



West Mojave Conservation Bank

Principles for Nature-Based Solutions



Prepared by the California Ecological Restoration Business Association
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Preface

The California Ecological Restoration Business Association (CalERBA) represents California businesses and jobs specializing in the delivery of ecological outcomes. CalERBA members provide critical conservation and ecological services spanning from wetland and habitat restoration to water quality and floodplain resiliency. Members' investment in restoring California's natural systems and our long-term protection of those ecosystems addresses our state's urgent need to answer biodiversity and climate change challenges while bolstering California communities' natural resilience. To support expanding investment in these high-quality nature-based solutions, CalERBA is resolutely committed to the promotion of best practices and science for ecological restoration, including certain practices unique to successful ecological restoration projects developed under a compensatory mitigation program.

In this paper CalERBA outlines a set of fundamental Principles for Nature-Based Solutions (the Principles), based on reflection of CalERBA's collective decades of practitioner experience and members' diverse environmental portfolios. We believe these Principles should apply across all forms and programs facilitating ecological restoration. CalERBA members typically deliver restoration through one of two pathways: i) either under a resource offset program where an offset is legally required to negate impacts to a protected resource, such as a compensatory mitigation framework, or ii) through a procurement model where a public interest directly contracts for a defined environmental result. Regardless of the pathway, in both scenarios the public outcome sought is protected and restoration has met performance standards to reverse present or prior land and ecosystem degradation. While some of the terms and concepts referenced below are typically unique to mitigation, several are also instructive as best practices and should be incorporated into any ecological restoration project model.

These Principles and all of CalERBA's policy positions are grounded in the association's purpose to advance state policies that support and incentivize private investment in ecological restoration. We believe that private investment in nature-based solutions accelerates and complements tax-payer and grant funded initiatives, and is essential to our state's ability to answer escalating environmental, economic, and social public challenges. Private capital mobilizes at scale when market signals are clear and government policy is applied consistently and equivalently. Sustainable environmental markets rely on predictable government regulations and enforcement. Otherwise, market participants will logically pursue the lowest cost option, undercutting the intent, credibility and success of our environmental policies. CalERBA devotes a section of this paper to the topic of "Incentivizing Investments" to address the reality of these regulatory and market dynamics.

CalERBA's dedication to high and consistent standards for all forms of ecological restoration and services is reflected in these Principles. Policymakers and restoration sponsors' adherence to these Principles will advance environmental markets, ensure science-based, high quality, and cost-effective offsets are available for permittees, and incentivize more investment towards resilient natural infrastructure systems.



Overview

Both in California and nationally, CalERBA members have been at the center of the ecological restoration sector's evolution into what it is today – a mature, highly skilled field that supports billions in annual economic output and thousands of jobs. Companies in the business of ecological restoration comprise a growing sector of sophisticated firms backed by substantial capital, from green investors to pension funds. This growth was catalyzed by the adoption of federal and state policies that clearly outline the requirements for environmental outcomes. Nationally, the 2008 Compensatory Mitigation Rule (the "Rule") laid out the framework for delivery of permissible wetland and stream mitigation to offset the unavoidable impacts of development in accordance with Section 404 of the Clean Water Act (CWA). In California, pioneering state policies on advance mitigation and species conservation banking serve as a model for other states and federal policy to follow, and support the case for increased interest in joint wetland and species conservation banks, or multi-benefit projects.

The environment, restoration sponsors and permittees alike benefit from the durability, consistency and transparency provided by stable regulation. However, these benefits are lost without effective implementation. The past decade has shown that ecological restoration suffers when regulations are not enforced equivalently across regions and projects, regulator partners and agencies are underfunded, or permitting schemes inadvertently impose "green tape" that hinders expeditious ecological restoration. During the same time, we've also seen that investment in ecological restoration thrives when a regulatory program is collaboratively developed, fully funded and staffed, and we adopt a partnership approach with regulators to efficiently achieve our shared goals for restoration outcomes.

From this experienced perspective, CalERBA presents these Principles as enduring guidance and foundational to successful delivery of ecological restoration. Again, we recommend that these Principles apply across project types and government programs, including compensatory mitigation for wetlands or streams, water quality, protected species habitat, coastal resiliency, flood mitigation, and turn-key conservation and restoration projects. We identify that Three Foundational Concepts are essential in any of these contexts:

- i) Durability: Perpetual Land Protection & Stewardship,
- ii) Science-Based Design & Performance Criteria, and
- iii) Risk Reduction Mechanisms.

In the first part of this report, we address these Three Foundational Concepts and underlying principles within each that are critical to successful ecological restoration and high-quality, accountable conservation outcomes. In the second part, "Incentivizing Investment in Ecological Restoration," we outline the principles that are necessary for market growth and sustainability. When relevant, we highlight elements that are specific to compensatory mitigation, but also instructive on the development of emerging environmental programs and policies.



Part I: Principles for All Ecological Restoration Projects

I. Durability: Perpetual Land Protection & Stewardship

Ecological restoration projects must be durable and designed with permanency in mind. In the mitigation context, offsets must endure for the life of a project's impacts to achieve conservation goals, such as the CWA's "no net loss" goal. In most instances, impacts result in a permanent loss of ecological function and services and thus necessitate an offset of permanent ecological uplift. Even outside of an offset program, public mandates for environmental outcomes often seek to achieve ecological benefits in perpetuity.

Practitioners' experience finds that a single project element does not deliver "durability," but rather multiple factors working together are necessary. At a minimum, the restoration site must be legally protected through a site protection instrument, such as a conservation easement or deed covenant if the land is under private ownership, or, if the land is under public ownership, a functionally equivalent protection mechanism as permissible by policy or statute. In addition to land use restrictions, there must be adequate funding for perpetual stewardship and adaptive management to ensure durability. Initial project planning and design set a restoration project on a path for success, but monitoring, regular maintenance, and use of adaptive measures, as included in the site's management plan, are necessary to reach long-term sustainable success. This perpetual management plan is only effective if financial resources are in place through an endowment or trust to implement the plan for the life of the project, or in many cases for perpetuity.

The natural world is dynamic and healthy ecosystems have evolved to respond to environmental changes and extreme events with resiliency. Regulators, practitioners, and land stewards benefit from a shared mindset of flexibility to address environmental challenges at restoration sites through the best available sciences. This is particularly true as our country faces a rise in natural disasters and the impacts of climate change. While the risk profile has changed in some regions, ecological restoration sites should not be expected to perform superiorly to naturally occurring features. Current scientific understandings of durability and site resiliency should afford restoration projects realistic expectations to respond to and adjust course after a disrupting natural event.

Note that implementation of two durability elements – the site protection instrument and financial endowment – may be more complex for restoration sited on public lands than restoration under private ownership. In many instances, public lands are not eligible for the same level of land protection as private lands, and financing for long-term management may be subject to the political process of appropriations. For these reasons, policymakers should carefully review restoration proposed on public lands and evaluate if the project meets the same durability standards required for restoration on private lands. Whether on public or private lands, site and financial protection instruments should be transparent, readily available and verifiable to ensure the restoration is permanent.



II. Science-Based Design and Success Criteria

A scientific understanding of a site's potential ecological functional value is foundational to any restoration project. Science informs every major decision, from initial site selection to the hydrology and plantings to ecological performance standards. While relevant at each stage, science is particularly important in project siting and design planning for success and tracking site performance.

Restoring a tract of land to reintegrate and uplift watershed or habitat functions requires looking beyond the specific tract of land to the broader landscape. A landscape approach uses data to analyze how a specific restoration project could most contribute to the sustainability and resource health of the overall watershed or habitat. This approach leads to better restoration positioning at a scale that accounts for changing watershed or habitat conditions and builds resiliency into an ecosystem. The State-of-the-Art practices for wetland and habitat restoration have advanced dramatically over the past decade, and are now well demonstrated in our private sector industry through engineering design and biological expertise. Our industry's understanding and ability to build in resiliency and connectivity under a watershed and landscape approach are second to none and leading projects for successful restoration.

Scientific assessments, data, and metrics should underpin all restoration project's ecological performance standards. While some flexibility may be built into performance standards, general terms like "trending towards success" are subjective and not clearly defined for purposes of evaluating performance. Science-based metrics are objectively measurable and create a transparent record of ecological performance. A site's baseline data should be compared against progressive monitoring reports to demonstrate the delta of change and progression toward ecological uplift targets. This record creates accountability, builds trust in the project's success, and ensures the project contributes additional ecological benefits to the landscape beyond those that would have been otherwise generated in the absence of restoration.

In the offsetting context, mitigation bank and ILF projects constructed in advance of impacts can most maximize the benefits of science because they have the time to use baseline data in site selection and to conduct robust scientific analyses that inform the site's restoration plan. Compensatory mitigation projects in the monitoring and performance stages can best use science to evaluate and correct course on ecological performance in advance of permitted impacts.



San Luis Rey Mitigation Bank



III. Risk Reduction Mechanisms

Ecological restoration requires substantial upfront resource and capital investment in the project planning, construction, and establishment stages. At each project stage, there are varying degrees of uncertainties and unknowns that influence whether a project will meet milestones and adapt to new challenges. Fortunately, multiple proven mechanisms are available to reduce these risks and keep projects on track with restoration targets through the transition to perpetual stewardship. When used in varying combinations, these mechanisms—including adaptive management, implementation of financial assurances, performance criteria, and, for mitigation, credit release schedules—provide risk reduction both to the regulator and the ecological restoration practitioner.

Periodic monitoring reports typically offer the first indication that a project may need adaptive management measures to meet performance standards. Even at the most well-designed sites, some level of adaptive management is often necessary due to the inherently complex and evolving nature of biological and physical systems, particularly in the context of climate change. Adaptive management mobilizes the project sponsor or land manager to modify restoration activities in accordance with the approved restoration plan. The flexible approach of adaptive management allows a project to stay on course without changing the performance standard or causing regulatory delays through a compliance action.

Implementation of short-term financial assurances guarantee the construction and establishment of a restoration project, up to the project's transition to long-term management. These financial assurances safeguard against the risks of site performance failure that cannot be addressed by adaptive management or a project sponsor being unable to complete the project. Typical financial mechanisms include letters of credit, escrow accounts, surety bonds and casualty insurance. Key considerations on the best financial assurance for a project are the adequacy of funds to address foreseeable failures and the ease of accessing funds in a timely manner, particularly for projects designed to reduce or eliminate temporal loss.

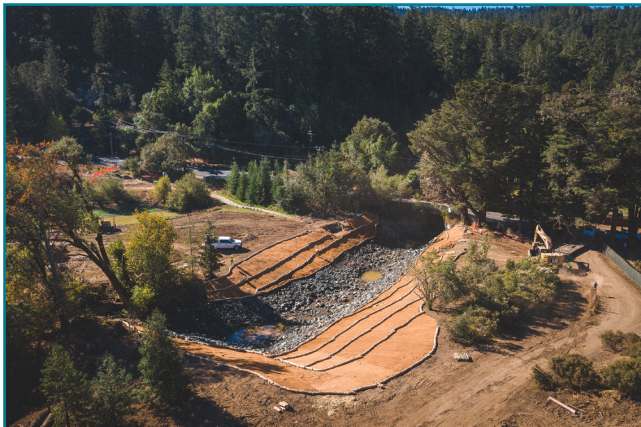
During project planning, the restoration sponsor and regulator should identify the triggering events for use of financial assurances, exactly how the assurance may be called upon if needed, timeline for doing so, and responsible parties to act on the assurances and correct the performance issue. As the project proceeds through the construction and establishment stages, performance risk reduces and the potential costs to correct a project failure are lower. Implementation financial assurances should be structured as commensurate with a project's perceived risk, and thus should step down as the project moves closer to long-term management.

Specific to mitigation, credit release schedules are used to reduce risk and establish trust between the mitigation bank sponsor and regulators. Credit releases can be tied to specific performance actions such as approval of the mitigation plan or mitigation banking instrument, establishment of the long-term land protection controls, completion of construction, and demonstrated achievement of ecological performance milestones. This tool incentivizes ecological restoration practitioners to complete actions towards the defined restoration outcome in exchange for the release of credits that are sold to recoup the sponsor's investment. If a bank does not meet a certain performance milestone, the regulator can withhold the credit release and prompt the sponsor to pursue adaptive management or other corrective action.



Again in an offsetting context, mitigation achieving performance standards in advance of impacts presents the lowest risk to a regulatory program when compared to offsets developed concurrent to or after an impact occurs. Mitigation in advance of impacts allows for robust scientific due diligence that maximizes the likelihood of success and reduces or eliminates temporal loss of ecological services. Advance mitigation also affords time for a project sponsor and regulator to collaboratively address changing ecological conditions, whether through adaptive management or financial assurances, and still meet performance milestones.

Environmental programs and policies should incentivize mitigation in advance of impacts to bolster continued industry investment in advance mitigation models and promote the least temporal loss of ecological services. All forms of restoration delivery and the environment benefit from oversight and monitoring to ensure implementation is timely and in advance of connected impacts as often as possible. When restoration projects do not timely apply funds or otherwise fail to take action towards their targeted ecological outcomes, then risk increases for all parties and jeopardizes trust in our environmental programs. Regulators and restoration sponsors should collaborate to reduce these risks by utilizing market-based strategies and innovative partnerships for timely implementation and work towards our ecological restoration goals. Collectively, risk reduction measures and policies are proven to limit environmental programs' liabilities for permittees and government, and reduce reliance on finite taxpayer dollars.



Restoration project construction



Part II: Incentivizing Investment in Ecological Restoration

The demand for ecological restoration is pressing across the board: escalating natural disasters call for more resilient natural defenses, infrastructure seeks efficient and accountable environmental offsets, and public need grows for clean water, clean air, and protected natural spaces. But these environmental challenges cannot be met by public funds and actions alone. Meaningful progress requires engagement of all potential resources, including private capital, towards ecological restoration and resiliency results. Private capital flows to environmental markets when market signals are clear, standards are predictable and consistent, and government implementation is equivalent and fair across market players.

Beyond the policies discussed below, a collaborative partnership between restoration sponsors and the government authorities overseeing restoration implementation is a foundational element for sustained investment. Despite the best policies and programs in place, if agencies are not funded and equipped to implement those programs, investment will shrink due to the lack of certainty and unpredictability in review timelines, communication and requirements. CalERBA believes in strong relationships and open communication with state and federal agencies to invest more capital in on the ground, performing ecological restoration. We are committed to communication and improvement opportunities for both restoration sponsors and regulators, such as advocacy for sustainable program funding levels and best industry practices, to achieve our shared goals for biodiversity, conservation, and resiliency.



Swainson's hawk



Fundamental Policies for Environmental Offset Markets: Advance & Additionality

Offsets completed and monitored in advance of impacts reduce the temporal loss of ecological services and ecological performance risk. Accordingly, advance offsets or mitigation are the environmentally preferable option. For CWA wetland offsets, the Rule grants mitigation bank credits a preference over other mitigation forms because banks must accomplish site identification and approvals, construction, and attainment of some ecological performance standards in advance of permitted impacts. The same preference is granted to released In-Lieu Fee (ILF) credits on the basis that these credits represent mitigation benchmarks completed in advance of impacts. Government policies should distinguish between restoration project's planning stages versus the construction, monitoring, and performance stages, and then incentivize the latter in both policy and implementation. Failure to consistently give preference to and invest regulator time in development of advance mitigation forms, i.e. mitigation bank credits and released ILF credits, discourages high standards and investment in the best environmental outcome.

While banks are the common form of mitigation used to deliver ecological outcomes in advance of impacts, well-designed ILF and Permittee-Responsible Mitigation (PRM) projects can deliver comparable robust environmental outcomes. For example, ILF programs can direct offsets to locations that will most effectively support large-scale conservation outcomes. Availability of these other mitigation forms is particularly important for permittees in markets where bank credits are limited or non-existent. Through their review and oversight authority, regulators should consistently hold all forms of mitigation to high standards for project planning and performance to ensure all mitigation forms achieve the desired environmental outcomes.

Importantly, legislators and agencies should manage mitigation programs to ensure staffing and funding are sufficient to meet statutory timelines for review and implementation of advance mitigation, i.e. banks and released ILF credits. Otherwise, sponsors are disincentivized from investing in advance mitigation and more permittees will turn to mitigation options that are concurrent or after the time of environmental impact, which is worse for the environment and ultimately results in a larger administrative workload to oversee.

To effectively achieve a "no net loss" or other target goal for ecological benefits, mitigation must add quantifiable ecological function to the landscape beyond the identified baseline. When regulators approve a mitigation project that proposes to merely preserve or minimally enhance the landscape, it undercuts investment in more expensive mitigation endeavors to restore, connect or create new landscapes that generate ecological uplift. Consequently, preservation and minimal enhancement should typically be accounted for with greater mitigation-to-impact ratios and reserved for situations when restoration is impracticable or when preservation is complementary to a project with a primary focus on restoration.] As agencies trend towards multi-benefit mitigation policies, additionality concerns should also underscore the importance of intelligible crediting methodologies that clearly distinguish restoration values and avoid double counting mitigation measures.



Equivalency and Fairness in Government Implementation

Since promulgation of the 2008 Compensatory Mitigation Rule, the wetlands mitigation market has enjoyed an investment influx and the national number of mitigation banks and ILF Programs has more than doubled. The corresponding increase in available advance mitigation credits benefits infrastructure projects because Clean Water Act permit processing time is typically 50% faster when readily available third-party credits are used versus other mitigation forms. While federal and state policies have established a framework for regulatory predictability, market potential is hampered by uncertain implementation and inconsistent application of policies' requirements and standards. In some regions, investment in banks and ILF programs is chilled due to unequal enforcement of standards across all forms of mitigation.

This equivalency issue is not just disruptive in the mitigation sector, but provides a lesson for incentivizing investment in other environmental offset markets as well. Regulators must hold all restoration forms under an offset program to equivalent compliance standards, otherwise market demand will shift to the lowest cost option permissible under the lowest enforced standard. As new restoration programs emerge for compliance with mitigation and other offset needs, it is crucial that these ventures are held to the same high standards and equivalent requirements as existing advance mitigation mechanisms, including measurable administrative and ecological performance milestones. Ultimately, restoration businesses need marketplace fairness where all restoration sponsors and project forms are treated with equal application of law and policy for predictable outcomes.

Viewed in another context, equivalency or parity is also essential for accountability in mitigation and other offsetting programs. CalERBA strongly supports the long-standing national goal of "no net loss" of aquatic resources, which is fulfilled when the amount of mitigation or offset required is commensurate to the scale of the impact and loss of ecological function. Specific amount calculations are typically implemented through the specific methodologies and ratios established for impacts to the protected resource. Ensuring parity between impact and offset is also another fundamental element of restoration achieved through commitment to the scientific principle.

Through years of collaboration between industry, policy-makers, and regulators, these Principles for Nature-Based Solutions have emerged as foundational to successful, enduring ecological restoration and environmental markets. CalERBA is committed to upholding these Principles in our policy positions, educational, and advocacy work. With the guidance of these Principles, we invite discussion with the broader ecological restoration sector to improve practices, policies, and program implementation for better environmental outcomes and partnerships.





**Thank you to our 2021-2022
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