ENHANCING SEASONAL WETLANDS IN THE COASTAL ZONE

A Regulatory Constraint Analysis
of the
California Coastal Act

Prepared for:
Pacific Coast Joint Venture
Northern California Component
Ron LeValley, California Coordinator
920 Samoa Blvd., Suite 210
Arcata, CA 95521

Prepared by:
Aldaron Laird
Environmental Planner
980 7th Street, Suite K
Arcata, CA 95521

www.riverplanner.com

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1. Introduction

California's "restoration community" believes that the effort and cost required to secure authorization from the California Coastal Commission (Commission) to enhance seasonal coastal wetlands are almost too onerous, and the process too obscure, as to warrant not pursuing grant funding in the Coastal Zone. In California, the Coastal Act prioritizes recovering (when feasible and it's the least environmentally damaging option) tidelands that were diked, drained, and filled over a century ago, rather than improving existing freshwater wetlands that were created by dikes on these lands. An additional Coastal Act constraint to wetland *enhancement* is that improving the quality of an existing wetland is often not valued over *restoration*, where the goal is to re-establish a former wetland. Another Coastal Act regulatory/administrative constraint is the practice of requiring compensatory mitigation for wetland enhancement projects which are proposed solely for the purpose of increasing the quality and/or quantity of wetlands. Such projects are beneficial "self mitigating" and should not require compensatory mitigation. Lastly, adhering to a narrow interpretation of the state and federal no-net-loss of wetland area policies severely limits opportunities to enhance functions and values of an existing wetland. The reduction of wetland habitat area from placing fill, when the sole purpose of the project is to enhance wetlands, should be balanced against improving habitat functions and values.

A primary goal of this paper is to help project proponents of seasonal freshwater wetland enhancement projects understand the Coastal Act's regulatory and Commission's administrative priorities and constraints that may affect the approval of their application for a Coastal Development Permit (CDP). The Northern California Component of the Pacific Coast Joint Venture (PCJV) hopes that, if project proponents are equipped with such knowledge that when future applications for wetland enhancement projects are submitted to the Commission, that staff can recommend their approval. The PCJV also hopes this paper assists staff when evaluating a project for compliance with the Act and in making recommendations for Commission approval of future wetland enhancement projects.

2. Framing the Problem

California's existing coastal wetlands are protected by the state's Coastal Act of 1976 (Act) (Public Resource Code (PRC) § 30000 et seq.). The PCJV, as does the Act, aspires to improve the overall quality of natural and artificial coastal wetlands (PRC § 30001.5), a goal that if achieved would benefit us all. Improving the quality of a wetland can be achieved by increasing its *functions (*what a wetland does), the *processes* (physical, chemical, biological aspects of how it performs*)* or *values* (those characteristics resulting directly or indirectly from a wetland function that are perceived by society as desirable and worthy of protection, or those characteristics that contribute to the habitat quality of the resident biota). The methods accepted in restoration ecology to improve wetland habitat are:

1. restore: re-establish historic functions and values of a former wetland,
2. enhance: increase the size and/or improve functions and values of an existing wetland,
3. create: establish a new self-sustaining wetland in an upland area.

Commission staff face an administrative *albatross* when evaluating wetland restoration or enhancement projects for compliance. The Act interprets any immediate construction action

(e.g., diking, filling, excavating) regardless of the purpose for such actions as development (PRC § 30106) that requires a CDP (PRC § 30600), even if that action is necessary to complete a wetland restoration or enhancement design. To secure a CDP, any action that can cause adverse environmental effects must, if feasible, provide compensatory mitigation (PRC § 30233(a)). The wetland enhancement proponent/permittee is faced with the curious dilemma of having to mitigate for restoring or enhancing a wetland. Unfortunately, many enhancement projects cannot overcome the compensatory mitigation hurdle, or the paradox, and are abandoned. There are hurdles enough to wetland enhancement or restoration, and this should not be one of them. Fortunately, the Act provides us guidance to resolve this paradox and to achieve its basic goals which are to "protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources (PRC § 30001.5 (a)). The Act also can resolve conflicting policies by seeking a balance that is the most protective of significant coastal resources (PRC § 30007.5). When assessing a project whose sole purpose is restoration or enhancement, staff should weigh the net benefit derived from such activities and conclude in the balance that these activities are beneficial and therefore are "self-mitigating" and do not warrant compensatory mitigation.

In California, PCJV partners face significant challenges in complying with the Act when proposing to enhance coastal freshwater wetlands. On diked former tidelands the Act favors restoring freshwater wetlands back to tidelands rather than allowing freshwater wetland enhancement. Freshwater coastal wetlands created on diked former tidelands shall, according to the Act, be restored to tidal influences where feasible (PRC § 30230). If there are no physical, economic, or political impediments (i.e., it is feasible), then these former tidelands must be restored to tidal influences. However, these impediments do exist at many sites or on surrounding lands making restoration infeasible, or risk greater adverse environmental effects than enhancing existing seasonal freshwater wetlands. Consequently, such sites are better suited to enhancing existing freshwater wetlands.

Another significant challenge the PCJV faces to enhancing existing freshwater wetlands is the Commission's interpretation of California's Wetlands Conservation Policy (Executive Order W-59-93), commonly referred to as the no-net-loss of wetlands policy. One goal of this policy is to "*Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California…*" Although "overall" was meant to qualify "no net loss," this policy is generally applied as a strict prohibition against net loss of area for every wetland. Rather "overall" implies some latitude or balancing is permissible in order to achieve a long-term net gain of wetland quality in California, which is the goal of enhancement. Likewise, the federal "no net loss" policy (Executive Order 11990) is also often cited in support of an outright prohibition on any net loss of wetland acreage. But it also allows for balance by stating *"in order to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands…wherever there is a practicable alternative…"* When the sole purpose of a project is enhancement of wetland functions and values there is likely no practicable alternative to achieving the project's purpose. The federal policy goes on to encourage enhancing the natural and beneficial values of wetlands. Ironically, the federal policy states that it does not apply to issuance of federal agency permits or allocations to private parties for activities involving wetlands on non-federal property (see Appendices 6.2), yet it is routinely applied to private parties who propose to enhance wetlands. Lastly, in support of a more balanced approach to apply these orders, neither the Act nor the

federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.) have been amended to incorporate a no-net loss policy.

Enhancement of an existing wetland can often result in some loss of wetland acreage, while restoration of a former wetland or creation of a new wetland generally does not. The Commission's application of the "no-net loss" policy fails to value the benefits of enhancing function or value over a net loss in acreage. It is important to note that function may not be directly related to acreage (Commission, 1995). Thus the opportunity to improve an existing, degraded wetland is often discouraged by the Commission's application of the "no net loss" policy. Therefore, the wisdom of strictly adhering to a narrow interpretation of this policy must be questioned. This is particularly important given that current wetland science's expectations of successfully improving the quality of wetlands by achieving an increase in its functions and values may be greater, or realized sooner, when enhancing an existing wetland as opposed to either attempting to restore historic conditions of a former wetland or creating an entirely new wetland where none existed. In support of enhancement, the Commission's procedural guidance document (pg, 1-8, Commission, 1994) encourages staff to work with what they have, because wetlands are hard to restore and even harder to create, and recommends that compensatory mitigation not be required (pg 9-1, Commission, 1995).

Determining which diked former tidelands are feasible to be restored to tidal functions would identify which freshwater wetlands are best suited to be enhanced. It is not be feasible to restore former tidelands that do not border dikes or have access to tidal waters. In most instances completely removing or breaching a dike is not feasible if adjacent lands, roads, or infrastructure would become inundated with salt water, therefore in those situations it is often necessary to re-locate the dike or build a new dike. Naturally on those lands where it is not feasible to restore tidal functions PRC § 30230 could not apply and enhancing existing freshwater wetlands would be the appropriate option to improving the quality of coastal wetlands.

3. Coastal Act Regulations That Can Constrain Enhancement of Coastal Wetlands

The PCJV's promotion of coastal wetland enhancement projects is primarily affected by the application of the following PRC § 30106, 30519, 30121, 30230, 30231, 30233(a)(c), 30600(a)(e), and 30607.1. Chapter 3 will discuss how the application of these sections may constrain enhancement of coastal wetlands.

3.1. Coastal Development Permit Jurisdiction, PRC § 30106, 30519, and 30600 (a)(e):

For purposes of habitat enhancement or restoration projects, development can be defined simply as any proposed action that will involve physical disturbances or a change in the intensity of use on land or in water within the Coastal Zone (PRC § 30106). Nearly all proposed enhancement or restoration projects in the Coastal Zone, with few exceptions, will need to secure a CDP (PRC § 30600 (a), (e)). A CDP is issued by one of two entities: the Commission who retains jurisdiction on all submerged lands, tidelands, and public trust lands such as diked former

tidelands (PRC § 30519 (b)), and local land use authorities such as a County or City who have jurisdiction pursuant to their certified Local Coastal Program on all other lands within the Coastal Zone (PRC § 30519 (a)). Those non-federal or non-state projects residing on lands under local land use authority will have to apply for a CDP to these authorities, not the Commission. Local authorities, in addition to issuing a CDP, also control land use on all lands except federal or state owned lands. Most local land use authorities have identified land uses that are principally permitted, i.e. do not need a use permit, and uses that must be conditionally approved, usually via a Planning Commission, while all other uses not identified are prohibited. Typically, habitat enhancement and restoration projects are required to secure a Conditional Use Permit (CUP), but before a permit can be issued, the local land use authority must first comply with the California Environmental Quality Act (CEQA) (PRC §21000 et seq., and CEQA Guidelines California Code of Regulation (CCR) §15000 et seq.). Unless CEQA has been complied with by some other permitting agency, the local land use authority becomes the lead agency for compliance. Preparing appropriate environmental documents and processing a use permit application can often take many months to complete. During the process of securing a CUP and CDP from the lead agency, the CEQA document is circulated among other regulatory agencies for review and comment. Often as a consequence of circulating the project for comment the lead agency or project proponent will receive notices that additional permits or consultations are required. For projects located on lands where the Commission has not retained jurisdiction to issue a CDP, the project proponent can expect their regulatory compliance-permitting efforts to increase in complexity, time, and cost.

3.2. Coastal Wetland Definition, PRC § 30121:

In California's coastal zone wetlands are broadly defined as lands which may be covered periodically or permanently with shallow water. The Commission relies on consultation with the California Department of Fish and Game (DFG) to delineate wetlands, but requires that only one of three criteria used by federal agencies (e.g., hydrology, hydric soils, or hydrophytic vegetation) need be present to delineate a wetland (Environmental Services Division (1987), in CCC, 1994). On the coast, diked former tidelands are often inundated during winter/spring months with freshwater, derived either from overland flows or as a result of a high groundwater table forming seasonal wetlands. Livestock grazing can often limit seasonal wetland functions and values by reducing or altering native plant cover, and its associated species diversity, in favor of a simpler assemblage of exotic species with less habitat value. Enhancing grazed seasonal wetlands often requires some fill and/or grading to increase topographic diversity, and increase the duration of inundation resulting in an increase in vegetation types, thereby improving a seasonal wetland's functional capacity and values. But excavation and placing fill during restoration or enhancement in a seasonal wetland is considered a development causing an adverse impact requiring compensatory mitigation.

Because of the Commission's broad definition of what constitutes a wetland on diked former tidelands, it is often difficult if not impossible to locate an area that is not a seasonal wetland to provide compensatory mitigation i.e. replace the wetland area being filled.

> *Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking*

> *and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats.* (California Code of Regulations Title 14, Division 5.5 Chapter 8, Section 13577)

Yet forgoing the enhancement of a grazed seasonal wetland would appear to be contrary to meeting a major goal of the Act which is to enhance the overall quality of coastal zone environment (PRC § 30001.5).

3.3. Marine Resources, PRC § 30230:

Marine resources, such as submerged and tidelands, shall be maintained, enhanced, and, where feasible, restored. Consequently, on diked former tidelands the Act prioritizes their restoration over enhancing existing freshwater wetlands. Whether it is feasible to restore a former tideland can be determined by the presence of physical, economic, or political impediments to restoring tidal waters to these lands. A commonly encountered constraint to restoring tidewater to former tidelands is an inability to prevent salt water from flooding adjacent agricultural or residential lands, inundating utility right-of-ways, public roads, or rail corridors. PRC § 30607.1 is another policy of the Act that supports restoring marine resources such as former tidelands. PRC § 30607.1 requires if feasible, as a condition of approving fill in wetlands, that it be mitigated at a minimum by opening up equivalent areas to tidal action. On former tidelands that are deemed not feasible to restore, then enhancement of seasonal freshwater wetlands would be the means to improving the quality of coastal wetlands.

Restoring former tidelands is not a simple activity nor is simply opening an area to tidal action assured of restoring historic tideland habitats. Many former tidelands were diked and drained over a century ago. During the time that has elapsed, these tidelands have been cut-off from the ebb and flow of the tides and they may have subsided so some areas are several feet lower than the submerged lands in adjacent tidal waters. Also during the intervening time sea level has risen, lately the increase in peak high tide elevations has become particularly noticeable. Simply restoring tidal flows to subsided diked former tidelands, in many situations, may create mudflat habitat rather than salt marsh because of the increased duration of salt water inundation on these lowered surfaces. Therefore, the benefit of restoring tidal influences to former tidelands should be balanced against the loss of functions and values if these lands currently support seasonal freshwater wetlands, i.e. the cumulative loss of seasonal freshwater areas utilized by waterfowl such as cackling geese here on the Northcoast.

3.4. Biological Productivity, PRC § 30231:

PRC § 30231 of the Act requires that biological *productivity* (a function of both growth rate and biomass of an organism) and quality of coastal wetlands be maintained and, where feasible, restored. Where dike and fill development in wetlands is permitted, PRC § 30607.1 re-enforces this section by requiring that the affected areas be mitigated by acquiring other areas of equal or greater biological productivity. Depending on the expected gain in functions or values from enhancing a freshwater wetland versus restoring tidelands, this biological productivity policy

may conflict with the apparent mandate to restore marine resources, where feasible, contained in PRC Sections 30230 and 30607.1. Further, this policy's emphasis on improving biological productivity and quality of coastal wetlands supports this paper's position that increasing function and value i.e. quality should be allowed even if there is a loss of wetland area as a consequence of wetland enhancement activities.

3.5. Diking, Fill, or Dredging, PRC § 30233(a):

This section regulates the alteration of coastal wetlands from diking, fill, or dredging (excavation), and stipulates several criteria under which these developments are permitted:

- shall be limited to certain allowable uses such as for "restoration" purposes, and
- where there is no feasible less environmentally damaging alternative, and
- where feasible mitigation measures have been provided to minimize adverse environmental effects.

Allowable Uses

The Act allows diking, filling, or dredging/excavation of a wetland when restoration of that wetland is the main purpose of the project or similar resource dependent activities such as enhancement. The Act does specifically address enhancement as one of the state's basic goals in the coastal zone (PRC § 30001.5 (a)), and the Commission has found in previous project approvals that a wetland enhancement project, where the primary purpose of a project is to improve wetland habitat values, shall be considered for purposes of complying with this section "restoration", which is an allowable use (Commission -Fay Slough, 2001). The Commission, in previous projects, found that a project involving fill associated with dikes, which by itself is not an allowable use, was allowable because the project was designed to enhance the diversity of freshwater wetland types and enhance habitat values for water associated wildlife (Commission - Fay Slough, 2001). Similarly, restoring former tidelands around the Bay that have been diked may require the re-location of a dike or construction of a new dike, often on a seasonal freshwater wetland, to contain tide waters from inundating adjacent land. While placing fill in a wetland to re-locate or construct a dike is not an allowable use by itself, if restoration of an equivalent area of tidelands is integrated into the project, it may be allowed. However, not all property located on diked former tidelands borders a tidal channel or a dike, and without access to tidewaters it is not feasible to restore marine resources; in such instances enhancement of existing seasonal freshwater wetlands maybe the only option available to increase the quality of coastal wetlands.

A key assumption in the Commission's approval of a wetland restoration or enhancement project is that it will be successful and provide a net gain in wetland acreage, functions, and values and become a self-sustaining environment. The Commission's evaluation of proposed restoration or enhancement projects can require the preparation of a comprehensive environmental assessment describing baseline habitat functions and their desirable values. Restoration versus enhancement projects may have an additional burden of providing an environmental assessment of a reference area to be used to ascertain the success of the restoration activities. Restoration and enhancement projects will also be required to provide a monitoring plan. A monitoring plan should describe methods to measure improvements in habitat value and diversity at the site, including species and abundance, over the course of five years following project completion. A

monitoring plan, or more appropriately an adaptive management plan should include provisions for remediation to ensure that the goals and objectives of the wetland enhancement project are met.

Least Environmentally Damaging Feasible Alternative

An alternative analysis is required of all developments, even for restoration and enhancement projects. The proposed project is compared to other feasible alternatives that the applicant provides to determine which is the least environmentally damaging (including the proposed project). This alternative analysis assesses and compares only two impacts: loss of wetland acreage and loss of *functional capacity*, which means the level and number of species, level of biological productivity, and relative size and number of habitats. The alternative with least overall impact is the least environmentally damaging alternative. Alternatives to the proposed project could be: (1) "no project" or relocate project to have no impact to wetlands, and (2) modified project design (size, fill footprint, grading, hydrologic modifications, planting, etc.).

As the alternative analysis is applied, there are several difficult hurdles for any enhancement project to overcome. Foremost is that any alternative, including the project that would result in a net loss of wetland acreage, can be denied, because a no project alternative would maintain existing wetland acreage, i.e. no net loss. Therefore, if any alternative may cause a net loss of wetland acreage, then proposing compensatory mitigation will be necessary to achieve no-net loss of wetland acreage. Increasing wetland acreage can only occur on land that is not already a wetland. In the case of diked former tidelands around the Bay almost all of those lands qualify as a seasonal wetland in the winter. To compensate for filling these seasonal wetlands, it may be necessary to go off-sight and increase the size of an existing wetland or to create a wetland. Given the unique nature of these seasonal wetlands, their proximity to tidal waters compensatory mitigation may be achieved by opening up an equivalent area to tidal waters as is being filled. Lastly, using the no-net-loss policy in this alternative analysis would conflict with the Commission's procedural guidance of not requiring compensatory mitigation, *habitat compensation*, for projects where the sole purpose of the project is restoration-enhancement of a wetland, which is considered a beneficial activity (pgs 8-2, 9-1, Commission, 1995).

If the proposed project or an alternative passes this first threshold, then the second criteria to evaluate is whether the functional capacity of an existing wetland is maintained or increased. An ecological assessment can assist in evaluating whether the proposed project will maintain or increase functional capacity by describing and quantifying baseline attributes of a specific function, which necessitates an understanding of the relationship between the attributes and the function.

When evaluating the functional capacity of alternatives such as enhancing a seasonal freshwater wetland, it is worth noting that just extending the seasonality or duration of inundation does not guarantee that existing functions or values will be increased. While the ephemeral nature of seasonal wetland may reduce the time period of a function, the performance of that function and its overall value are not necessarily diminished relative to perennial wetlands or wetlands that are wet for longer duration. In fact, many of the same functions and values are present in both types of wetlands. Additionally, seasonally wet wetlands can, during certain times of year, provide greater value for certain functions (e.g. ground water recharge, floodwater storage, habitat for

endangered species, or feeding and resting spots for migratory birds), relative to nearby perennially wet wetlands (Commission, 1994). The alternative analysis as administered seems to place greater weight on achieving no-net-loss of area rather than balancing gains in functional capacity to determine the most beneficial project. The no-project alternative in a degraded wetland should not be an acceptable alternative if enhancement could increase desirable wetland values.

Feasible Mitigation Measures

The Act, while allowing filling, diking, and excavation of wetlands during restoration activities, requires feasible mitigation measures to minimize adverse environmental effects (PRC § 30230(a)). Generally, environmental regulations do not treat all mitigation measures equally; there is a hierarchy of mitigation, which in descending order of preference are: avoid, minimize, rectify, reduce, and compensate. The Commission's procedural guidance documents emphasize avoidance, where feasible, as opposed to minimization (Commission 1994, and 1995). However, the Commission's administration of the Act has imposed an additional requirement that can affect enhancement projects, which is that of achieving no net loss of wetland acreage. The effect of applying this no net loss standard is requiring habitat compensation even for projects where the main purpose of the project is restoration or enhancement of wetlands, contrary to the Commission's own guidance document (pg. 9-1 Commission 1995).

In coastal wetlands, adverse impacts, to existing wetlands such as seasonal freshwater pastures i.e. "farmed wetlands", often associated with filling, diking, or excavation during restoration and enhancement projects include:

- covering (fill) or altering (excavation/grading) wetland topography,
- removing or damaging wetland vegetation,
- discharging stormwater runoff causing an increase in turbidity, or sediment delivery to coastal waters,
- changing hydrological conditions that affect the duration or frequency of inundation resulting in the conversion of a seasonal wetland (or riparian) to another type such as open water or salt marsh with different functions or values.

Even projects whose main purpose is the beneficial improvement of a wetland via restoration or enhancement, will of necessity involve one or more changes to existing conditions: topography, hydrology, or vegetation. Any change to existing wetland conditions, certainly in the short-term, may adversely affect wetland functions or values.

The Commission has found that allowing fill of a freshwater wetland from dike rehabilitation and construction as part of a restoration project would require compensatory mitigation to prevent no-net-loss of wetland acreage pursuant to their interpretation of Executive Order W-59-93 (Commission -Fay Slough, 2001). Compensatory mitigation is either achieved by restoration, enhancement, or creation, and is the most common mitigation proposed by the Commission to replace lost or adversely impacted habitat by development projects (Commission, 1994). There are two types of compensatory mitigation: *in-kind*, involves the same type of habitat as that impacted by the development activity, or *out-of-kind*, which involves different types of habitat. Common to all mitigation plans is the need for an environmental assessment of the existing wetland habitat and functions that will be adversely impacted by the proposed project. Assessing

function is achieved by describing associated *biological* (which species and their distribution and abundance), *chemical* (such as water quality conditions-salinity, temperature, and dissolved oxygen) and *physical* (habitat structure) attributes. Assessing values (importance society places on that characteristic derived from each function) helps to prioritize the importance of the functions.

PRC § 30607.1 utilizes a compensatory mitigation ratio of 1:1 as a minimum for dike, fill, or excavation actions permitted in wetlands in conformity with PRC § 30233, when the proposed mitigation is either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action. The Commission may also require compensatory mitigation ratios greater than 1:1, normally the ratio required is determined on a project by project basis to establish the size of the mitigation area. The ratio required is often linked to whether in-kind or out-of-kind mitigation is being proposed. The determination of what is an appropriate ratio will depend on many factors such as:

- habitat function and values of the area to be affected by filling, diking, or excavation,
- level of confidence in success of proposed mitigation plan,
- time lag between when impacts to existing habitat are sustained and when habitat values have been fully realized at mitigation sites.

Higher mitigation ratios may be required as a balance against the un-certainty of creating wetland habitat, and to offset adverse wetland impacts that result from a lengthy time lag between project impact and implementation of mitigation (Commission, 1995). Any mitigation plan must have measurable goals, objectives, and appropriate financial commitment for its successful implementation. A mitigation plan must also have a monitoring program to measure performance, determine compliance (as-built assessment) and to evaluate whether desired habitat functions and values have been achieved. A mitigation-monitoring plan should include an adaptive management clause in case monitoring documents that mitigation goals have not been achieved and remedial measures may be required with additional monitoring to reach and verify that desired goals are achieved.

3.6. Functional Capacity, PRC § 30233(c):

This section of the Act states that diking, fill, or dredging (excavation) in existing wetlands shall maintain or enhance the functional capacity of the wetland. As mentioned earlier, function refers to what a wetland does and the processes it performs. Evaluating a wetland's function is best achieved by describing and quantifying the physical, chemical, and biological attributes that are at work in a particular wetland (Commission, 1995). The section would appear to preclude changing what an existing wetland does and the processes it performs, as may be the case when enhancing a seasonal wetland or converting one to a brackish water environment. Appling this section may also conflict with two other sections of the Act pertaining to restoring marine resources (PRC § 30230) or restoring tidal influences when mitigating placing fill, diking, or excavating wetlands (PRC § 30607.1) when an existing freshwater wetland's functional capacity is altered as it is converted to tidelands. This section does implement that portion of the state's no-net-loss of wetland policy concerned with protecting wetland quality and value (Executive Order W-59-93).

3.7. Minimum Mitigation Measures, PRC § 30607.1

When a project is involved with filling, diking, or excavating a wetland, pursuant to PRC § 30233, its compensatory mitigation measures shall include at a minimum, either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action. This policy's emphasis on an equivalent area would reinforce a minimum compensatory mitigation ratio of 1:1 even if the loss of wetland area is a consequence of wetland enhancement activities that may increase biological productivity. This section in conjunction with PRC § 30230 also constrains enhancement of coastal wetlands by prioritizing restoration of tidal influences and marine resources. One benefit derived from this section is that allows temporary or short-term filling or diking of a wetland with requiring mitigation if restoration is assured in the shortest feasible time.

4. Recommendations

Sometimes it is necessary to strive for a balance between conflicting policies in order to achieve the laudable goal of improving the quality of coastal wetlands. The following recommendations are offered for consideration to assist in the enhancement and restoration of coastal wetlands.

1. The effort and cost to secure authorization from the Commission for enhancement projects would be reduced if project proponents incorporate a regulatory compliance review in their project development efforts. Knowledge of regulatory constraints presented in this paper that may affect a proposed project should enable the proponent to re-design their project to avoid conflicts or to develop suitable mitigation measures. For instance, describing the functions and values as well as the functional capacity of a seasonal wetland to be impacted, versus the wetland habitats being proposed, will greatly assist in development of the project and later when the Commission evaluates the project. Presenting a project to the Commission that has successfully completed a regulatory compliance review will greatly improve and hasten the ability of staff to recommend that the project be approved.

2. There is extensive acreage of diked former tidelands that now support seasonal freshwater wetlands which are used for grazing. The often insurmountable problem encountered when enhancing seasonal wetlands is what to do with the material generated from grading or excavation. One means to overcome the conundrum of how to compensate for placing fill in a wetland while implementing an enhancement project is to focus on projects in areas where there is an opportunity to access tidal waters. The Act has prioritized: restoring former tidelands, a marine resource, wherever feasible (PRC § 30230), and when mitigating impacts to coastal wetlands by opening an equal area to tidewater inundation (PRC § 30607.1). Combining the restoration of former tidelands with the enhancement of seasonal freshwater wetlands can increase the number of habitats, their ecological functions, and societal values. Many of the century old dikes are now severely eroded. Failure of these dikes could threaten existing freshwater wetlands, agricultural uses, buildings, infrastructure, livestock and people, from sudden breaches and perhaps catastrophic flooding. In some situations, the most feasible way to restore diked former tidelands and to enhance freshwater wetlands is to relocate an existing dike. By moving a dike away from the shore of slough/tidelands, you can

expand the area subject to the ebb and flow of the tides. Building a dike to present-day standards, in many cases, will require increasing the footprint of dikes built over a century ago. Increasing the dike footprint on former tidelands generally will occur on seasonal freshwater wetlands and will reduce net wetland acreage. However, the loss of freshwater acreage to an increased dike footprint creates an opportunity to restore former tidelands. This strategy for restoring tidelands also creates an opportunity to enhance adjoining seasonal freshwater wetlands, because when building a dike there is new upland area, and the relocated dike can receive as fill any excavated material generated by enhancing the topographic and aquatic diversity of the wetland behind the dike. These types of projects can successfully integrate three interdependent needs: dike rehabilitation, salt marsh restoration, and freshwater wetland enhancement.

3. There are several possible administrative remedies worth considering assisting in streamlining review and permitting for publicly funded (CDFG, National Marine Fisheries Service, United States Fish and Wildlife Service, or Natural Resource Conservation Service) projects where the main purpose of the project is restoration or enhancement of coastal wetlands. These projects that are publicly funded by these resource agencies have already been developed and reviewed to assure protection of wetland resources. The Commission could utilize the Act's conflict resolution policy contained in PRC § 30007.5 to weigh the net benefit derived from a project whose sole purpose is enhancement or restoration and conclude on balance that these activities are beneficial and therefore "self-mitigating" and do not warrant compensatory mitigation measures. If the Commission did not treat these type of projects as a *development* pursuant to PRC § 30106 they could be exempted from needing a CDP, and again if these projects were considered self-mitigating, they could also be exempted from needing a CDP pursuant to PRC § 30600(e). When assessing alternatives (PRC § 30233(a) to enhancement projects, determining the least environmentally damaging alternative should also achieve the proposed and preferred project's goals and objectives.

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Public Resource Code. California Coastal Act of 1976, Division 20, Sections 30000 et seq. http://www.coastal.ca.gov/ccatc.html#linkedcoastalact

U.S. Environmental Protection Agency. Executive Order No. 11990 (1977), 42 F.R. 26961. http://www.epa.gov/owow/wetlands/regs/eo11990.html

6. Appendix

6.1. California Coastal Act of 1976, Public Resources Code 30000 et seq.

30001.5. The Legislature further finds and declares that the basic goals of the state for the coastal zone are to:
(a) Protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources.

30007.5. The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner which on balance is the most protective of significant coastal resources.

30106. "Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation

buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:
(7) Restoration purposes.

30233. (c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary.

30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

30519. (a) Except for appeals to the commission, as provided in Section 30603, after a local coastal program, or any portion thereof, has been certified and all implementing actions within the area affected have become effective, the development review authority provided for in Chapter 7 (commencing with Section 30600) shall no longer be exercised by the commission over any new development proposed within the area to which the certified local coastal program, or any portion thereof, applies and shall at that time be delegated to the local government that is implementing the local coastal program or any portion thereof.

(b) Subdivision (a) shall not apply to any development proposed or undertaken on any tidelands, submerged lands, or on public trust lands, whether filled or unfilled, lying within the coastal zone, nor shall it apply to any development proposed or undertaken within ports covered by Chapter 8 (commencing with Section 30700) or within any state university or college within the coastal zone; however, this section shall apply to any development proposed or undertaken by a port or harbor district or authority on lands or waters granted by the Legislature to a local government whose certified local coastal program includes the specific development plans for such district or authority.

30600. (a) Except as provided in subdivision (e), and in addition to obtaining any other permit required by law from any local government or from any state, regional, or local agency, any person, as defined in Section 21066, wishing to perform or undertake any development in the coastal zone, other than a facility subject to Section 25500, shall obtain a coastal development permit.

30600. (e) This section does not apply to any of the following projects, except that notification by the agency or public utility performing any of the following projects shall be made to the Commission within 14 days from the date of the commencement of the project:

30607.1. Where any dike and fill development is permitted in wetlands in conformity with Section 30233 or other applicable policies set forth in this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or the replacement site shall be purchased before the dike or fill development may proceed. The mitigation measures shall not be required for temporary or short-term fill or diking if a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.

6.2 No Net Loss" Wetland Policies

California

On August 23, 1993, Governor Pete Wilson signed Executive Order W-59-93, establishing a State Wetland Conservation Policy (SWCP) and providing comprehensive direction for the coordination of state-wide activities for the preservation and protection of wetland habitats. The SWCP was the first state-wide conservation policy of its type in the United States. The Resources Agency and the California Environmental Protection Agency (Cal EPA) are designated as co-lead to implement the goals of the SWCP. The SWCP has three central goals:

- Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship and respect for private property;
- Reduce procedural complexity in the administration of State and Federal wetlands conservation programs; and
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.

Federal Government

EXECUTIVE ORDER No. 11990 (1977): May 24, l977, 42 F.R. 26961

By virtue of the authority vested in me (*Jimmy Carter*) by the Constitution and statutes of the United States of America, and as President of the United States of America, in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), in order to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or Indirect support of new construction in wetlands wherever there is a practicable alternative, it is hereby ordered as follows:

> Section 1. (a} Each agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.
>
> (b) This Order does not apply to the issuance by Federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal property.