem.

- While "State Marine Park" is one classification of MPA in California, most of the MPAs in California are not "parks."

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MPAs are:

- resource management tools
- named discrete areas (with described boundaries)
- marine and/or estuarine
- created with different levels of protection
- designed as part of a network

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MPAs are not:

- the same in size
- the same in purpose/ regulations
- beneficial for every marine creature in every instance

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[1] *Take is defined in [California Fish and Game Code, §86](#) as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Additionally, California Code of Regulations, Title 14, §650 states that take also includes "capturing, marking, and releasing any animal."*

WHY ARE MPAs IMPORTANT?

In the past century, humans and natural fluctuations have combined to increase threats to marine ecosystems, which affect ocean habitats from local to global scales. Some of those threats come from oceanographic conditions (e.g. El Niño and La Niña), human-induced climate change, ocean acidification, pollution, coastal development, invasive species, habitat destruction, and overfishing. While MPAs may not be appropriate for reducing impacts from all threats, they can be one tool used to address and mitigate many of them and/or to observe how habitats and some species respond in areas where human consumptive use is removed or reduced. Benefits of MPAs may include:

- Conservation of biodiversity and ecosystems.
- Halting and possibly reversing the decline in fish and invertebrate populations and productivity by protecting critical breeding, nursery, and feeding habitats.
- Buffering ecosystems from the effects of natural and human-made disasters.
- Raising the profile of an area for marine tourism and broadening local economic uses.
- Providing opportunities for education, recreation and cultural practices in relatively pristine habitats.
- Providing reference sites for long-term research and monitoring.

HISTORY OF MPAs IN CALIFORNIA

Prior to 1999, about three percent of state waters were protected in some form of MPA. Their establishment came through policy actions (e.g. legislation, voter initiatives, and administrative actions) that resulted in a patchwork of MPAs managed by a variety of state and local agencies. Many of these MPAs lacked clearly defined objectives, effective management measures, and adequate enforcement, and were not connected as a network. As a result, many MPAs gave the illusion of protection while falling short of the full potential to protect and conserve marine life and habitats.

Marine Protected Area:

A named, discrete geographic marine or estuarine area seaward of the high tide line or the mouth of a coastal river, including any area of intertidal or subtidal terrain, together with its overlying water and associated flora and fauna that has been designated by law, administrative action, or voter initiative to protect or conserve marine life and habitat. An MPA includes marine reserves and other areas that allow for specified commercial and recreational activities, including fishing for certain species but not others, fishing with certain practices but not others, and kelp harvesting, provided that these activities are consistent with the objectives of the area and the goals and guidelines of this chapter. MPAs are primarily intended to protect or conserve marine life and habitat, and are therefore a subset of marine managed areas, which are broader groups of named, discrete geographic areas along the coast that protect, conserve, or otherwise manage a variety of resources and uses, including living marine resources, cultural and historical resources, and recreational opportunities (FGC §2852[c], also see PRC §36602[e] and FGC §1591).

A visitor enjoying a quiet moment at Laguna Beach State Marine Conservation Area. CDFW photo.

In 1999, the California Legislature passed the MLPA requiring California to reevaluate all existing MPAs and, to the extent feasible, design a functional, interconnected MPA Network. Specifically, the MLPA mandated that the network should protect ecosystems, sustain and rebuild populations, increase protection for representative and unique habitats, improve recreational, educational and study opportunities, and be managed using the best available science.

For the purposes of MPA planning, CDFW participated in a public-private partnership commonly referred to as the MLPA Initiative. Established in 2004, the Initiative guided the development of California's MPA Network over a seven-year period. The planning process involved Regional Stakeholder Groups who developed MPA proposals under the guidance of an appointed Blue Ribbon Task Force, based upon guidelines set forth by Science Advisory Teams (SATs) and CDFW staff.

The SATs established criteria for evaluating existing MPAs and creating new MPAs. Their criteria required creating MPAs large enough to protect targeted populations at different life stages, replicating habitat types within different MPAs, siting MPAs to maximize spatial connectivity, and including MPAs with varied amounts of allowed activities and protections.

The MLPA Initiative included planning within four coastal regions:
- North Coast (California-Oregon state line to Point Arena),
- North Central Coast (Point Arena to Pigeon Point),
- Central Coast (Pigeon Point to Point Conception),
- South Coast (Point Conception to U.S.-Mexico Border).
- An additional fifth region, San Francisco Bay, has not yet been completed.

While the MLPA Initiative process utilized a regional approach for the planning and design of the MPA Network, it is important to note that the long-term monitoring guidelines for MPAs now identifies three bioregions: North Coast (California-Oregon state line to San Francisco Bay), Central Coast (San Francisco Bay to Point Conception), and South Coast (Point Conception to the U.S.-Mexico Border). While the four MLPA planning regions were identified in order to allow for a design approach that could reasonably take into account the unique environmental and social character of different regions of California, the three long-term monitoring bioregions were selected based on data collected during baseline monitoring that identified clusters of similar biota, ecological communities, and key habitats.[2]

In December 2012, the California Fish and Game Commission finalized implementation of a statewide network of 124 MPAs, plus 14 special closures.[3] The California MPA Network now protects a little over 16 percent of California's state waters from some form of take (Figure 1). Roughly half of California's MPAs are no-take state marine reserves (SMRs), which represents approximately 60 percent of all no-take MPAs within the waters of the 48 contiguous U.S. states. The California MPA Network is the largest ecologically connected network of its kind in the U.S. and one of the largest MPA networks in the world.
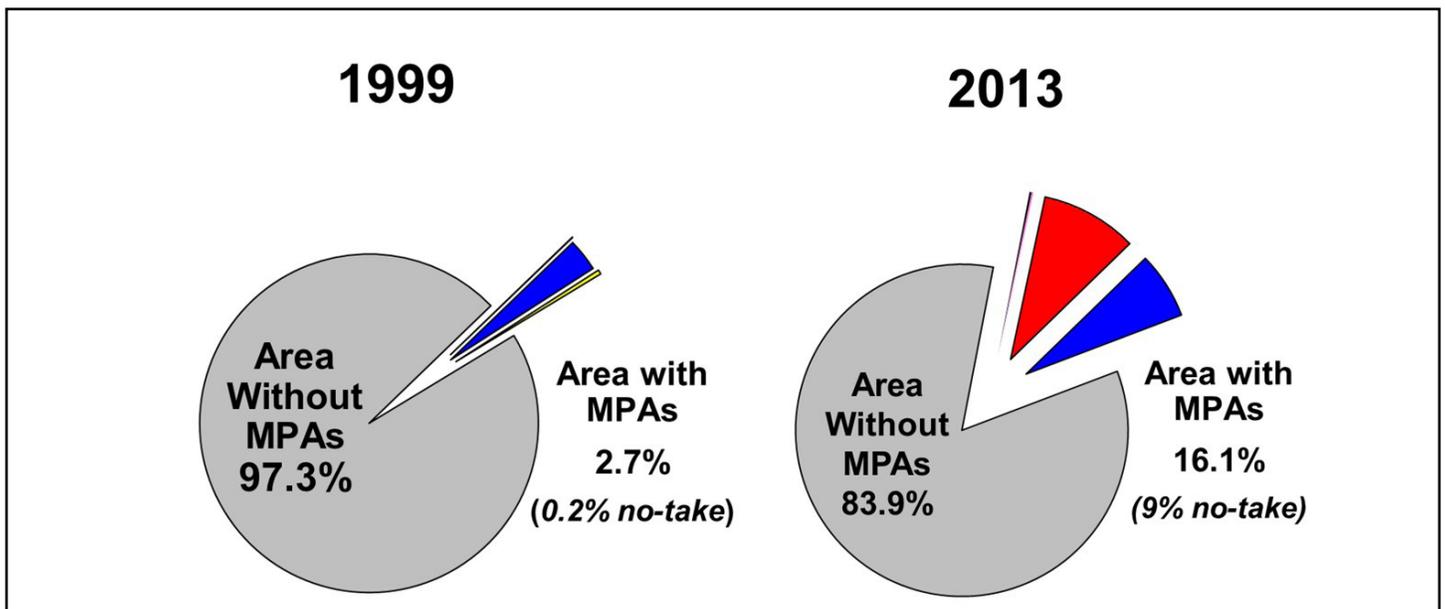

Figure 1: Percentage of state waters with MPA status.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE'S ROLE IN MPA MANAGEMENT

Certain aspects of MPA management are central to CDFW's role within the California Resources Agency. CDFW MPA management includes the four focal areas below:

- **Policy and Permitting**
  Coordination between the primary managing agencies and partners is essential to maintaining consistent management of the California MPA Network. CDFW uses scientific data and staff expertise to provide management recommendations to the Fish and Game Commission to aid in their rule making decisions. CDFW also reviews and issues Scientific Collecting Permits. As specified in California Fish and Game Code, §1002 and California Code of Regulations, Title 14, §650, a scientific collecting permit is required when take or possession of fish and wildlife occurs for research, education, or propagation purposes.

- **Outreach and Education**
  CDFW develops and disseminates outreach materials in a variety of formats, and interfaces directly with the public to inform Californians about the purpose and function of MPAs while ensuring compliance with regulations. CDFW also provides guidance to many partner organizations involved in MPA outreach to ensure accurate and consistent messaging.

CDFW wildlife officer conducting outreach. CDFW photo.
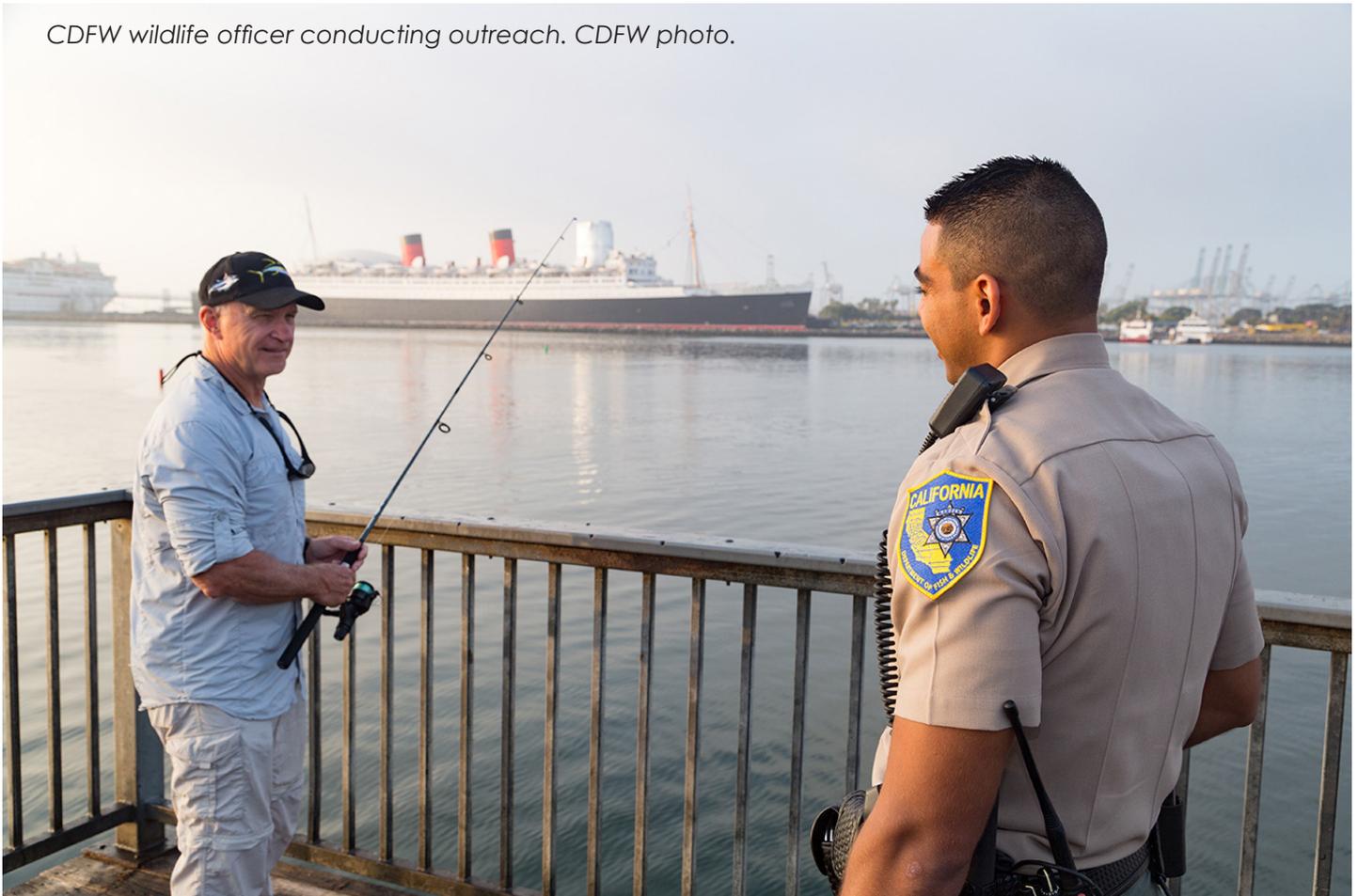
- **Enforcement and Compliance**

  Enforcement and compliance of MPA regulations is fundamental to their success. As the primary agency responsible for enforcing MPA regulations, CDFW's Law Enforcement Division monitors MPA sites and takes enforcement action as appropriate. In addition to CDFW enforcement, partner agencies such as California State Parks, National Park Service, U.S. Coast Guard, National Oceanic and Atmospheric Administration, municipal harbor patrols, local police, sheriffs, lifeguards, and city resource officers may also assist in enforcement.

- **Research and Monitoring**

  The MLPA requires that the MPA Network be monitored to evaluate progress toward meeting its goals, and that the results of monitoring inform adaptive management decisions. CDFW works with key partners to coordinate data collection related to marine life, habitats, and commercial and recreational activities that occur both inside and outside of MPAs.

ADAPTIVE MANAGEMENT

The MLPA's goals, objectives, and design considerations serve as the cornerstone for the MPA Management Program's approach. The adaptive process is designed to help the state learn and evaluate whether California's MPA Network is making progress toward meeting the goals of the MLPA. The adaptive management process outlined below (Figure 2) consists of three steps and provides a framework for implementing potential future management actions.
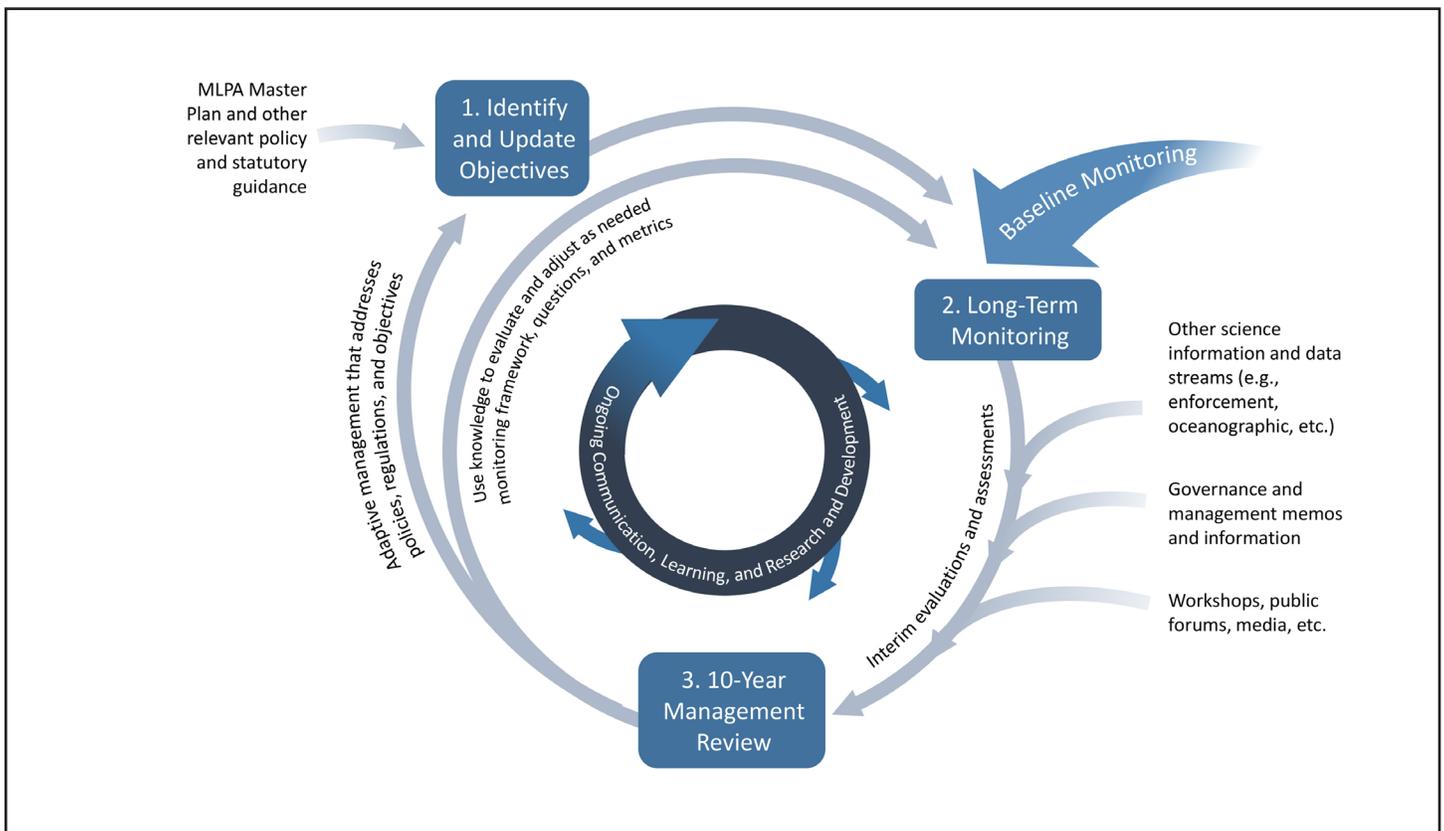

Figure 2: The three stages of adaptive management.

Bureau of Land Management interpreter conducting MPA outreach. BLM photo.

3. Audiences

OVERVIEW

In order to ensure both near and long-term success of MPAs, it is essential to conduct outreach that informs and engages a multitude of audiences. Audiences include those who come into daily contact with MPAs as well as those who may never see an MPA. Delivering accurate, coordinated, and consistent information about MPAs will help Californians understand, value, and safeguard MPAs for future generations.

The MLPA planning process relied on input from stakeholders with a wide variety of backgrounds. They included recreational anglers, Tribal representatives, conservationists, educators, agency representatives, commercial fishermen, and ocean-related businesses. Many of those stakeholders are now recipients of MPA outreach and, in some cases, work with CDFW as partners in delivering outreach to others. Additionally, many new audiences have been identified subsequent to the adoption of the MPA Network. It is important that we develop unique strategies for communicating with all audiences, whether they have been engaged since the beginning of the MLPA process or are finding out about MPAs for the first time.

REACHING SPECIFIC AUDIENCES

Before the development stage of any program or product, an effort should be made to research target audience(s):

- What are the audience's needs and interests?
- What communication medium and mode of delivery is most effective at influencing a specific audience's thoughts, attitudes, opinions, and behaviors?

Knowing your audience means being able to predict their questions, concerns, and actions ahead of time. Using language that your audience can easily understand, and presenting the information concisely, can help any communicator better reach their intended audience. MPA relevance may vary by user group, so an emphasis should be placed on different aspects of MPAs (e.g., fishing regulations, natural history, cultural history, recreational opportunities, etc.) to more effectively reach the targeted audience. Identifying certain visitor characteristics can help communicators provide relevant messages and products.[4]

- **Knowledge & experience level:** What an audience group already knows about MPAs will influence the communication process. Previous knowledge can positively or negatively affect the process, depending upon the perceived credibility of the provider and the cohesiveness of new information with previous knowledge.

- **Worldview:** An audience's view of and belief system about the world will influence how they process and act upon new information. Audiences selectively receive and process information that tends to support their established belief system and may reject information that contradicts it.

MPA interpretation at the beach. California State Parks photo.
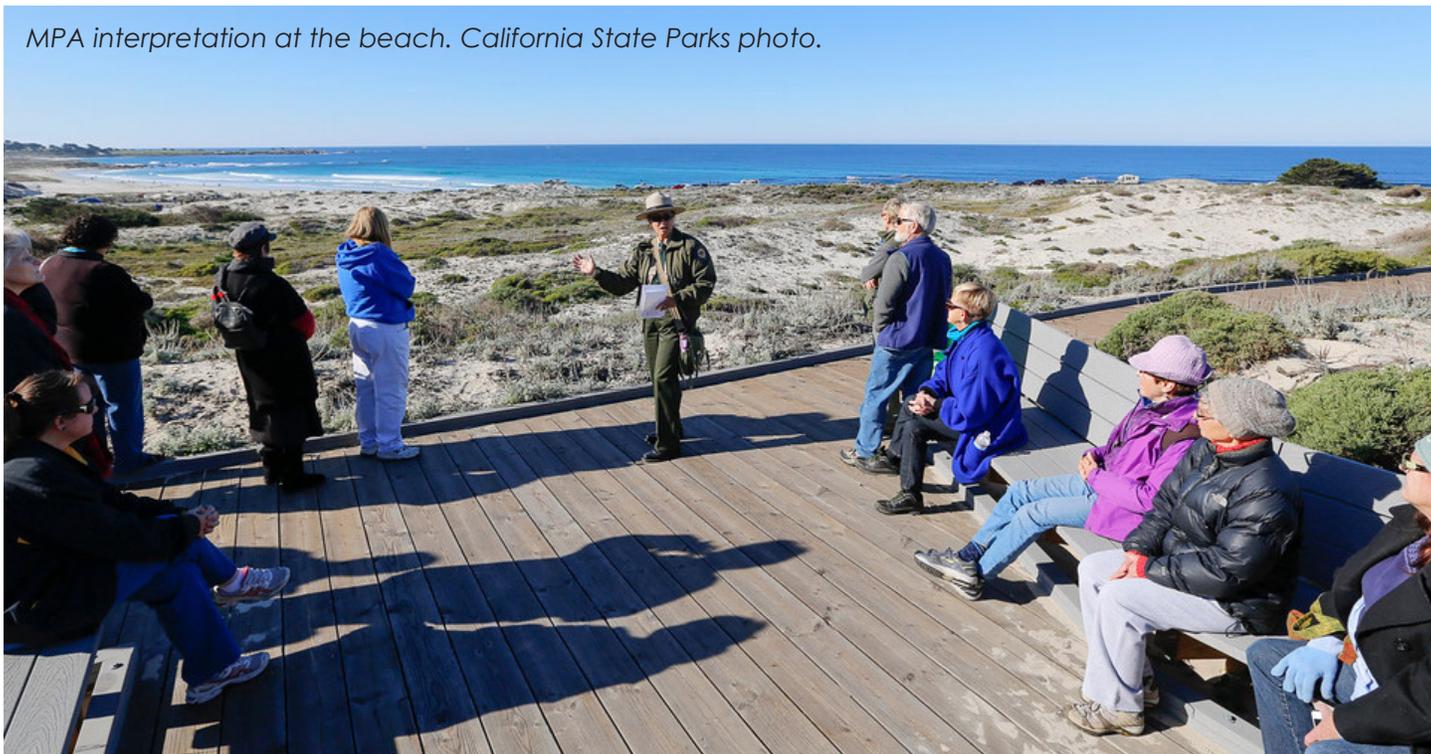
[4]*Adapted from Interpretive Master Planning, Veverka, John. Helena, MT. Falcon Press, 1994*
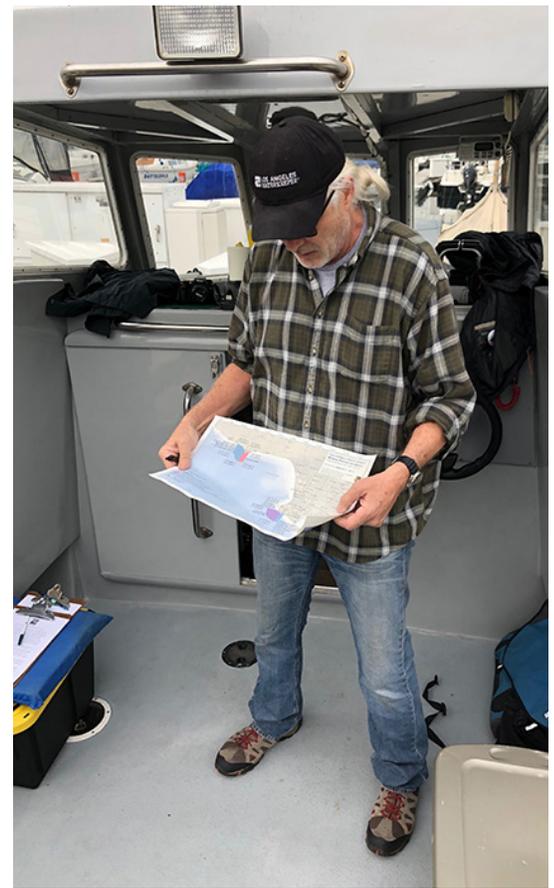
Left: Berkeley Public Marina staff installing new MPA signs. MPA Collaborative Network photo.
Right: Referencing an MPA map during MPA Watch training. MPA Collaborative Network photo.

- **Social Norms:** Social groups, personal interactions and relationships influence the communication process and can alter an audience member's ability to participate. Social norms are highly impactful on the communication process and can alter what people are likely to *do*, even if they *think* and *feel* otherwise.

- **Attitude towards the agency:** An audience member's belief system and opinions regarding CDFW, as well as partner agencies/organizations who conduct MPA outreach will influence judgements of credibility and trustworthiness.

- **Information needs and motives:** An audience's motives and needs for personally relevant information affect what is retained. For instance, a non-consumptive user interested in bird watching is more likely to retain information about snowy plover nesting habits than information related to MPA regulations. On the other hand, a consumptive user is more likely to process and store information about take regulations and MPA boundaries than camouflage strategies of the California red octopus.

- **Educational level, cognitive ability, and moral development:** Individuals within every audience exist along a spectrum of cognitive, emotional, and ethical ability. That background will shape how they interact with, incorporate, and respond to MPA messages.

KEY AUDIENCES[5]

- **Consumptive Users:** Includes user groups participating in extractive activities (commercial, recreational, and subsistence) like fishing, shellfish collecting, and kelp harvesting.

    ▶ **Why they're important:** Consumptive users are more likely to impact MPAs than other audiences. Additionally, consumptive users are more likely to be impacted by MPAs as a result of restrictions on their activities. Relying on California's waters for their recreation, sustenance, and/or livelihood gives consumptive users a stake in

City of Laguna Beach Marine Safety lifeguard explaining MPA regulations. MPA Collaborative Network photo.

[5]*Each audience category listed in this section can be broken into several sub-groups. To deliver best results, it is imperative to target messages and modes of delivery to as* specific *an audience as possible.*

CDFW interpreter explains MPA regulations. CDFW photo.

the health of the MPA Network, and they can be valuable allies in conducting MPA outreach of their own. Because MPAs specifically prohibit or restrict consumptive activities, providing regulatory information to this group is essential to ensuring compliance with the law and the overall success of the MPA Network.

▶ **What they need to know:** Consumptive users need to know the location of MPAs including specific boundaries and landmarks, as well as permitted and prohibited uses. Additionally, they may be interested in the management objectives that give rise to those regulations and any results from long-term monitoring.

▶ **How we should communicate with them:** Different types of consumptive users may need various combinations of the following: signage at harbors, docks, and popular shore fishing locations, water resistant maps, regulatory guides and booklets, species identification sheets, web resources, and mobile resources that utilize GPS capabilities.

- **Non-Consumptive Users:** Includes people like kayakers, surfers, tidepoolers, wildlife viewers, hikers, swimmers, divers, horseback riders, dog walkers, beachcombers, etc.

  ► **Why they're important:** Although we often think of non-consumptive users as benign when it comes to impacts on ocean ecosystems, they can have a large cumulative impact over time. Actions such as disturbing nesting sea birds or marine mammals, probing tide pools, walking on/trampling intertidal animals and habitats, leaving litter behind, and collecting living and non-living resources can have lasting repercussions. Helping non-consumptive audiences grasp the scope of their impacts can assist in changing behavior and educating them about the purpose and function of MPAs, and has the potential to build collective MPA awareness and stewardship over time.

  ► **What they need to know:** Non-consumptive recreational users may benefit from background information about MPAs, the species and habitats likely to benefit from MPAs, and how individual actions can make a lasting difference toward MPA effectiveness.

  ► **How we should communicate with them:** Effective tools include interpretive signs posted at popular beach locations or ocean overlooks, on-site interactions near popularly used beaches or tide pools, videos and interpretive mobile apps, and brochures and handouts containing information about species, habitat types, and cultural and natural history. Non-consumptive users can also benefit from online information that contains interpretive information.

Kids learning about MPAs from the deck of a ship. MPA Collaborative Network photo.

Bait and tackle shop showing off MPA supplies. California Marine Sanctuary Foundation photo.

- **Ocean-Related Businesses:** Includes bait and tackle shops, vendors who sell fishing licenses, dive shops, fish markets, aquaria, museums, visitor centers, and others.

  ► **Why they're important:** Ocean-related businesses are important because of their role in directly interfacing with both consumptive and non-consumptive audiences. Ocean-related businesses might be interested in sharing information about how MPAs benefit fisheries and habitats over time, and/or provide opportunities for education, recreation, and tourism.

  ► **What they need to know:** Ocean-related businesses need information on the purpose of MPAs, their location, regulations, habitats/species likely to benefit from MPAs, and the results of long-term monitoring.

  ► **How we should communicate with them:** Effective materials for ocean-related businesses include posters that can be displayed in stores, stickers, signage, guidebooks and brochures, and online resources that they can post on their own websites.

- **Youth:** Includes in-classroom students, on-site school groups, camps, after school programs, young anglers, junior ranger programs, and families with children visiting MPAs.

  ► **Why they're important:** Youth may be current or future consumptive and non-consumptive users of ocean resources and may become tomorrow's ocean stewards. Although youth may be a subset of various other audience groups, they require a unique communication approach to achieve cognitive, emotional, and behavioral objectives.

  ► **What they need to know:** Youth audiences may benefit from general and introductory information about the marine environment, the purpose and function of MPAs, and how individual actions can help protect marine ecosystems.

  ► **How we should communicate with them:** Activities that engage youth include interactive programs about why and how MPAs were created, educational curriculum, thematic games, interpretive exhibits/signs, and on-site presentations.

Students conducting water sampling in an MPA. WildCoast photo.

- **Non-English or English as Second Language (ESL) Speakers:** Includes both non/limited-English speaking residents of California as well as visitors from other countries. Roughly 1/3 of all Californians are native Spanish speakers. The five largest non-English speaking audiences are Spanish, Chinese, Tagalog, Vietnamese, and Korean.

  - ► **Why they're important:** Communicating with non/limited-English speakers is important because they engage in consumptive and non-consumptive activities in and around MPAs, just like their English-speaking counterparts. Communication with non/limited-English speaking audiences provides an opportunity to build relationships and draw connections across cultural lines, engage those communities in ocean stewardship, and ensure compliance with regulations.

  - ► **What they need to know:** Knowledge of regulatory information is of utmost importance in order to protect resources and avoid penalties. Additional information related to species/habitats and management objectives is also useful in providing a context for regulations.

  - ► **How we should communicate with them:** Provide relevant translations of text on signs, brochures, guidebooks, and digital media. Additionally, using photographs, illustrations, and/or visual symbols can be an effective strategy for communicating without words.

- **Non-Coastal Citizens:** This audience group includes Californians of all ages that do not live near the ocean and may not comprehend their direct connection to it.

  - ► **Why they're important:** Although not immediately self-evident, communicating with Californians and others who live far from the coast is beneficial to ensuring the long-term success of individual MPAs and the MPA Network as a whole. Many non-coastal residents engage in consumptive and non-consumptive marine-based recreation just as their coastal counterparts do. Additionally, they are "equal owners" to the state's MPAs and can impact legislative and policy decisions about MPA management.

  - ► **What they need to know:** How MPAs may benefit marine resources and what to do when they visit MPAs, including understanding and following regulations.

  - ► **How we should communicate with them:** Effective tools include social media, websites, videos, curriculum in schools, interpretive apps, journal articles, newspaper/radio/TV stories, as well as signs, brochures, guidebooks, and other forms of media when they visit the coast.

4. Messages

OVERVIEW

The overarching goal of all MPA messaging is to ensure the network functions as designed through gaining the public's compliance with MPA regulations. Although this may seem straightforward, the route by which we persuade our audiences to conform to or adopt new behaviors is non-linear and requires nuanced messaging. Changing behavior through communication is dependent on many factors, including the messenger, the audience, the outreach objectives, social norms, and the message itself.

Although developing effective messages may be familiar to many MPA communicators, below are a few best practices to help move our audiences to learn about, value, and act responsibly while in MPAs:[6]

PORTAL

Provocative— Provoking audiences to be curious about MPAs will help create an opening in which new information, new attitudes, and new behaviors are more likely to stick. Information should be presented in a way that is relevant to the audience, thought provoking, and entertaining, in order to pique interest.

Organized— Information should be organized and presented in an easy-to-understand manner that follows a logical progression of ideas. By scaffolding information around a central message, audiences are more likely to retain information and proactively act on that knowledge.

Relevant— Audiences must be able to understand concepts in terms of something they already know. Using analogies and metaphors that people are already familiar with can help bridge familiar ideas (like "home," "refuge," "park," or "wilderness area") to unfamiliar ideas (like "MPAs").[7]

Thematic— The theme is the anchor point to which all subsequent information relates. It is the overarching message of effective communication and will help audiences connect with and retain specific information.

Accurate— One of the key characteristics influencing the credibility and persuasiveness of communication is accurate, truthful information. In particular, correctly imparting information about MPA regulations and boundaries not only persuades audiences to comply with the law, but ensures that prosecution of violators can be conducted successfully when infractions occur.

Lasting— In order to get our messages to "stick," it is essential that we develop information that is consistent and repeated across multiple formats, from multiple sources, and on multiple occasions.

[6]*Adapted from California State Park's rubric for message effectiveness (RAPPORT), Basic Interpretation Learning System, California State Parks, Interpretation and Education Division, 2012, 83-90.*
 [7]*Metaphors/analogies should always be used with a caveat that MPAs are* like *parks, wilderness areas, etc., but are not equivalent to those land-based protected areas.*

MESSAGE COORDINATION

As described above, developing messages that are consistent across mediums (digital, hard-copy, and in-person), as well as across messengers (CDFW, other agencies, NGOs, MPA Collaboratives, etc.) is an essential component of persuasive communication. Generally, audiences retain only a small portion of what they see and hear from a single source. Hearing and reading similar messages across multiple formats, in multiple locations, and from multiple sources, makes audiences more likely to remember important information and act accordingly. For this reason, good communication within and among the many organizations and individuals involved in MPA outreach is essential to maximizing the effectiveness of our work. To assist in message coordination, CDFW can provide guidance and review some partner materials (see chapter **6. Product Development and Review**).

WHAT INFORMATION SHOULD BE MESSAGED?

To help meet the goals of the MLPA, and reinforce compliance with MPA regulations, communicators should target their messages to as specific an audience as possible. Because we often don't know who the end users of our outreach products will be however, a holistic approach is encouraged in which multiple messages are intertwined to appeal to and move a broad spectrum of audiences. An example of interlocking messages includes highlighting the regulations, the underlying reasons for those regulations (e.g. resources likely to benefit, management objectives, the science underway to measure MPA effectiveness), social norms that are being targeted (e.g. following regulations, proper tidepool etiquette, staying a safe distance from nesting sea birds), and the sanctions, if any, for violating regulations.

California State Parks interpreter educating visitors about MPAs. California State Parks photo.

STRATEGIC FRAMING[8]

During communication about MPAs, the first rule is to meet people where they are: connect and share values, and bridge from familiar ideas to new ones. Using positive language tends to be more effective with a wide range of audiences.[9] An example of positive framing would be accentuating activities that the audience can do in and around MPAs, rather than focusing solely on restricted activities. Using technical language and scientific jargon can cause some audiences to lose interest or become confused. Instead, keeping messages simple and concise is essential to reaching the widest number of people:

• Avoid abbreviations like "MPAs" when you first start talking about the issue in your materials or in face-to-face conversations. Instead, say "marine protected areas."

• Lead with local examples of protected areas, MPA collaboratives, volunteer programs, etc. Explain to the audience why they have a stake in their local MPAs and how they can get involved.

• Put people in the picture. Although MPA's primary function is to benefit marine species, habitats, and the larger ecosystem, MPAs are also open to many kinds of human use, including swimming, diving, wildlife viewing, boating, and in some instances fishing, or other consumptive activities.

Member of Del Norte MPA Collaborative with Native America doll and regalia, included as part of MPA outreach toolkit. MPA Collaborative Network photo.

• Do not focus on the details of the MLPA planning process; rather emphasize that California's MPAs were designed using the best available science with input from local citizens and highlight the results of ongoing monitoring.

• Focus on species likely to benefit from MPA protections. Although sharks, whales, and tuna are examples of "charismatic megafauna" that intrigue audiences, many of their home ranges are simply too large to gain much direct benefit from California's MPAs. Instead, focus on those species likely to spend significant portions of their lives within MPAs (many of which are charismatic too!). Examples include many kinds of rockfish, invertebrates, and some shorebirds. For more information about species likely to benefit, see the following lists: North Coast, North Central Coast, Central Coast, and South Coast.

- Since not all MPAs are the same, it is important to differentiate between various MPA designation types. Remember, while some are no-take state marine reserves (SMRs), others allow some form of take (state marine conservation areas, state marine parks, and state marine recreational management areas) or restrict movement through them (special closures). A list of designation-types and definitions can be found in chapter 5. Design Guidelines and Regulatory Standards.

- Do not promise MPA benefits that have not been proven. MPAs may take many years or decades to benefit marine resources, and not all MPAs will benefit resources equally (if at all). When describing MPA benefits, make sure to include qualifying words like "may," "potentially," or "hoped-for," not words like "will" or "must."

- Let audiences know the state has designed a scientifically rigorous and robust MPA monitoring program consisting of two-phases: Phase 1, which was completed in early 2018, focused on regional baseline monitoring and established a "snapshot" of ecological and socioeconomic conditions near the time of MPA implementation. Phase 2 is focused on statewide long-term monitoring to track changes inside and outside MPAs over time.
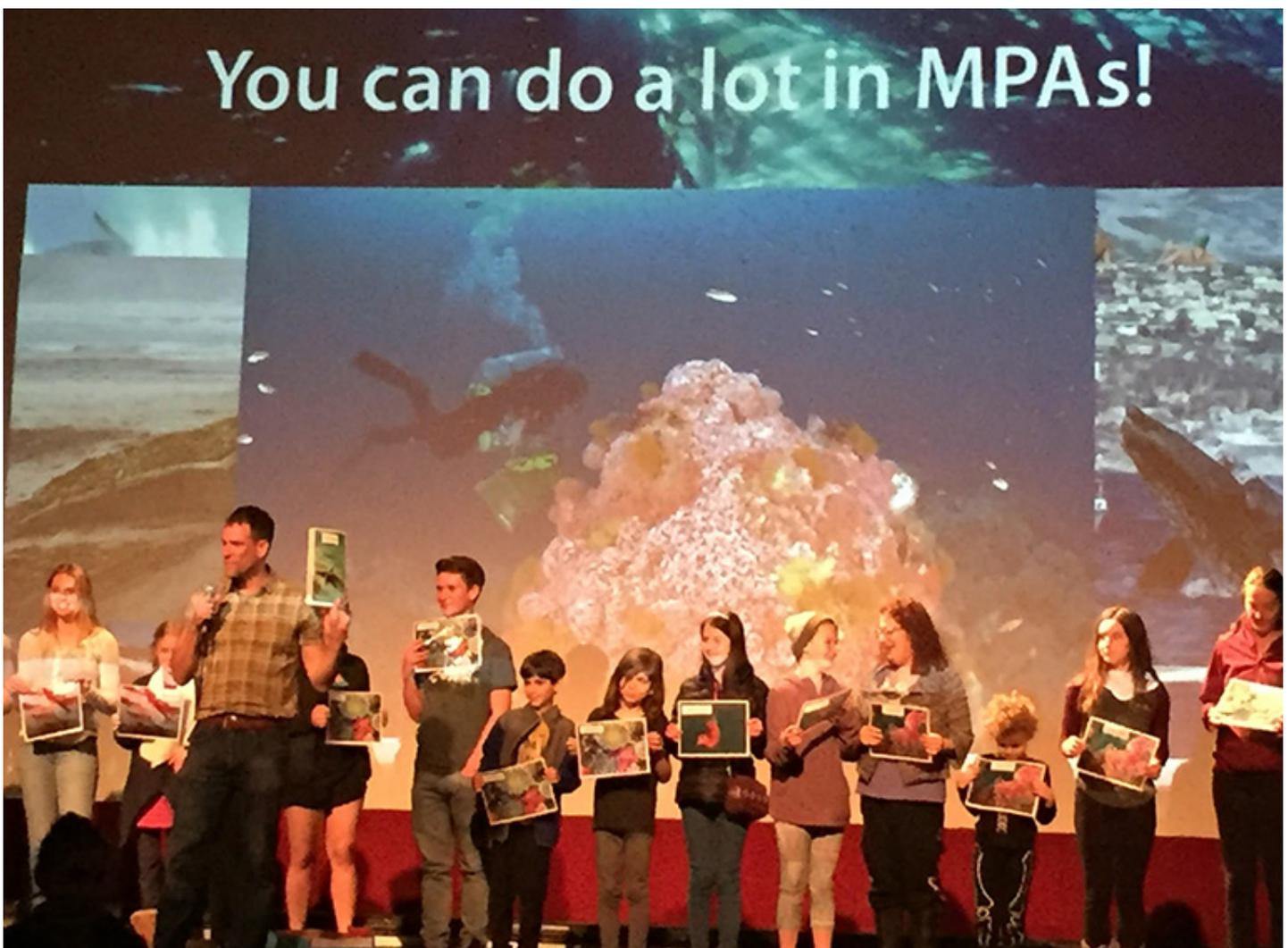
MPA outreach at Ocean Night event. CDFW photo.

THEMATIC STATEMENTS

A theme is the central or key idea of any interpretive message. When communicating with visitors, use of a thematic statement can increase visitor understanding and knowledge retention over time.[10] In order to succinctly convey the purpose and function of the MPA Network, CDFW has developed the following overarching thematic statements that may be used alone or in tandem:

1. California's MPA Network helps conserve and protect the structure, function and integrity of marine ecosystems and wildlife.

and

2. MPAs can help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.

The two statements integrate the role of MPAs in resource protection while fostering public ownership and engagement in MPA stewardship. They combine the "what" with the "how" and "why" of MPAs. Use of these themes in presentations and/or interpretive products can help frame subsequent information, allowing audiences to make sense of and retain information related to MPAs.

Members of the Los Angeles MPA Collaborative show off their new sign. M. Quill photo.

[10] *Thorndyke, P.W. 1977. Cognitive Structures in Comprehension and Memory of Narrative Discourse. Cognitive Psychology 9(1):77-110.*

Additionally, several sub-themes can be used to expand upon and elucidate the role of MPAs in resource management and protection. Those sub-themes are derived from the six goals of the MLPA, which guided the development of the MPA Network and continue to underpin MPA messaging today:

1. **MPAs can protect the natural diversity and abundance of marine life, and the structure, function and integrity of marine ecosystems.**
   The incredible biodiversity of California's marine waters is due in part to the productivity, integrity, and diversity of its many coastal marine ecosystems (e.g., estuaries, sandy beaches, rocky intertidal zones, kelp forests, deep rocky reefs, marine canyons). The California MPA Network helps safeguard this biodiversity by protecting species, the habitats they rely on, and processes within marine ecosystems (e.g., trophic relationships, species interactions, productivity).

2. **MPAs can help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.**
   By reducing human impacts within MPAs on marine species and the ecosystems that support them, individual organisms may live longer, grow larger, and produce more offspring. Because the offspring (e.g., larvae) of many marine species are transported by ocean currents far from the place of their birth, protected populations within MPAs may contribute to the growth and size of populations along the entire coast.

3. **MPAs can improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, while being managed in a manner consistent with protecting biodiversity.**
   In addition to their ecological function, California's MPAs are wonderful places to explore and enjoy California's marine environment. California's coast is world-renowned for its ocean-related recreation, and marine-based tourism is a growing sector of its economy. MPAs can enhance human enjoyment of the California coast by safeguarding the state's thriving marine biodiversity, watchable wildlife, intact natural habitats, and rich cultural heritage.

4. **MPAs can protect marine natural heritage, including protection of representative and unique marine life habitats in California waters for their intrinsic values.**
   The diversity of life in California's marine waters is the heritage of all Californians. The MPA Network includes both common habitat-types, such as sandy beaches, rocky intertidal zones, kelp forests, and deep rocky reefs, and unique habitat types such as estuaries, underwater pinnacles, and marine canyons. By distributing MPAs along the entirety of California's coast, and replicating habitat types within MPAs in each coastal region, the California MPA Network helps protect the state's marine heritage for future generations.

5. **Ensure California's MPAs have clearly defined objectives, effective management measures, adequate enforcement, and are based on sound scientific guidelines.**
California's MPAs are managed as a statewide network through the state's MPA Management Program, which consists of four focal areas that are a direct reflection of the MLPA goals and requirements: 1) outreach and education, 2) research and monitoring, 3) enforcement and compliance, and 4) policy and permitting. The MPA Management Program was designed to ensure the MPA Network is adaptively managed and informed by engaged partnerships at the federal, Tribal, state, and local level.

6. **Ensure the state's MPAs are designed and managed, to the extent possible, as a network.**
California's MPAs were designed to work as part of an ecological network. Linked by the transport of species from one MPA to another, and by the movement of adults and juveniles between onshore and offshore MPAs, the MPA Network contributes to the integrity of ecosystems within and between MPAs. Given sufficient time and protection, the benefits of the MPA Network for species and ecosystems may be much greater than the benefits of individual MPAs.

CDFW scientist assisting with MPA outreach. CDFW photo.

Left: CDFW wildlife officer conducting MPA outreach at the beach. CDFW photo.
Right: Members of Golden Gate MPA Collaborative showcasing a new MPA sign.
MPA Collaborative Network photo.

MPA MOTTOS

When developing outreach materials, use of an approved MPA motto is encouraged to help reinforce communication goals and provide consistent messaging. MPA mottos are meant to condense the purpose of the MPA Network into a short phrase that is easily understood and retained by the public. Additionally, they are statements that can help convey the beauty and bounty of the California MPA Network and connect behavioral requests to underlying management goals. The two approved MPA mottos can be used as headers or footers on written documents, as well as titles in interpretive programs, signs, brochures, and posters.

1. **Safeguarding an Underwater Wilderness**

    and

2. **Conserving California's Coastal Treasures**

MPA summer camp at Back Bay Science Center. CDFW photo.

5. Design Guidelines and Regulatory Standards

OVERVIEW

The information in this section is intended to guide content development of MPA outreach materials. Consistent and accurate use of text, graphic elements, designation colors, maps, logos, and regulatory information builds an identity/brand for the MPA Network, manages perceptions about CDFW and partners, builds upon the successes of past projects, and eliminates confusion. **Additionally, use of CDFW-approved regulatory language and boundary coordinates ensures that MPA regulations are enforceable in a court of law.**

DESIGN GUIDELINES

MPA outreach products should be designed to maximize comprehension among the greatest number of people. The following design considerations can help in developing text and graphic components that are accessible to a broad cross-section of Californians, including those with disabilities.[11]

TEXT

The goal of writing is to convey a message that the reader understands. Generally, this means writing in a clear, concise, and accurate manner that gets ideas across through an economy of words. Write in an active voice wherever possible, and avoid abstract words, acronyms, and overly scientific jargon. Below are a few writing tips for increased readability and comprehension:[12]

- As American's average reading ability is at an eighth grade level, public-facing text should be written at that grade level or below.[13] One method of determining readability of text is the Flesch-Kincaid Grade Level Test found in Microsoft Word.
- Sentences should not be too wordy (15-20 words maximum).
- Paragraphs should be short (3-4 sentences).
- Avoid orphans/widows (words that are split and hyphenated between two lines, or single words that are placed at the beginning or end of a line with the rest of the sentence on a different line).

[11]*For more information about developing outreach materials for persons with disabilities, see California State Parks Accessibility Guidelines.*
[12]*For more information about effective writing techniques, see Strunk, W. and White, E.B., The Elements of Style, 4th Edition, Macmillan Publishing, New York, 2000.*
[13]*Kutner M, Greenberg E, Baer J. National Assessment of Adult Literacy (NAAL): A First Look at the Literacy of America's Adults in the 21st Century (NCES 2006-470). Washington, DC: National Center for Education Statistics; 2005. http://nces.ed.gov/naal/pdf/2006470.pdf .*

- Wherever possible, use sans-serif fonts. Some examples of sans-serif font families include Century Gothic, Arial, Franklin Gothic Book, Lucida Sans, Myriad Pro, Tahoma, and Trebuchet MS.

- Avoid use of characters that are italic (except for scientific names), oblique, script, highly decorative, or of other unusual forms, as they can be difficult to read.

- Font color should contrast with the background using either dark fonts on a light background or light fonts on a dark background. A minimum of 70 percent contrast between font and background is the industry standard and is required for accessibility compliance.

- Place text over a solid background to achieve the recommended minimum contrast. Placing text over images or patterns forces readers' eyes to constantly adjust to varying contrasts and greatly reduces legibility for those with visual or learning disabilities.

PHOTOGRAPHS/ VIDEOS

Because one of the primary goals of MPA outreach is to educate the public about the resources likely to benefit from MPAs, photographs/videos should ideally be of resources/ activities found *within* MPAs or surrounding areas. Additionally, highlighted species should be those that are most likely to benefit from MPA protections, like rockfish, invertebrates, and many sea birds. Though charismatic, animals like tuna, sharks, and many marine mammals are simply too migratory to gain much benefit from MPAs. Additionally, featured human activity should be legally permissible and broadly align with the goals of the MLPA.

Prior to using a photograph/video/audio file for any outreach product produced for CDFW/ approved by CDFW, the developer must obtain written consent from the originator of the digital file. The written consent must include a statement detailing how and in what circumstances the photograph/video/audio file may be used. Additionally, the media developer must credit the creator of the digital file within the final outreach product.

MPA COLOR CRITERIA

MPA colors are standardized for all designated areas and their correct use can help the public identify and understand differences in regulations. Some limited deviation of color shading is sometimes used (i.e. SMRs are shown as either darker or lighter red) and is allowed to accommodate certain artistic need, however, any deviations should serve a specific purpose and be consistent with the standard. Filled solid color is preferred. If solid fill is not used, maps should display boundary outlines in the assigned color for each MPA or designated area. Table 1 includes the standardized color-coding, including CMYK (Cyan, Magenta, Yellow, Black), RGB (Red, Green, Blue), Lab (Lightness, A (Green-Red), B (Blue-Yellow)), HSB (Hue, Saturation, Brightness), and Web color coding.

	C	M	Y	K	R	G	B	L	a	b	H	S	B	#
State Marine Reserve	0%	99%	100%	0%	255	0	0	54	81	70	0°	100%	100%	ff0000
State Marine Conservation Area	80%	57%	0%	0%	0	112	255	49	18	-80	214°	100%	100%	0070ff
State Marine Conservation Area (no-take)	29%	58%	0%	0%	223	115	255	66	58	-52	286°	55%	100%	df73ff
State Marine Recreational Management Area	77%	7%	100%	1%	56	168	0	61	-51	60	100°	100%	66%	38a800
Special Closure	11%	87%	0%	0%	255	0	197	58	88	-32	314°	100%	100%	ff00c5
State Park	6%	0%	97%	0%	255	255	0	98	-16	93	60°	100%	100%	ffff00

Table 1: Standardized color-coding for different MPA designations.

MPA LOGO AND CDFW SHIELD

The MPA logo and CDFW shield should be displayed wherever practical on **all MPA outreach products that have CDFW approval**. Use of the logo and shield will help brand the MPA Network and contribute to cohesive and consistent outreach, regardless of the source of the media. When using the logo and shield, follow the guidelines below:

- The logo and shield should appear clear and crisp, and be printed at a minimum of 300 DPI.

- Reproduce the logo and shield only from camera-ready proofs or electronic printing files. Do not copy the logo and shield from CDFW's website, as they are low-resolution digital files. To get high quality files, contact CDFW directly. Outreach products that undergo CDFW's product review process are eligible to use the MPA logo and CDFW shield. **Permission to use the logo and shield will be granted by CDFW on a case-by-case basis** (see chapter **6. Product Development and Review**).

- The height of the logo and shield should not be less than 1/2 of an inch (0.5 inch) tall, shown below at the minimum actual size for print materials:

- Do not distort, rotate, or recolor the graphic elements or alter the type elements of the logos.

- When the MPA logo is used on a product that displays logos from one or more agencies/ organizations outside CDFW, the MPA logo should be set apart from all other logos. By

separating the MPA logo, audiences will understand that it represents a *thing* (the MPA Network), not an agency or organization.

REGULATORY STANDARDS

When developing outreach materials that include regulatory information, the accuracy of the language used is crucial to the success of the product. Providing information that is both factually correct and understandable will help audiences protect resources and avoid sanctions, while allowing law enforcement to prosecute cases when infractions occur. It is best to not interpret, alter, or otherwise summarize written regulations to avoid error. When providing regulatory information about specific MPAs, use complete regulatory language (CCR Title 14, Section 632(b)), or if space is an issue, CDFW approved summaries of those regulations.

CALIFORNIA MPA DESIGNATIONS

The California MPA Network includes five designation types with distinct regulations and varying levels of protection. In order to ensure that California's MPAs have the best possible chance at success, it is essential that audiences understand and act upon these distinctions. Use the full designation type when referencing a specific MPA. As examples, the MPA within Carmel Bay should be called Carmel Bay State Marine Conservation Area, and the MPA at Point Conception should be called Point Conception State Marine Reserve. Additionally, when describing MPA designation-types in general, use verbatim language for those regulations, or CDFW-approved summaries below:

- **State Marine Reserve (SMR):**
  Regulatory verbatim: In a state marine reserve, it is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource, except under a scientific collecting permit issued by CDFW pursuant to Section 650 or specific authorization from the commission for research, restoration, or monitoring purposes.

  Approved summary: It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resources unless authorized for research, restoration, or monitoring purposes.

- **State Marine Conservation Area (SMCA):**
  Regulatory verbatim: In a state marine conservation area, it is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource for commercial or recreational purposes, or a combination of commercial and recreational purposes except as specified in subsection 632(b), areas and special regulations for use. CDFW may issue scientific collecting permits pursuant to Section 650. The commission may authorize research, education, and recreational activities, and certain commercial and recreational harvest of marine resources, provided that these uses do not compromise protection of the species of interest, natural community, habitat, or geological features.

  Approved summary: It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resources except for select commercial or recreational harvest specifically authorized, and for authorized research, restoration, and monitoring.

- **State Marine Park (SMP):**
  Regulatory Verbatim: In a state marine park, it is unlawful to injure, damage, take, or possess any living or nonliving marine resource for commercial purposes. Any human use that would compromise protection of the species of interest, natural community or habitat, or geological, cultural, or recreational features, may be restricted by the commission as specified in subsection 632(b), areas and special regulations for use. CDFW may issue scientific collecting permits pursuant to Section 650. The commission may authorize research, monitoring, and educational activities and certain recreational harvest in a manner consistent with protecting resource values.

  Approved Summary: It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resources except for select recreational harvest specifically authorized, and for authorized research, restoration, and monitoring.

- **State Marine Recreational Management Area (SMRMA):**
  Regulatory Verbatim: In a state marine recreational management area, it is unlawful to perform any activity that would compromise the recreational values for which the area may be designated. Recreational opportunities may be protected, enhanced, or restricted, while preserving basic resource values of the area. No other use is restricted unless specified in subsection 632(b), areas and special regulations for use.

  Approved Summary: An area where it is unlawful to perform any activity that would compromise the recreational values for which the area may be designated. Recreational opportunities may be protected, enhanced, or restricted, while preserving basic resource values of the area.

- **Special Closure:**
  Regulatory Verbatim: A special closure is an area designated by the Fish and Game Commission that prohibits access or restricts boating activities in waters adjacent to sea bird rookeries or marine mammal haul-out sites.

  Approved Summary: Prohibits access and/or restricts boating activities in waters within a specified distance from the shoreline adjacent to seabird and marine mammal sites, either seasonally or year-round.

In addition to using verbatim regulatory language and/or CDFW-approved summaries, please follow the guidelines below:

- When providing regulatory information, the following disclaimer must be included: "Please Note: The information provided here does not replace the official laws and regulations found in the California Fish and Game Code or the California Code of Regulations (CCR) Title 14."

- If regulations are not included (for instance on interpretive signs), a reference to CDFW's website (www.wildlife.ca.gov/MPAs) for regulations must be included.

- Defining terms: include regulatory definitions for "Take," "Pelagic Finfish," and "Coastal Pelagic Species" where these terms are used in regulations.

- Introducing regulations: use "It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resources, EXCEPT:"

- Other regulated activities: Additional MPA provisions such as activities permitted by other agencies, or provisions for tribal take in specific MPAs, do not need to be listed verbatim. In lieu of verbatim, include a general reference to these regulations and where to obtain them.

- Recreational and commercial fishing regulations: include both, regardless of target audience. If only one or the other is presented, clearly indicate that more restrictions apply (e.g., if only recreational fishing regulations are presented, state that "other commercial allowances or restrictions apply").

MAPS

CDFW has Geographic Information System (GIS), as well as other files, available for public use at www.dfg.ca.gov/marine/GIS/downloads.asp. For consistency purposes, and to ensure that regulations are enforceable, please adhere to the following criteria when developing maps:

CDFW interpreter at Elkhorn Slough discusses MPAs. CDFW photo.

- Include all MPAs and Special Closures within the geographic extent shown, not just the one you are focused on.

- To the extent possible, show the entire MPA within the map, not just a portion.

- Include full name for each MPA, including the designation, when space allows.

- MPAs should be represented in the standardized color scheme (see MPA Color Criteria page 29) including marking for seasonal components when they exist.

- When displaying a map that includes federal MPAs as well as state MPAs (e.g. around the Channel Islands), label federal MPAs separately from state MPAs. Additionally, federal MPAs should include the same color scheme as state MPAs, but include details to differentiate them from state MPAs (overlaying the three nautical mile maritime limit or cross-hatching the federal MPAs works well).

- Display of landmarks, such as city/beach names, roads, parking lots, named rocks, lighthouses, or buoys, is encouraged so long as MPA boundary coordinates are included.

Include coordinate information directly on the map:

- Include coordinates labeled on the map whenever feasible.

   ► This is particularly important for an audience that will be navigating a vessel around the boundaries of MPAs.

- MPA boundaries that use straight lines along a parallel (latitude) or meridian (longitude) may include a label on the line that indicates just the relevant latitude or longitude (see example at right).

- If a federal component of an MPA is included in the map, then only include the boundary coordinate information for the area around the perimeter of the combined MPA.

- Coordinates must be in degrees, decimal minutes format (DD° MM.MMM') - the exact format found in regulation and used by CDFW. Do not convert the coordinates to other units or geographic coordinate systems.

   ► Detailed coordinate information can be found in California Code of Regulations Title 14, Section 632.

- **Use exact boundary coordinates. Do NOT round or summarize coordinate information in any way. Publication of reference material with modified or erroneous coordinates will significantly reduce the enforceability of MPA regulations.**

- Boundary coordinates may be included directly on the map/image of the MPA without any descriptive text.

- Boundary coordinates may also be listed in a table separate from the mapped images. Boundary coordinate information may be excluded. However, if this is done, information on where to find those coordinates (e.g., CDFW website) must be included.

- Special Closures may be seasonal or year-round. Boundaries and seasonality for these are specific to the Special Closure and must be included. Conditions for Special Closures needs to be indicated through the following boundary line style:
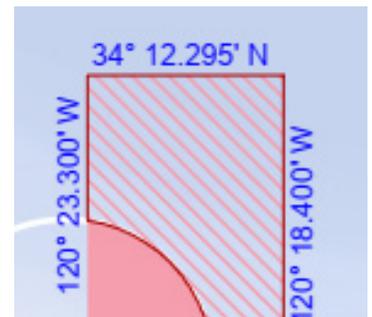
► Year-round closures should be represented with a solid line.

► Seasonal closures should be represented with a dotted or dashed line.

► When possible, distance of the closure from shore (e.g., 300 feet) should be included for either type of special closure.

Include a map/chart legend that displays:

• Only the MPA designation types that appear on the map/chart (i.e., if there is no SMP on the map/chart do not include it on the legend).

• State waters boundary line.

• Other helpful symbols such as buoys, harbors, wildlife viewing areas, etc., as desired.

• CDFW's website www.wildlife.ca.gov/MPAs.

DISCLAIMER LANGUAGE

The presence or absence of disclaimers regarding maps/charts and regulations often plays a role in prosecuting violations. Therefore, the following standard disclaimers are provided to insert on maps/charts or near MPA regulations:

• Map disclaimer: "Maps not to be used for navigation."

• MPA regulations disclaimer: "This document does not replace the official regulatory language found in California Code of Regulations, Title 14, Section 632." (Note: This is particularly important to place near tables providing MPA allowed uses).

Figure 3: An example of an interpretive sign (2'x3') with CDFW-approved text, map, and regulations:

6. Product Development and Review

To ensure that outreach products meet the highest standard for communicating with the public, CDFW recommends the following during the creation of outreach products:

1. **Conceptual:** Prior to creating new outreach materials, CDFW encourages prospective developers to review the MPA Education and Outreach Needs Assessment produced by the California Marine Sanctuary Foundation (CMSF) and the MPA Statewide Leadership Team. The document sheds a light on existing MPA education and outreach and offers specific strategies to overcome and resolve key communication issues across the state.

   Content developers are encouraged to use existing CDFW-approved outreach materials, and/or develop new products that use those products as a template/model. CDFW has developed an assortment of MPA outreach materials for this purpose, including regulatory and interpretive guidebooks and brochures, maps, fact sheets, blog posts, posters, videos, and more. Additionally, a comprehensive collection of MPA outreach materials (produced by CDFW as well as partners) is accessible through the Ocean Protection Council's website.[14]

California State Parks interpreter with new MPA sign. California State Parks photo.

   Finally, entities that plan to develop their own MPA outreach materials are encouraged to consult with Tribes and Tribal governments. As the traditional users and stewards of California's marine resources, partnership with California Tribes and Tribal governments is particularly important to MPA management. To obtain a list of Tribes and Tribal governments in specific geographic locations across California, contact the Native American Heritage Commission.

   Once an organization has developed a conceptual plan for the creation of a new outreach product, the following self-review questions should be considered:

[14]Note: not all of the materials contained in this library have undergone CDFW review/approval.

- ► Who is the intended audience?
- ► What are the messaging objectives?
- ► Have you contacted the MPA collaborative group in your area to discuss your idea?
- ► Is the outreach product fulfilling an unmet need?
- ► Are there products, developed by CDFW or other outreach partners, which could provide ideas/templates as you are developing your product?

2. **Development:** The development stage includes designing and writing draft products that should follow the guidelines described in chapters **4. Messages** and **5. Design Guidelines and Regulatory Standards** of this document.

3. **Review and approval:** Partners who receive funding from the state for MPA outreach must consult with CDFW for review and approval of their products. The need for product review will be determined by CDFW on a case-by-case basis and a timeline for review will be established accordingly. Upon gaining final approval of their products, CDFW will send partners the CDFW shield and MPA Network logo for inclusion as a symbol of verification. **Under no circumstances may the CDFW shield or MPA logo be used without written approval from CDFW.**

4. **Evaluation:** In order to ensure that outreach materials are successful in meeting the messaging goals outlined in the conceptual stage of the project, it is important that developers evaluate the successes and/or make note of potential improvements for future materials. Sharing the results with CDFW and other MPA outreach partners is essential to improving MPA outreach and fulfilling the mission of the MLPA to ensure sustainable marine resources for future generations.

MPA education underwater! CDFW photo.