California Department of Fish and Game
Feasibility Criteria and Evaluation Components for
Marine Protected Area Proposals

Revised 23 March 2010

Introduction: The purpose of this document is to provide the North Coast Regional Stakeholder Group (NCRSG) with the feasibility criteria and approach the California Department of Fish and Game (Department) will use to evaluate and provide advice on proposed marine protected area (MPA) proposals. As specified in the Marine Life Protection Act (MLPA) Initiative Memorandum of Understanding (MOU), the Department will actively participate in MPA proposal development with the NCRSG and MLPA Blue Ribbon Task Force (BRTF) by providing feedback and guidance, rather than developing its own preferred alternative. The MOU specifies that the Department may ultimately provide the California Fish and Game Commission (Commission) with information, analysis and comments on the alternative MPA proposals, and on the recommendation for a BRTF preferred alternative to the Commission. The criteria used for the analysis and comments is provided here to assist the NCRSG with incorporating guidelines into their MPA proposals to enhance enforcement, implementation and management of MPAs ultimately adopted for the study region.

General Approach: The Department will review and comment on MPA proposals developed during the MLPA Initiative planning process. These reviews will focus on feasibility aspects of each proposal and evaluate the prospects of proposals to meet the goals of the MLPA. The Department will provide comments and advice on MPA proposals to the NCRSG, the BRTF, and ultimately the Commission.

The Department's Key Advice-Giving Role: Since the Department will not select its own preferred alternative or recommend any particular stakeholder alternative, the advice provided by the Department is a key component of the Department's role in the MLPA implementation process. As the ultimate trustees for the Marine Life Protection Program, the Department's evaluations of MPA proposals help ensure that proposals are enforceable, create regulations that are readily understood by the public, and have good prospects for meeting the goals of the MLPA.

This document synthesizes the Department's advice on feasibility provided in previous study regions[1,2,3] and also incorporates new guidance based on lessons learned from the MLPA process to date. This document provides an overview of the criteria that will be used by the Department to evaluate MPA proposals, and provides a process overview for Department feasibility evaluations of MPA proposals. While no individual criterion is absolute, the criteria taken together should form the guiding principles used in designing

[1] CDFG. Statement of feasibility criteria for use in analyzing siting alternatives during the second phase of the Marine Life Protection Act Initiative. June 11, 2007.
[2] CDFG. Feasibility criteria and evaluation components for marine protected area proposals. 12 November 2008.
[3] CDFG. Department of Fish and Game update of feasibility criteria for use in analyzing siting alternatives during the second phase of the Marine Life Protection Act. February 11, 2008.

MPA proposals. These criteria should be considered along with the scientific guidance and other design advice found in the draft *California Marine Life Protection Act Master Plan for Marine Protected Areas* (Master Plan), and provided by the MLPA Master Plan Science Advisory Team (SAT). Together, this document, the Master Plan, and SAT guidance provide the necessary information to craft feasible MPA proposals that enhance the likelihood of meeting the goals of the MLPA.

I. FEASIBILITY CRITERIA

The feasibility criteria described in this document are guidelines for creating MPA proposals that are enforceable, readily understood by the public, and that meet the goals of the MLPA. Much of the guidelines for designing MPAs emphasize *simplicity of design* to enhance both enforceability and public understanding. By designing MPAs that are simple, the likelihood of unintentional infractions is reduced.

Establishing MPA Names

MPAs names should be simple, reasonably short, and reflect the geographic area designated. MPAs should not be named after individual people or groups.

MPA Types

There are three types of MPAs that can be used under the MLPA. These are state marine reserves (SMR) (no take areas), state marine parks (SMP) (areas that allow some recreational take), and state marine conservation areas (SMCA) (areas that allow some commercial and/or recreational take). Take regulations proposed for each MPA should reflect the proposed MPA type. For example, commercial take should not be included in a SMP. Another marine managed area classification with application is state marine recreational management areas (SMRMA). In areas where subtidal protection is desired but waterfowl hunting presently occurs, the Department recommends that a SMRMA designation be applied with regulations that provide MPA-like protections subtidally while specifying that waterfowl hunting is still permitted.

MPA Boundaries

MPA boundaries should be well marked (where possible), recognizable, and readily determinable. Boundaries should be clear and simple with design consideration given to the needs of the general public and to facilitate effective enforcement. Boundaries should consider multiple user types, including shore-based, motorized and non-motorized boat-based users. Clear, simple, well-designed MPA boundaries increase the likelihood that MPA regulations will be enforceable and readily understood by the public.

Boundaries in general: All boundaries will be described using *straight* lines of latitude and longitude. Curved or undulating lines should be avoided. Boundaries should be located at either readily determined lines of latitude and longitude, or at easily recognizable permanent landmarks. MPA boundaries should also be oriented due north/ south and east/ west, whenever possible.

Use readily determined lines of latitude and longitude
Lines of latitude and longitude are considered readily determinable when they are located at *whole* minutes of latitude and longitude (e.g. 36° 24.0). Half-minutes are less desirable (e.g. 36° 24.5), and 1/10th minutes are the least preferred and hardest to enforce (e.g. 36° 24.7). The use of 1/100th of a minute resolution (e.g. 36° 24.56) should only be utilized when lining a boundary with an easily recognizable permanent landmark (see below).

Use easily recognizable permanent landmarks
Utilizing easily recognizable permanent landmarks or shoreline features as MPA boundaries provides a common, easily referenced understanding of MPA boundaries. Easily recognizable permanent landmarks include, but are not limited to: rocks, points, headlands, islands and navigational buoys. Easily recognizable permanent landmarks do not include trees, buildings or other non-permanent or not readily visible structures or things (for example, siting a boundary at a parking lot or outflow pipe). When lining MPA boundaries up to easily recognizable landmarks, it is appropriate to use 1/100th of a minute resolution (e.g. 36° 24.56) as it allows the boundaries to be accurately drawn to the desired point.

Use of Landmarks vs Readily Determined Lines of Latitude and Longitude
Both recognizable permanent landmarks and readily determined lines of latitude and longitude should be utilized for designing MPAs. However, determining when to use one over the other can be challenging. When considering which to use, the Department recommends that stakeholders first consider the overarching aspects of the area under consideration for MPA placement. Some aspects to consider are site accessibility (# of parking spaces, # and capacity of boat launching facilities), and the relative level of shore-based consumptive activity compared to boat-based activity.

In estuarine waters (all bays, estuaries, sloughs, channels, and lagoons located within the MLPA study region boundary), the Department prefers the use of easily recognizable permanent landmarks (such as bridges, etc) to delineate boundaries, to ease enforceability and public understanding of boundaries. In offshore areas, places that are heavily utilized for shore-based consumptive activities, stakeholders should consider the use of easily recognizable permanent landmarks as higher priority than using major lines of latitude and longitude. For example, if major lines of latitude and longitude will “split” a beach or rocky intertidal area with heavy consumptive use, they should not be used. In cases such as this, the Department recommends that easily recognizable landmarks be utilized to ease enforcement and public understanding of the regulations. For example, the end of the beach may interface with rocky cliffs; this sand-rock interface may provide an easily understood boundary for shore-based and nearshore boat-based users. For areas that can be characterized primarily by boat-based consumptive activities, either easily recognizable permanent landmarks or readily determined lines of latitude and longitude can be utilized, depending on characteristics of the location under consideration.

Overall, the Department recommends that stakeholders strive to design MPA boundaries that are easily determinable for both boat-based, and land-based consumptive users. In many cases, boundaries placed at easily recognizable landmarks can also be placed at readily determined lines of latitude or longitude by slightly shifting the boundary to the line while still approximating the landmark. Stakeholders should seek solutions that optimize enforceability and ease of understanding for all users.

Avoid using depth contours and distance offshore: Using depth contours or distance offshore as MPA boundaries *should be avoided* due to ambiguities in determining exact depths and distances, and poor enforceability. The use of either of these for MPA boundaries can be difficult for the general public to easily and consistently determine. For example, the use of depth contours can be difficult for the general public in areas with largely varying depths. If distance offshore is desired, it should either be designed as coordinates connected by a line that approximates the depth intended (while also meeting other criteria described in this document). Alternatively, it should extend from the shoreline to the three mile state water boundary.

Use diagonal lines only in limited circumstances: Though not optimal, diagonal lines may be utilized for MPA boundaries under limited circumstances. Diagonal lines may be used if they follow the angle of the coastline and have all of the offshore components "anchored" at whole minute lines of latitude *and* longitude (e.g. 36° 24.0). Also, boundaries connecting to the shore, generally the northern and southern boundaries, should be oriented due east/ west from the mean high tide line. Diagonal boundaries should also be placed sufficiently offshore to accommodate nearshore users that are less likely to utilize navigational equipment. An example of how diagonal lines can be utilized in MPA designs while also meeting feasibility guidelines is depicted in Figure 1B at the end of this document. Diagonal lines should only be used when their use will simplify both user needs and enforcement of the area.

Placing MPA corners: Offshore MPA corners can occur at the outside edge of an MPA. These "hanging corners" should be formed at a 90 degree angle. The most preferred option is to place these corners on whole minutes of latitude and longitude (e.g. 36° 24.0). Placing corners at half-minutes is less desirable (e.g. 36° 24.5) and placing corners at 1/10th minutes (e.g. 36° 24.7) is the least preferred and hardest to enforce. However, MPA corners that do line up with a visible landmark should use a 1/100th of a minute resolution (e.g. 36° 24.56'). This allows boundaries to be accurately drawn to the desired point.

Take Regulations

One of the most important feasibility factors is MPA regulations. Ideally, these should be easily understood by the public (and thus reduce unintentional infractions), and be readily enforceable. Complex regulations to avoid would include, but are not limited to, 1) those which preclude some uses while allowing other uses that are very similar; 2) those which prohibit very specific gear types that must be checked on the water; 3) those which allow all but a very few types of activities; and 4) those which include technical or complex

prohibitions. The best regulations are those which can be simply stated in one or two sentences without qualifying or clarifying language.

In addition to ensuring that regulations are clear and simple, proposed take regulations should avoid conflict with existing regulations. For example, the recreational take of pelagic finfish by pelagic seine is prohibited through other regulations in California waters. Thus, an MPA should not propose this type of take. Potential regulatory conflict such as this should be considered and avoided while crafting take regulations for MPAs. To reduce the likelihood of creating conflicting regulations, allowed take for recreational and commercial users should be listed separately. Regulations should generally be described as "no take" with a list of any exceptions for what is allowed (e.g., take of all living marine resources is prohibited except the recreational take of market squid and the commercial take of market squid). Proposed MPA regulations should also not create new fishery management regulations that would conflict with existing fishery regulations outside MPAs (examples include different bag limits, size limits, or seasons).

MPA Design Considerations

MPA Cluster Orientation

Adjacent MPAs with different regulations or classifications that share a boundary are referred to as a "cluster." To enhance the likelihood that MPAs will meet the goals of the MLPA, MPA clusters oriented in an alongshore fashion (stacked north/south) are preferred compared to an inshore/offshore (east/west) orientation. The Department recognizes that inshore/offshore orientated clusters may be appropriate for some areas, but encourages the NCRSG to consider the MLPA requirements, scientific value, and Department feasibility guidance in designing MPAs.

Intertidal MPAs

Intertidal MPAs are those that do not extend into the adjacent subtidal waters, and are not recommended. Intertidal MPAs are difficult to define, often have confusing or hard to locate offshore boundaries, and pose unique problems for enforcement. In addition, these areas do not follow the scientific guideline which recommends that MPAs should extend from the intertidal zone to deep waters offshore to protect the diversity of species that live at different depths and to accommodate the ontogenetic movement of individuals to and from nursery or spawning grounds to adult habitats. If intertidal protection is desired, it should be located in areas where offshore habitats are also protected.

Awkward Shapes and Wedges

MPAs can be designed that meet aspects of the Department's guidelines for MPA design, but nonetheless create designs that may decrease public understanding and enforceability of the regulation. For example, wedge shapes and other awkward designs are often due to circumstances such as the shape of the coastline, or the presence of offshore rocks that extend the state water boundary beyond three nautical miles offshore of the mainland coast. The Department recommends that proposed MPA boundaries be adjusted or concepts for areas be redesigned to ensure that MPA boundaries are readily determinable, enforceable, and easily understood by the public.

Multiple zoning

Multiple zoning occurs when an area is split to allow for different uses in different portions of the area. For instance, a SMR could be sited adjacent to a SMP, in which some types of recreational fishing are allowed with specified restrictions, or with a SMCA, where limited recreational and commercial fishing are allowed according to specific regulations. In general, MPAs should avoid abrupt transitions from highly protected areas to areas of relatively little protection[4].

By avoiding abrupt regulatory transitions, multiple zoning can provide a tool for buffering critical areas contained in SMRs. For example, if the objective of an MPA is to protect a specific habitat, an SMR can be buffered by the adjacent placement of an SMP or SMCA that allows only limited take without disturbance to habitat. Areas split into multiple zones can be an effective method for allowing compatible uses where appropriate, but should be used only when appropriate to enhance enforceability and to improve public understanding and acceptance.

However, care must be taken when creating multiple zoning to avoid unnecessarily complex arrangements. Problems are likely to occur when confusing differences in regulations occur over small spatial areas. This can lead to unintentional infractions and can reduce public understanding. If multiple zoning in an area is deemed necessary, the Department recommends adjacent alongshore zones.

Three particular types of multiple zoning that should be avoided are the creation of "doughnut zones", L-shaped MPAs, and "ribbons". Doughnut zones occur when different levels of protection are sited within a protected area, such as an SMCA surrounded by an SMR. This type of zoning can cause public confusion and is difficult to enforce. L-shaped MPA designs are created when MPAs share two or more boundaries and are also difficult to enforce. Ribbon design occurs when a small strip of MPA is sited next to a larger MPA to allow take that is different from the larger adjacent MPA. For example, this design was proposed in past study regions to allow fishing in a small area (or ribbon) near the shore adjacent to an offshore SMR. This type of zoning can cause public confusion, is difficult to enforce, and does not meet SAT guidelines.

Accessibility

Accessibility to an MPA by different user groups should be considered when siting MPA locations. Marine protected areas should be accessible to researchers, enforcement personnel and others with a legitimate interest in resource protection. Various benefits and disadvantages can occur when marine protected areas are sited in locations that are accessible and/or observable, either from the shore or the water. On one hand, they can increase the likelihood that potential illegal activities will be observed and reported, thereby discouraging such activities because they might be observed. Conversely, MPAs sited in areas that are very easily accessed may facilitate illegal activities to occur.

[4] Kelleher, G. (1999). *Guidelines for Marine Protected Areas*. IUCN, Gland, Switzerland and Cambridge, UK. Xxiv +107pp.

MPAs sited in areas that are difficult to access may also reduce the potential of unintentional infractions or make it difficult for intentional violators to reach the area. However, this same difficulty would hinder enforcement in a similar manner and allow intentional illegal activities to potentially go unnoticed. Siting MPAs must be balanced between the ease of enforcement and monitoring, and limiting the potential for infractions to occur.

Siting MPAs in areas close to harbors may raise issues of safety by requiring extractive users to travel farther to areas open to fishing. At the same time, nonconsumptive users may prefer MPAs close to ports and harbors to reduce travel times and facilitate use. If enforceable alternative areas are available farther from ports and harbors, but still accessible to non-consumptive users and enforcement, they should be considered.

Other Special Management Areas

Siting MPAs within, adjacent to, or near locations under special management (upland protected areas; national, state or local parks; water quality protection areas; etc) may provide an added layer of enforcement, observation and public awareness. This is especially true if there are shore-side facilities and personnel based at the site. It is important to develop boundaries collaboratively with agencies that manage these areas.

In addition to the multiple zoning scenarios and special management areas described above, another type of area-based management that should be considered when designing MPA boundaries is the presence of fisheries management areas. Fisheries management areas are seasonal or year-round, area based closures, designed specifically to protect stocks or a particular critical life stage. Such fisheries management areas are often delineated by lines connecting latitude and longitude coordinates or by depth contours, such as the Rockfish Conservation Areas, which exclude certain types of fishing within a specified depth range. Existing fisheries management zones can be used to help reduce impacts to fisheries by incorporation within new MPAs. Similarly, MPA designation can provide more lasting protection to the habitats and species within these areas by the use of more comprehensive ecosystem goals.

II. OTHER GUIDANCE

MLPA Goals, Regional Objectives and Site Specific Rationale

The MLPA acknowledges that the existing MPAs often “lack clearly defined purposes” (Section 2851(a), Fish and Game Code). Decades after the creation of such MPAs, the authors of the MLPA were unable to find documentation indicating the primary purpose of some of the MPAs. This makes it very difficult to determine whether or not these MPAs are meeting their intended purpose. In addition, knowing precisely what an MPA is designed to achieve gives monitoring program planners the flexibility to determine the most appropriate mechanism to monitor and assess desired outcomes in the entire MPA network and ecosystem. For this reason, the authors of the MLPA included a requirement that each MPA have clearly identified objectives.

The MLPA states that: "Each MPA shall have identified goals and objectives. Individual MPAs may serve varied primary purposes while collectively achieving the overall [MLPA] goals and guidelines..." (subsection 2857(c)(1) Fish and Game Code). The MLPA identifies six specific goals that must be met in California's statewide MPA network to increase its "effectiveness at protecting the state's marine life, habitat, and ecosystems." The statewide network is composed of regional MPAs that may have additional and more specific goals and objectives. This has been best achieved by creating specific regional goals that are directly based on the goals of the MLPA and assigning regional objectives that reflect not only the goals of the MLPA but also the qualities and needs of the region. The Master Plan directs stakeholders to be involved in the "analysis and decision making process" when developing goals and objectives for MPAs regionally. The North Coast Regional Stakeholder Group (NCRSG) is being provided with a document of MLPA goals and objectives to use in developing MPA proposals, as a way to frame its thinking when considering where to place an MPA and why.

Site-Specific Rationale:
The most important contribution the RSG can make is to focus on the MPA-specific objectives. These MPA-specific objectives are best characterized within site-specific rationale for each MPA. The site-specific rationale is your statement of purpose (and is synonymous with MPA-specific goal and objectives). If the primary purpose (or 'aim') of each MPA in your network is not clearly and simply stated, in the future it may become impossible to know what was originally found to be important in each MPA, or to measure how effectively a particular MPA might be achieving your intended 'aims'. The site-specific rationale for each MPA will be incorporated with the regional goals and objectives into the master plan and monitoring plan for the north coast regional component of the MPA network, once adopted.

In order to create a clear and concise site-specific rationale, we have developed the following questions for you to consider when crafting each MPA (one or more may apply):

1. What is the purpose of this MPA? Protection of marine life? habitat? ecosystem? another purpose? (Keep in mind that in future years this question will be asked)
2. What is the biological or ecological parameter(s) you are trying to protect or achieve by establishing this MPA?
3. Am I just placing this MPA here to meet SAT size, spacing, or habitat guidelines, or is there also a particular habitat or food web/ecosystem component I am trying to protect?

After the site-specific rationale has been drafted, then the linkage between achieving the MPA purpose can be created between the MPA and the regional network through the regional goals and objectives. RSG members should carefully consider MLPA goals and regional objectives with regard to the individual MPA, the MPA cluster, nearby MPAs, and the network as a whole. Objectives identified for each MPA should be consistent with the

design and the allowed take. For example, allowing the take of pelagic finfish in an MPA with the objective of protecting the forage base would be inconsistent. Also, proposed goals and regional objectives should be consistent with scientific guidelines. The Master Plan outlines the SAT guidelines suggested to meet the goals of the MLPA. Stated goals and objectives for each MPA should be consistent with these guidelines as well as Department MPA design guidelines.

Special Closures

The Special Closure designation has been utilized in a limited number of instances for areas that have area-specific restrictions which confer some protection to marine species but are not based on direct take of living marine resources. The Department recommends that any no-access regulations be proposed as Special Closures. These areas may coincide with, overlay, or be separate from proposed MPAs. While distance from shore is not a preferred boundary determinant, it may be appropriate for special closures in some cases. If a distance-from-shore boundary is used, it must be great enough to be easily enforced, but small enough to be easily visualized, generally 300 or 1000 feet. Special Closures should only be proposed if other state and federal regulations are inadequate to provide protections to marine species. Proposed Special Closures should include information on the rationale behind the proposal, species involved, and specific information on why other existing state and federal protections (including the establishment of an MPA) are not adequate.

The Department recommends that Special Closures be utilized only when addressing water based access concerns and does not recommend Special Closures in areas subject to terrestrial access. Special Closures should only be used to address water based concerns, such as boat disturbance, as the jurisdiction of the MLPA extends only to the mean high-tide line. Placing Special Closures in areas subject to terrestrial access, including many beaches, may cause unintentional infractions to occur for activities such as swimming or surfing, and may not address the intended protections if land-based effects continue. If terrestrial access restrictions are desired, the Department recommends these be taken up with the California Coastal Commission, the decision making body for such coastal access issues. For further information on Special Closure, please refer to the Department memo on Special Closures[5].

III. DFG EVALUATION COMPONENTS

The Department will evaluate MPA proposals in state waters, and will provide advice on feasibility aspects of proposed MPAs and the likelihood of proposals to meet the goals of the MLPA. The evaluation will be split into three distinct components covering: 1) design feasibility (e.g. boundaries, take allowances, and other design considerations as they relate to management, enforcement, and public understanding); 2) goals and objectives (an evaluation of how well the proposed goals, regional objectives and site specific rationales align with the proposed MPA design and regulations); and 3) the likelihood of proposals to meet the goals of the Act (an evaluation of prospects for individual MPAs

[5] CDFG. Memo: Special Closures as they apply to the Marine Life Protection Act (MLPA). November 1, 2007.

and the array of MPAs in the proposals to meet the goals of the MLPA). The text below describes aspects that will be covered in the Department's evaluations. If stakeholders deviate from Department advice, they are encouraged to provide clear rationale for why they considered it necessary.

1) DFG Feasibility Evaluation

Evaluation of Boundaries and take regulations

Proposed boundaries and take regulations for each MPA should follow design guidance described previously in this document. MPAs should have simple, readily determined boundaries, and clear and simple take regulations to ensure that enforceability and public understanding is enhanced. The Department will identify, and may provide options to remedy, design of MPAs that do not meet these guidelines.

Evaluation of Enforceability

The Department will also provide comments from enforcement staff on MPA design including MPA placement, boundaries, access and take regulations. Comments will include specific concerns regarding the enforceability of MPA proposals. Advice may include enforcement concerns regarding proposed allowed take (including inconsistencies with existing fishing regulations and the potential for unintentional infractions), boundary designs, accessibility, and other aspects that affect enforceability of an MPA.

Evaluation of Special Closures (if any)

Since year-round prohibitions on access provide the same or greater protection to living marine resources as no-take areas, the Department recommends that year-round access restrictions be analyzed in the same manner as SMRs. Seasonal access restrictions are not equivalent to SMRs and should be analyzed based on their take restrictions, if different from general regulations. The Department will provide comments regarding the elimination or modification of proposed Special Closures that are located in areas subject to terrestrial access or that provide inadequate protections.

2) Evaluation of Stated Goals and Assigned Regional Objectives

The Department will comment regarding the stated goals and regional objectives for each proposed MPA in each round of draft MPA proposals. Each MPA should clearly state which MLPA goal(s) and regional objectives it is attempting to achieve: as an individual MPA, as part of an MPA cluster, or as part of an MPA array.

The Department will review the stated goals, regional objectives and the site-specific rationale proposed for individual MPAs or groups of MPAs relative to the MPA design, boundary location, and take regulations included in MPA proposals. If the MPA design is inconsistent with the purpose described in the site-level rationale or the intended goals and regional objectives, the Department will recommend modifications to the proposed goals and regional objectives included with the MPA, and/or provide options to remedy the misalignment through modifications or elimination of the proposed MPA. Note that all proposed MPAs must contribute to meeting at least one of the goals of the MLPA.

Site-Specific Rationale

The site-specific rationale should reflect the purpose of the MPA and include a clearly-defined purpose. The site-specific rationale should cover any justifications aimed at meeting the goals of the MLPA and when designing the MPA. The Department will review the rationale provided for each MPA and check to see if the primary 'aim' (i.e., reason, goal, purpose, rationale, or intent) of the MPA is specified. The Department will check to see if this statement describes what the MPA is trying to achieve, what it is protecting, or if the design is focused on meeting SAT guidelines for a particular habitat. The rationale statement should be as simple and straight forward as possible. The site-specific rationale for an MPA should be consistent with stated goals and objectives for that geography, and the Department will work with RSG work teams to properly align them.

MPAs Intended to Meet Other Goals of the MLPA

In previous study regions, the majority of MPAs proposed were designed to address SAT and Master Plan guidance for creating a network of MPAs. These MPAs were designed to meet guidelines such as size, spacing and habitat replication. However, there is often a desire by the RSG to propose MPAs are not designed to meet network goals and may have lower levels of protection. While the Department does not support MPAs below minimum size and with lower levels of protection, the RSG may still wish to propose these types of MPAs to meet other specific goals of the MLPA, such as educational or study opportunities. In such instances, the intended purpose for the site should be achievable based on the design of the MPA. Ecological or network goals and objectives should not be ascribed to an MPA if the proposed MPA does not meet minimum guidelines for achieving those goals as provided by the Science Advisory Team and the Master Plan for MPAs. The Department will recommend modification or elimination of any existing MPAs that do not directly address goals of the MLPA.

3) Likelihood of MPA Proposals to Meet the Goals of the MLPA

The Department will provide advice on the prospects of the MPA proposals to achieve the goals of the MLPA (as stated in the MLPA Initiative Memorandum of Understanding). A specific finding in the MLPA was that the existing array of MPAs lacked clearly defined purposes, was not established according to sound scientific guidelines, and fell short of its potential to protect and conserve living marine life and habitat. The Department will evaluate MPA proposals with regard to these findings and the MLPA goals, and will recommend elimination or modification to MPAs that are unnecessary to fulfill the MLPA mandate or provide inadequate ecosystem protection.

Further Advice

The Department may also call attention to particular proposed MPAs or MPA clusters that display particularly well suited design solutions for a given area. These "elegant solutions" may be identified for their likelihood to facilitate research and monitoring, or to meet other design considerations. These will be identified to provide feedback and guidance to facilitate feasible MPA designs.

IV. MPA DESIGN EXAMPLES

The figures below depict MPAs or MPA clusters for illustrative purposes only. These are not recommendations for MPAs in any location or study region, but are included to illustrate visual examples of MPA design. Figures with red letters in the upper left corner indicate MPAs or MPA clusters that do not meet feasibility design guidelines, while figures with green letters indicate MPAs or MPA clusters that meet feasibility design guidelines.

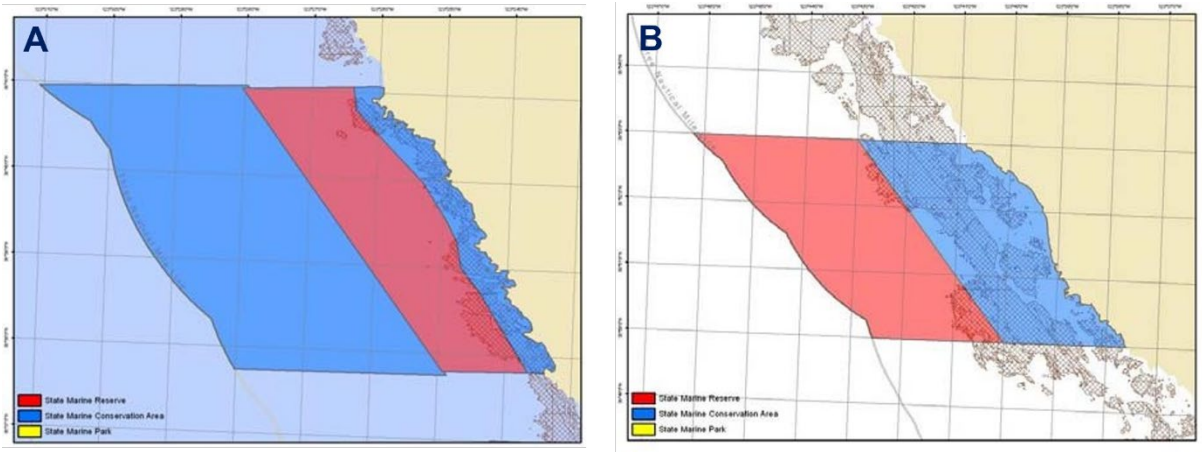

Figure 1. Figure 1A illustrates an MPA cluster that does not meet the Department's feasibility guidelines while the MPA cluster in Figure 1B meets guidelines.

The MPA cluster in Figure 1A does not meet feasibility guidelines because:

- it incorrectly utilizes diagonal lines for boundaries (the diagonal line is not anchored at both ends at whole minutes of latitude and longitude); and
- utilizes the "ribbon" concept of multiple zoning by including an additional onshore MPA that utilizes distance offshore to delineate the boundary.

The MPA cluster in Figure 1B meets feasibility guidelines because:

- it correctly anchors the diagonal boundary at both ends at whole minutes of latitude and longitude;
- sites the diagonal offshore boundary sufficiently offshore; and
- angles the boundary to mirror the angle of the coastline.

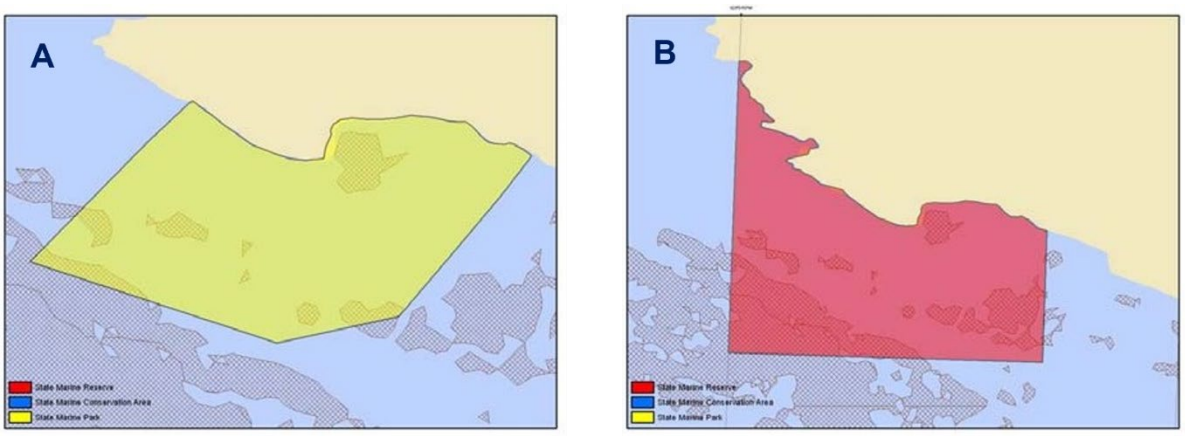

Figure 2. These figures depict an example of an existing MPA redesigned during the MLPA process. Figure 2A depicts an MPA that does not meet feasibility guidelines and is an example of an MPA that existed prior to the MLPA process. Figure 2B illustrates the same MPA re-designed under MLPA.

The MPA in Figure 2A does not meet feasibility guidelines because:

- it utilizes MPA corners that are not at 90 degrees; and
- utilizes boundaries that are not oriented due north/south east/west.

The MPA cluster in Figure 2B meets feasibility guidelines because:

- it utilizes MPA corners that are at 90 degrees; and
- utilizes boundaries that are oriented due north/south east/west.

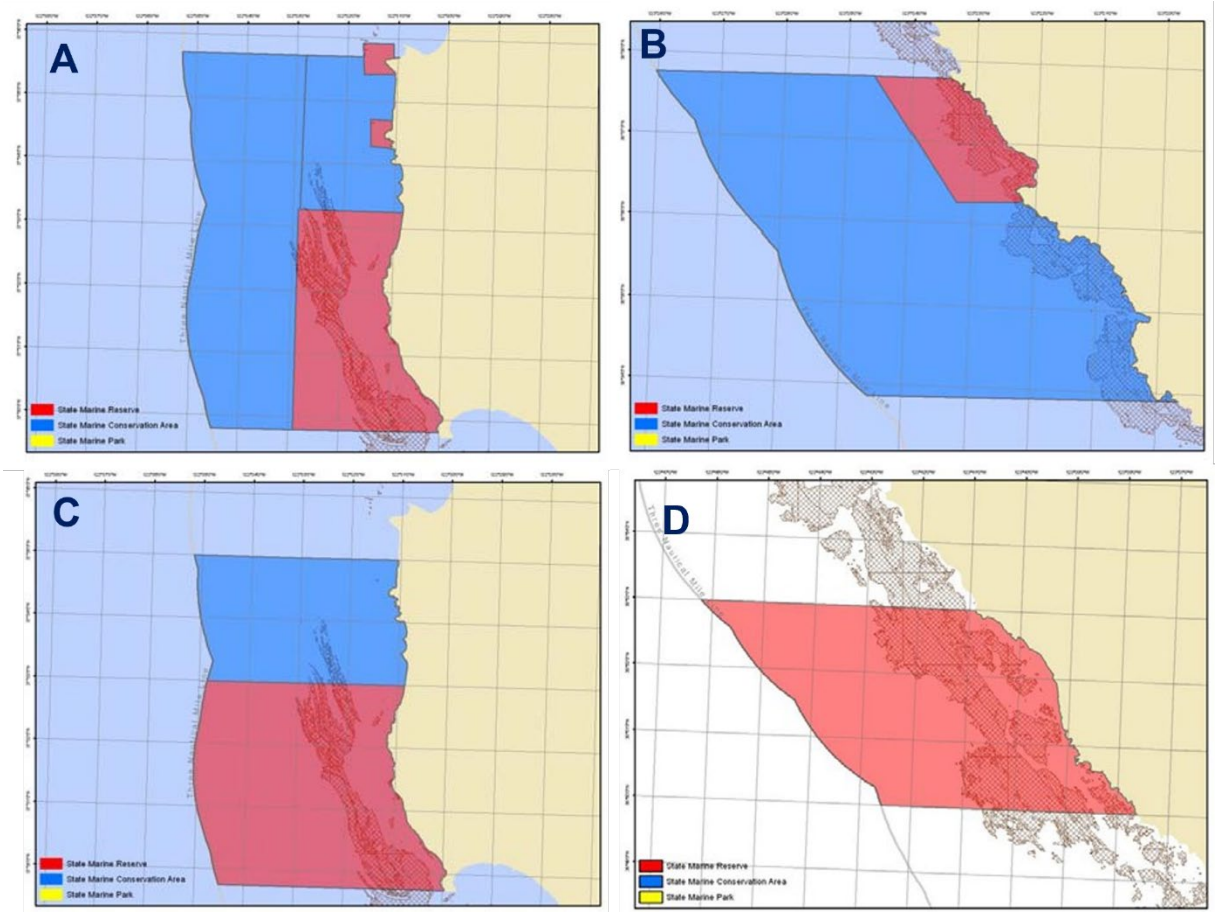

Figure 3. Figures 3A and 3B illustrates MPA clusters that do not meet the Department's feasibility guidelines while the MPAs in Figure 3C and 3D meet guidelines.

The MPA cluster in Figure 3A does not meet feasibility guidelines because:

- It violates the guideline for multiple zoning by utilizing five MPA designations in one area, creating an unnecessarily complex arrangement of MPA designations over a relatively small area; and
- utilizes "doughnut" designs with different levels of protection sited within one another.

The MPA cluster in Figure 3B does not meet feasibility guidelines because:

- It utilizes and L-shaped design that violates the guidelines for multiple zoning; and
- incorrectly utilizes diagonal lines for boundaries.

The MPA cluster in Figure 3C meets feasibility guidelines because:

- it properly utilizes multiple zoning with the use of two MPAs adjacent to one another; and
- incorporates simple straight boundaries that are oriented due east/west; and
- incorporates the preferred design by stacking MPAs in an alongshore fashion.

The MPA cluster in Figure 3D meets feasibility guidelines because:

- It utilizes a simple design; and
- the boundaries are readily determined and are located at whole minutes of latitude.

V. SUMMARY OF FEASIBILITY GUIDELINES

MPA Types

- Take regulations should properly reflect the MPA type proposed
- The State marine recreational management area (SMRMA) designation should be utilized in areas where waterfowl hunting occurs

MPA Names

- MPA names should be simple, reasonable short and reflect area designated
  - MPAs should not be named after individuals or groups

Boundaries

- Use clear and concise boundary descriptions
- MPAs should use straight lines that run due north/south and east/west, connecting readily determined lines of latitude and longitude or easily recognizable permanent landmarks
  - Avoid using undulating boundary lines or contours
  - Avoid depth contours
  - Avoid distance from shore except when the boundary extends to the state water line
- Diagonal lines should be simple and determinable, and only utilized under limited circumstances
  - Diagonal lines should be anchored at both ends in whole minutes of latitude and longitude
  - Diagonal lines should follow the angle of the coastline
  - Diagonal lines should be sited sufficiently offshore
- Offshore MPA corners should be simple, discernable and at 90° angles

Take Regulations

- Take regulations should be simple, clear and enforceable
  - Avoid complex regulations
  - Avoid allowing too many different uses

MPA Design

- MPA design should be simple and clear
  - Avoid creating unnecessarily complex arrangements
  - Avoid designs such as: doughnut zones, ribbons, and L-shaped designs
- MPA clusters should be oriented in an alongshore fashion
- Avoid the use of intertidal MPAs that do not connect with subtidal areas

Special Closures

- Special Closure designations should be used sparingly and only to address water-based access concerns, not land-based access concern
  - Avoid placement in areas with terrestrial access

Rationale for MPAs

Goals and Objectives

- Regional objectives and site-specific rationales should reflect the design of the MPA, including take allowances and boundaries