Restoring Regulation:

An Assessment of the Regulatory Process for Restoration Projects

By

Shannon Laine Fiala

A thesis submitted in partial satisfaction of the

requirements for the degree of

Master of Landscape Architecture

in

Landscape Architecture

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor G. Mathias Kondolf, Chair
Professor Robert Twiss
Professor Joe McBride

Spring 2011

The thesis of Shannon Fiala, titled Restoring Regulation: An Assessment of the Regulatory Process for Restoration Projects, is approved:

Chair _____ Date _____

_____ Date _____

_____ Date _____

University of California, Berkeley

Copyright/blank page

Abstract
Restoring Regulation
by
Shannon Fiala
Master of Landscape Architecture in Landscape Architecture
University of California, Berkeley
Professor G. Mathias Kondolf, Chair

When completed responsibly, ecological restoration, particularly process-based restoration, serves as an important tool in repairing some of the damage caused by human development. My research questions whether projects that seek to improve environmental quality, such as ecological restoration, should follow the same regulatory process designed to minimize and disclose the impacts of environmentally damaging projects. Should an alternative compliance process be created for certain types of projects? Could the existing process be revised to more effectively reduce the short-term impacts of projects seeking long-term environmental improvements? To answer these questions, I examined the history of environmental policy and ecological restoration in the United States. I conducted interviews with restoration practitioners at non-profit organizations and public agencies, with environmental consultants, and with regulatory agency staff. I also analyzed a case study on the interaction between restoration projects and the California Environmental Quality Act. In interviews, staff members have almost universally stated that the regulatory process benefits habitat restoration projects by forcing project proponents to consider a broader range of environmental impacts than may have been considered without review. However, many interviewees have suggested innovative improvements to the review process. During interviews, participants have described momentum within regulatory agencies to improve the environmental review process. Through my research, I hope to summarize practical opportunities for improvement.

Table of Contents

List of Figures

List of Tables

List of Abbreviations

AB	Assembly Bill (California State Legislature)
BCDC	San Francisco Bay Conservation and Development Commission
BMP	Best Management Practice
BO	Biological Opinion (under ESA)
CAA	Federal Clean Air Act
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CCCRCD	Contra Costa County Resource Conservation District
CDFG	California Department of Fish and Game
CEMAR	Center for Ecosystem Management and Research
CEQA	California Environmental Quality Act
CERES	California Environmental Resources Evaluation System
CESA	California Endangered Species Act
CLSI	California Land Stewardship Institute
CNPS	California Native Plant Society
CPRC	California Public Resources Code
CRLF	California Red-legged Frog
CWA	Federal Clean Water Act
DEIR	Draft Environmental Impact Report (under CEQA)
EBMUD	East Bay Municipal Utilities District
EIR	Environmental Impact Report (under CEQA)
EIS	Environmental Impact Statement (under NEPA)
EPA	Federal Environmental Protection Agency
ESA	Federal Endangered Species Act
ESA-PWA	Environmental Science Associates
FONSI	Finding of No Significance (under NEPA)
GGNRA	Golden Gate National Recreation Area
HCP	Habitat Conservation Plan
LARRP	Los Angeles River Revitalization Project
MHCP	Multispecies Habitat Conservation Plan
MMWD	Marin Municipal Water District
MND	Mitigated Negative Declaration (under CEQA)
MROSD	Midpeninsula Regional Open Space District
ND	Negatively declaration (under CEQA)
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
NPS	National Park Service
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit (USACE)
PCL	Planning and Conservation League
PEIR	Programmatic Environmental Impact Report (under CEQA)

PWA	Phillip Williams Associates
RCD	Resource Conservation District
RREMP	Russian River Estuary Management Project
RWQCB	Regional Water Quality Control Board
SB	Senate Bill (California State Legislature)
SBSPRP	South Bay Salt Pond Restoration Plan
SCWA	Sonoma County Water Agency
SEPA	Washington State Environment Policy Act
SEQRA	New York State Environmental Quality Review Act
SER	Society for Ecological Restoration
SFBJV	San Francisco Bay Joint Venture
SFPUC	San Francisco Public Utilities Commission
SWRCB	State Water Resources Control Board
THP	Timber Harvesting Plan
TNC	The Nature Conservancy
WSIP	SFPUC's Water System Improvement Program
USACE	United State Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

Chapter 1. Introduction and historical analysis

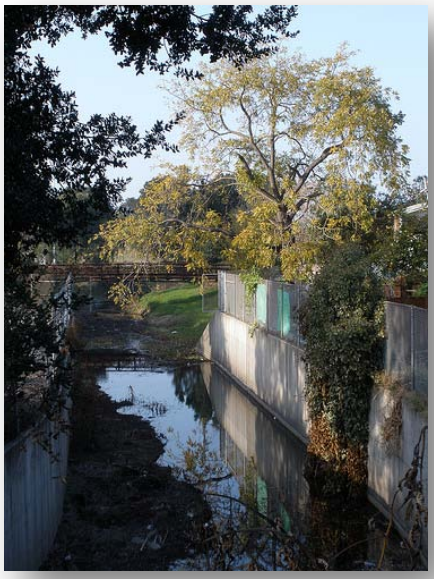


Figure 1. Culvert on Pinole Creek

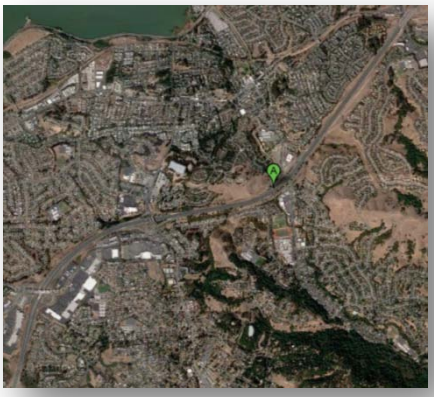


Figure 2. Pinole Creek at I-80

In order to remove a barrier to fish passage on Pinole Creek, a tributary to San Francisco Bay, the Contra Costa County Resource Conservation District (CCCRCD) spent over $100,000 on designs and environmental permits for a $200,000 construction project.[1] This culvert represented a total migration barrier to steelhead (*Oncorhynchus mykiss*), a federally threatened species, and its removal would have opened seven miles of spawning habitat in the Pinole Creek watershed, the only steelhead-supporting stream in Contra Costa County (Figure 1-2).[2] Although the CCCRCD was able to obtain grant funds for the design work and partner with Caltrans to complete environmental review, this project raises questions about whether small restoration projects are sometimes over-scrutinized in the regulatory process. Should habitat restoration projects, particularly those designed to benefit declining species, comply with environmental policies designed to reduce pollution discharges and regulate greenfield development? Should an alternative compliance process be created for certain types of restoration projects? Could the existing process be revised to be more effective for

1 Arnold 2010.
2 Ibid.

reducing the short-term environmental impacts of projects seeking long-term environmental improvements?

1.1 Research Question

Considering cases like this, in combination with my own work experience and conversations with colleagues in the restoration profession, has lead me to this question: Do the environmental policies that are designed to *protect* endangered plants and animals inhibit habitat restoration projects that are designed to *benefit* those same species? Should there be a different environmental compliance process for restoration projects? How can regulatory agencies support and encourage responsible ecological restoration while also facilitating an effective review process?

Through a historical analysis of environmental policy and ecological restoration, interviews with restoration practitioners and regulatory agency staff, and case studies on the interaction between restoration projects and the environmental review process, I present answers to these questions.

1.2 A brief history of ecological restoration

In California, virtually all plant communities, and the wildlife that rely on them, have been negatively affected by land use changes.[3] Ninety to ninety-five percent of all vernal pools, ninety to ninety-five percent of all tidal salt marshes, and ninety-nine percent of all native grasslands in

Figure 3. Vernal Pools

3 Ornduff et al. 2003.

California have been lost in the past three hundred years.[4] Thirty plant species are presumed to have become extinct and many more are now endangered to the brink of extinction.[5] The State of California's Natural Heritage argues that 'the elimination of habitat is the most direct cause of most extinctions, extirpations, and species endangerment. Nearly every habitat and natural community in California has been reduced in quantity and quality since pre-settlement times.'[6]

Although preserving what remains of California's natural ecosystems should be a priority, ecological restoration is an important tool in improving or rebuilding those ecosystems that have already been disturbed. According to the Society for Ecological Restoration (SER)'s 'International Primer on Ecological Restoration,' ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed,' frequently as the direct or indirect result of human activities.[7] The SER defines restoration ecology as the science upon which the practice of ecological restoration is based.[8]

Aldo Leopold is often credited with founding the idea of restoration ecology in his dedication of the University of Wisconsin-Madison's arboretum in 1934, when he suggested that reconstruction of historical landscapes should be become a conservation priority.[9] Most major restoration ecology journals were not founded until fifty years later, such as Restoration and Management Notes, now Ecological

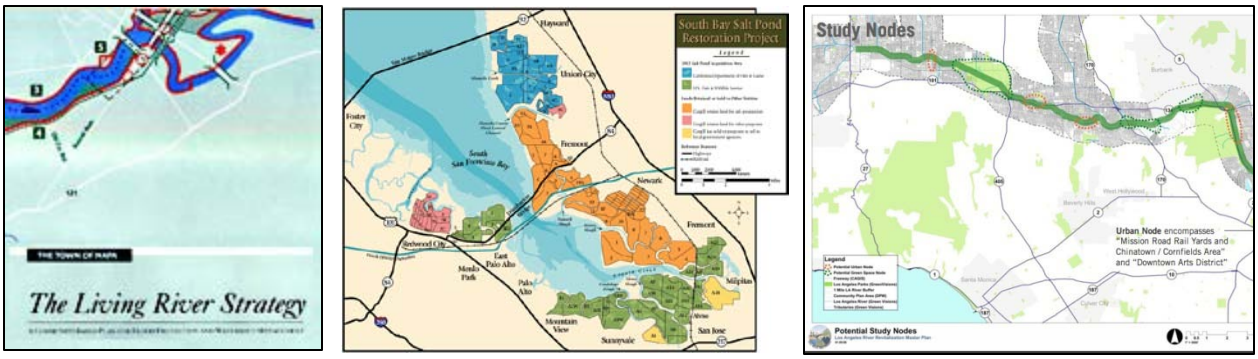
4 Ibid.
5 Ibid.
6 Jones and Stokes Associates 1987.
7 SER 2004.
8 SER 2004.
9 Egan and Howell 2001.

Restoration, in 1981, Ecological Applications in 1991, Restoration Ecology in 1993, or Ecological Management and Restoration in 2000.

The field of restoration ecology and the practice of ecological- restoration can be considered controversial. In some cases, environmentally destructive projects have been disguised as 'restoration.' For example, the Four Major Rivers Restoration Project in South Korea will primarily dredge rather than restore rivers (Figure 4).[10] More generally, the practice of ecological restoration implies that humans have the ability to potentially destroy ecosystems and restore them later or recreate them elsewhere.[11] Wetland mitigation under the Clean Water Act, for example, allows natural wetlands to be destroyed if man-made wetlands of equal size are created in another location. For the purposes of this study, I focused on the regulation of projects whose primary motivation is the restoration of habitats that have already been damaged, rather than the re-creation of habitats as compensation for habitat destruction.

Figure 4. Four Major Rivers Project, South Korea

10 Normile 2010.
11 Ornduff et al. 2003.



Figures 5-7. Napa River Watershed Flood Protection and Habitat Enhancement Project; South Bay Salt Ponds Restoration Project; Los Angeles River Revitalization Project

Despite mixed opinions, the practice of ecological restoration has become increasingly common over the past thirty years. In 2007, a review over 37,000 river restoration projects nationwide revealed that over one billion dollars was spent annually on restoration projects.[12] In California, major projects are currently under way to restore 5000 acres of floodplain in the lower Napa River watershed ($60,000,000),[13] to restore 15,000 acres of tidal marsh in the southern San Francisco bay ($150,000,000),[14] and to restore over 30 miles of the Los Angeles River ($2,000,000,000) (Figures 5-7).[15] However, these figures include money spent on environmental compliance, such as California Environmental Quality Act and National Environmental Policy Act compliance and permitting under the Clean Water Act and Endangered Species Act, in addition to the design and construction of habitat improvements. With the exception of projects under five acres, all restoration projects must comply with the same environmental laws that were created to protect the environment from harm.[16]

12 Bernhardt 2007.
13 Courtney 2010.
14 SBSPRP 2010.
15 Hymon 2007.
16 CCR:14.3.19.15333.

1.3 Historical Analysis of Environmental Policy and Ecological Restoration

In order to understand how environmental review affects restoration projects, it is necessary to understand the environmental policies from which the compliance process was derived. As concern for public health increased and as environmental degradation became more apparent, strong political will motivated Congress to pass a series of environmental policies in 1970's: the Clean Water Act (CWA), the Clean Air Act (CAA), and the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). Each of these laws expanded greatly upon existing federal laws, and imposed unprecedented control and regulatory costs on industry.[17] These policies created an environmental review process designed to regulate pollution and control development, and as a consequence of history, ecological restoration projects are now subject to the same process (Figure 8). In this section I briefly describe federal and state environmental policies and discuss how ecological restoration projects are required to comply with them.

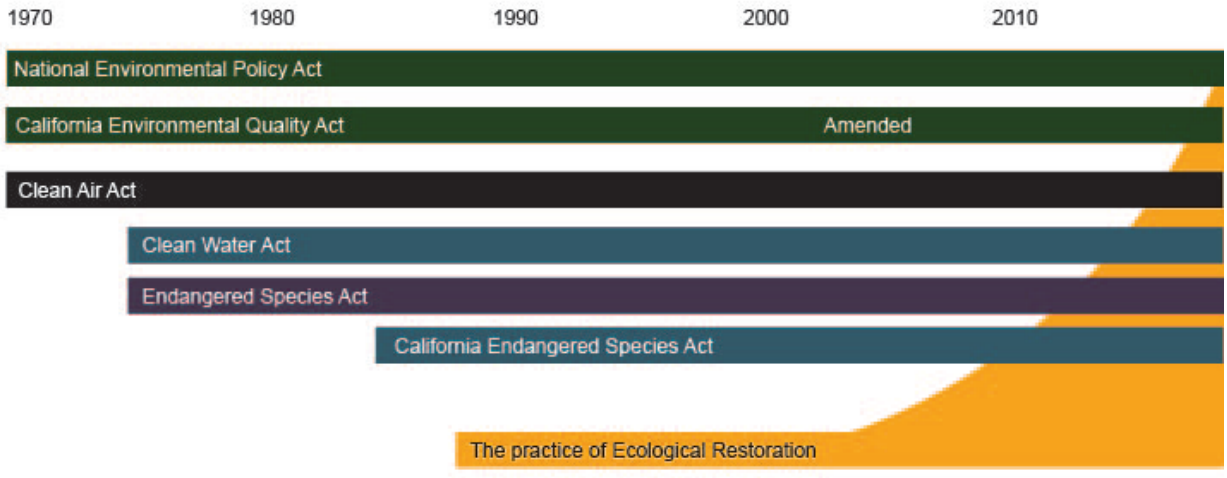


Figure 8. Timeline of environmental policy and ecological restoration

17 Schroeder 1998.

1.3.1 Clean Water Act

As described by the United States Environmental Protection Agency (EPA), the Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution. Increasing public awareness and concern for controlling water pollution led to amendments in 1972. As amended in 1977, the law became commonly known as the CWA.[18] The CWA was passed to eliminate releases of toxic substances and to ensure that surface waters would meet standards necessary for human sports and recreation.[19] The CWA also protects wetlands and other 'waters of the United States.'

Under the CWA, sponsors of projects that have potential to impact water quality, including habitat restoration projects, must obtain a CWA Section 404 permit granted by the United States Army Corps of Engineers (USACE) for projects that involve dredging or filling 'waters of the United States,' which includes wetlands, and CWA Section 401 Water Quality Certifications granted by the State Water Resources Control Board's (SWRCB) Regional Water Quality Control Boards (RWQCB). Both permits focus primarily on quantifying dredging and the placement of fill material associated with the project and mitigation for related impacts. The CWA Section 401 and 404 permit applications are included in Appendix A.

1.3.2 Endangered Species Act

Although Congress had passed the Endangered Species Preservation Act of 1966 and the Endangered Species Conservation Act of 1969 in an attempt to address the problem of species extinction, they did not grant the government the authority to

18 EPA 2010a.
19 Ibid.

restrict the anthropogenic causes that Congress recognized were contributing to extinction at unnatural rates.[20] In 1973, the Endangered Species Act (ESA) allowed the United States Fish and Wildlife Service (USFWS) to restrict activities that would harm declining species and to protect them from extinction as a consequence of human activities.[21]

If any project has the potential to kill, harm or affect the habitat of a federally listed threatened or endangered species, the project sponsors must begin a Section 7 consultation with the USFWS under the ESA. Project proponents will submit a 'Biological Assessment' to the USFWS, in order to obtain a 'Biological Opinion' that will provide explicit instructions as to how the project should avoid and/or mitigate for impacts to threatened and endangered species.[22]

1.3.3 National Environmental Policy Act

NEPA differed from other legislation passed in the 1970's because it did not set permitting requirements or focus specifically on one resource like the CAA, CWA or ESA, but rather required that environmental impact statements (EIS) be prepared for major federal actions that have potentially significant effects on the environment.[23]

Projects occurring on federal land, with federal partners, or with federal funding must comply with NEPA. The process is described in Figure 9. Projects that are not expected to have significant impacts to the environment can qualify for a 'Categorical

20 Doremus 1997.
21 Kamel 2010.
22 USFWS 2010.
23 EPA 2010c.

Exclusion' from the NEPA process. Most projects conduct an 'Environmental Assessment' to determine the extent of the project's impacts, which, if found to be less than significant, can file a 'Finding of No Significant Impact' (FONSI) or if significant, may necessitate the preparation of an EIS. An EIS considers impacts to a wide range of resource areas, including threatened or endangered species, air and water quality, historic and cultural sites, social and economic impacts to local communities, and alternatives analysis. NEPA also functions to provide opportunities for the public to offer their input on federal projects.

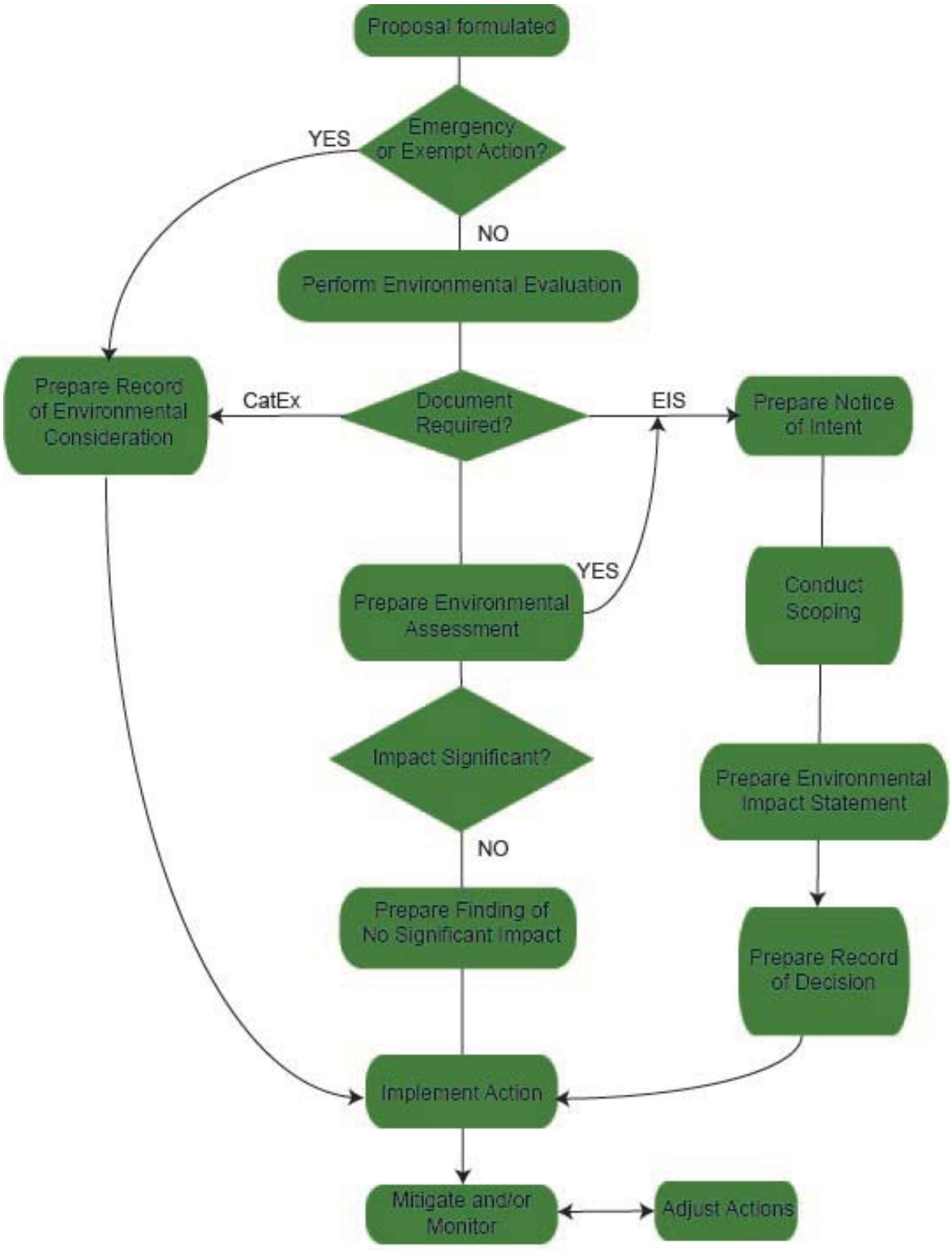


Figure 9. NEPA process

1.3.4 California Environmental Quality Act

In California, the state legislature simultaneously passed the California Environmental Quality Act (CEQA) in1970 and the California Endangered Species Act (CESA), which was proposed in 1970, but was not enacted until fourteen years later in 1984.[24] Together these acts were passed to protect public health from pollution discharges, to give the government authority to address pollution, to give precedence to environmental issues in governmental decision-making and to protect critically rare species from extinction.[25]

Government agencies and private property owners are required to comply with CEQA when proposed projects have the potential to cause either a direct physical change or a reasonably foreseeable indirect change in the environment.[26] If a habitat restoration project is five acres or less, project proponents can file for a 'categorical exemption,' which was added to CEQA in 2004.[27] For most large and complex habitat restoration projects, the CEQA process typically begins with an 'Initial Study' to determine what resources the project may 'significantly' impact. CEQA covers a broader range of impacts than NEPA: aesthetics, agriculture resources, air quality, biological resources, cultural resources, geology / soils, hazards & hazardous materials, hydrology / water quality, land use / planning, mineral resources, noise, population / housing, public services, recreation, transportation / traffic, and utilities / services.[28] Depending on the complexity and the level of impact, habitat restoration projects must either submit

24 CERES 2010.
25 Ibid.
26 Ibid.
27 CCR:14.3.19.15333.
28 CERES 2010.

'Negative Declarations (ND),' 'Mitigated Negative Declarations (MND),' or if the impacts to these resources are too significant or too complex, proponents must prepare an 'Environmental Impact Report (EIR),' which includes comment periods to facilitate public participation, similar to NEPA. The CEQA process is summarized in Figure 10. Habitat restoration projects may also require a California Department of Fish and Game Code 1600 permit, 'Streambed Alteration Agreement,' for projects that may affect rivers and streams or their riparian corridors, which is included in Appendix A with the fee schedule.

Despite their accomplishments in protecting ecological integrity and reducing environmental impacts, an extensive body of literature has been devoted to general criticism of these federal and state environmental policies. This study is not a general critique of these policies, but instead, seeks to explore whether these policies created to regulate potentially damaging development projects are the best possible means for regulating ecological restoration projects. For my literature review in Chapter 2, I focused more on the issues that arise when habitat restoration projects are subject to these policies, for which a much smaller body of literature exists.

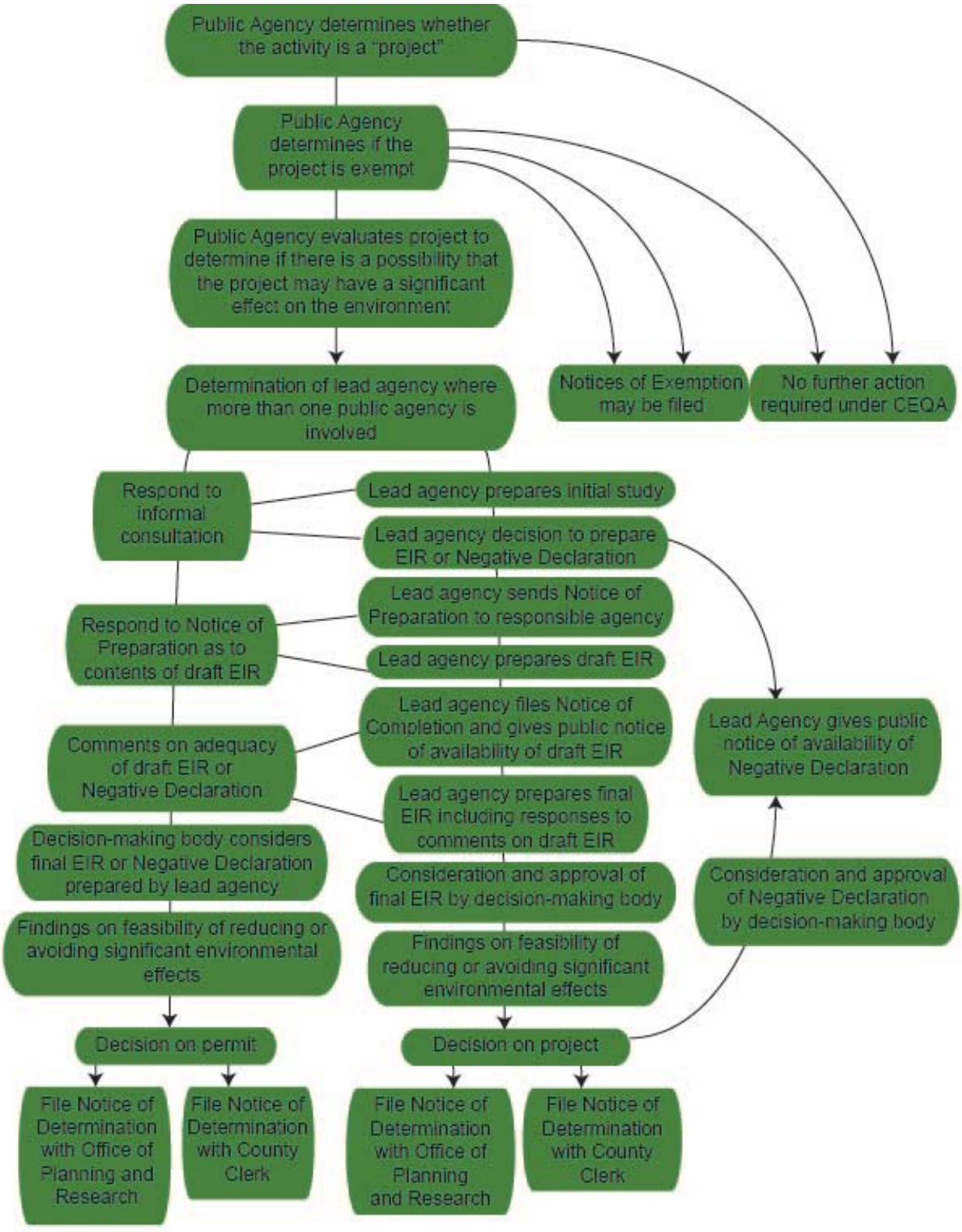


Figure 10. CEQA Process

1.4 Habitat restoration in the context of environmental policy

After addressing immediate concerns to regulate pollutants, control development, protect rare species, and reduce the filling of wetlands, scientists began the more nuanced approach of reversing the damage done to our nation's ecosystems. Because habitat restoration projects are considered "projects" as defined by law and only one set of environmental regulations exists, they are subject to the same level of scrutiny as environmentally degrading projects (Figure 11). As described by the organization, Sustainable Conservation,

> *'Many landowners want to protect the rivers, streams, and other natural resources on their lands; however, this [regulatory] process is complicated and expensive... For example, when farmers want to restore an eroded creek, they must apply to seven agencies for permits, spend more than $1,500 in fees, and wait at least a year for approval before they can begin restoration.'*[29]

As a consequence of history, most of our major environmental laws were not created with habitat restoration in mind. If these environmental laws had been passed after the establishment of restoration ecology, how might the process have accommodated restoration projects more effectively?

29 Sustainable Conservation 1998.

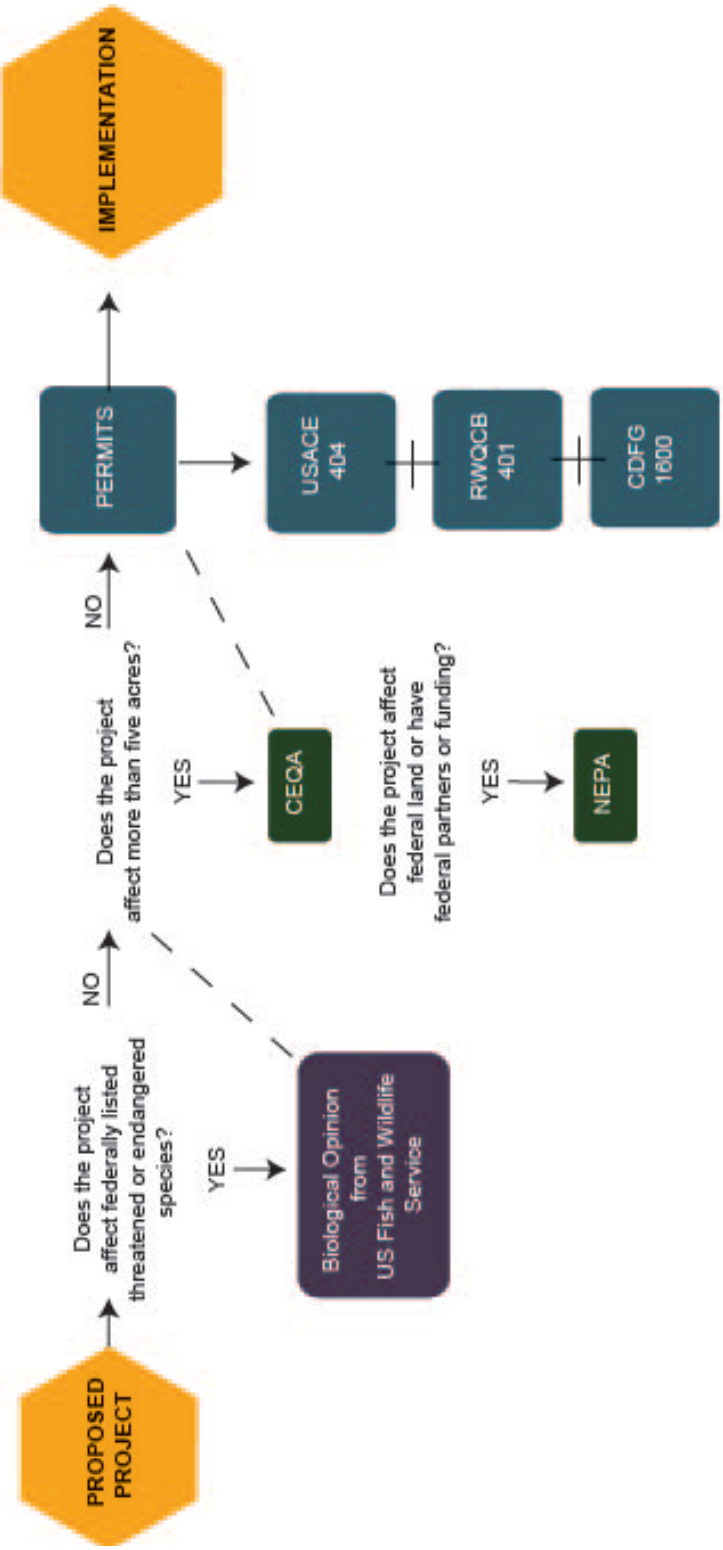


Figure 11. Regulatory Process for Restoration Projects

Although every aspect of the environmental compliance process has an effect on habitat restoration projects, I restricted my recommendations to California's state laws. Although changing policy and reforming laws is difficult at both the state and federal level, California's legislative process is relatively more accessible than the federal legislative process. Furthermore, California has a history of innovative regulation and a high concentration of ecological restoration projects have occurred in this state. To test the potential for revised compliance for restoration projects, I focused on the center piece of California environmental regulation: CEQA. CEQA guidelines are reviewed by the Governor's Office of Planning and Research every two years, which represents an opportunity for affecting change. I considered the laws and regulations that apply to habitat restoration projects in other states to the extent that they elucidate potential improvements for California's system. In this study, I examined the relationship between CEQA and habitat restoration projects with the hope that I might suggest reforms that would facilitate improving designs and reducing short-term impacts of restoration projects while still assuring the goals of CEQA.

1.5 Methods

To address these questions, my methods included a literature review, interviews with restoration practitioners in government agencies and non-profits, environment consultants, and regulatory agency staff and a review of case studies that cut across a spectrum of restoration types and scales.

1.5.1 Literature Review

Although an extensive body of literature has been published on perceived general deficiencies of environmental policies, I focused my literature review on the CEQA's regulation of habitat restoration projects, a topic on which a much smaller body of literature has been published. Two studies, in particular, provide guidance in examining and suggesting changes to the environmental compliance process. One study examined the relationship between NEPA and clean energy projects, but focused primarily on the economics of the situation. Another study outlined the process through which an amendment could be added to CEQA to consider impacts to wildlife corridors.

1.5.2 Interviews

Between November 2010 and February 2011, I conducted interviews with restoration practitioners and regulatory agency staff to obtain qualitative data on the nature of the problem with navigating the regulatory process for habitat restoration projects and suggestions for improvement to the process. With their years of experience in practicing CEQA and applying for permits, I highly valued the opinions of staff from these various public and private entities. In addition to asking how the process affects the implementation of habitat restoration projects, I asked specific questions on the average percent of restoration project budgets that went into environmental compliance as opposed to the implementation of the restoration action, and the average amount of time that is typically required to obtain compliance. I also asked how the interviewees would revise the process to be more effective and if there were certain types of projects that could be exempted from the process. The results are described in Chapter 3 and

the interview schedules used for restoration practitioners and regulatory agency staff are included in Appendix B.

1.5.3. Case study review

In order to assess how CEQA could be revised to be more effective in regulating impacts of habitat restoration projects, I reviewed a case study of the Russian River Estuary Management Project. The Sonoma County Water Agency released the Draft Environmental Impact Report (DEIR) for public comment in December 2010.

1.5.4 Recommendations and Conclusions

My hope is that this study revealed opportunities for alleviating the regulatory burden placed on projects that seek to improve habitat quality and identified strategic opportunities to revise the process to facilitate restoration without undermining CEQA's goals. In Chapter 5, I provided recommendations for revising CEQA guidelines to improve CEQA's benefits to habitat restoration projects. .

Chapter 2. Literature Review

As described in the introduction, extensive literature has been published in general criticism of national and, to a lesser extent, state environmental policy, primarily in terms of its inefficacy and its implementation cost.[30] Much less has been published specifically regarding the interaction between environmental policy and projects that seek to improve environmental quality. However, one article addresses environmental compliance for renewable energy projects[31] and another article proposes amendments to CEQA guidelines to consider impacts to wildlife corridors[32] from both of which lessons can be applied in this analysis. I analyzed two articles to assess what percent of total budgets of restoration projects were spent on the regulatory process. In this review, I also examined proposed environmental legislation from the 2009-2010 session of the California State Legislature. Finally I considered a legal comparison of CEQA with similar environmental policies from other states, as a means of identifying opportunities for improvement in CEQA's guidelines. However, the amount of information written on this topic seems very limited. This lack of research might stem from the disconnection between organizations that apply for and regulate environmental compliance and implement habitat restoration projects and those that conduct restoration ecology research.[33]

30 Adler et al 1993; Black 2004; Bovenberg et al 2005; Breaux and Serefiddin 1999; Cheever 1996; Cole 1992; Doremus 1997; Doremus 1998; Doremus 2001; Gardner et al 1998; Houck 1993; Houck and Rolland 1995; Houck 1995; Kilbourne 1991; Moreno 2010; Rabe 1995; Redmond 2000; Rohlf 1989; Rolf 1991; Ruhl 1998; Tear et al 1993; Yaffee 1982; Zygmunt 1997.

31 Russell 2009.

32 Schlotterbeck 2003.

33 Seavy 2010.

2.1 Relevant literature

In 'Streamlining NEPA to Combat Global Climate Change,' Russell described a scenario that is very similar to the issue of habitat restoration projects seeking compliance under CEQA.[34] She discussed the impact of NEPA on non-carbon energy source development and asks whether the NEPA process should be amended to expedite the process for clean energy projects. Just as habitat restoration projects must follow the same CEQA process as greenfield development, clean energy projects, such as solar installations, wind farms, and wave technology, must also comply with the same NEPA process as traditional energy projects. Furthermore, some traditional energy projects receive categorical exemptions, which gives traditional energy developers an unfair market advantage over non-exempted non-carbon energy projects and provides an economic incentive for the development of traditional energy, such as nuclear energy and specific types of fossil fuels. Russell acknowledged that on one hand, streamlining NEPA for clean energy projects would aid in the process of combating climate change, but on the other hand, NEPA was enacted to provide the public with an opportunity to comment and to protect public interest. One possible solution could be exempting projects from some aspects of compliance without exempting them from the public comment period. Russell suggested that a categorical

Figure 12. Renewable energy and NEPA

34 Russell 2009.

approach to siting and licensing of clean energy resources may be a necessary step in addressing climate change.

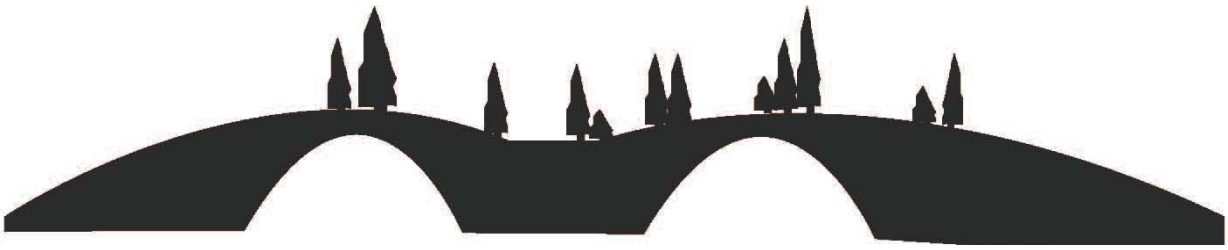


Figure 13. Wildlife corridors and CEQA

In another article, 'Preserving Biological Diversity with Wildlife Corridors: Amending the Guidelines to CEQA,' Schlotterbeck identified the need for reform and proposed an amendment to CEQA, which serves as an example of how CEQA could also be altered to more effectively accommodate ecological restoration projects.[35] The author argued that CEQA guidelines should be amended to define significant impacts to wildlife corridors and to outline applicable mitigation measures for impacts identified as unavoidable. She began by examining the policy goals of CEQA, judicial interpretations of the Act, and the recent practice of lead agencies to consider wildlife corridors. She described the amendment to CEQA in 1995 that required the Governor's Office of Planning and Research to review and recommend changes to CEQA guidelines every two years and the Secretary of Resources to adopt guideline amendments every two years.[36] In her paper, she proposed an amendment that defined 'significant impacts' to wildlife corridors and appropriate mitigation measures for projects that are determined to

35 Schlotterbeck 2003.
36 Cal. Res. Pub. Code 21087.

have significant impacts. Schlotterbeck suggested that mandatory mitigation for significant impacts to wildlife corridors may be the next step in amending CEQA to improve its protection of wildlife corridors. Although the mechanisms she proposed to add to CEQA are different, her legal background and the organization of her theoretical approach provides an important perspective on the amendment process.

Additional articles go on to critique CEQA and other environmental laws in ways that are less specific to this study, but that are nevertheless relevant because they suggest potential for reform and they iterate some of the same concerns voiced in interviews that I summarized in Chapter 3. For example, in 'The Weakness of Tight Ties: Why Scientists Almost Destroyed the Coachella Valley Multispecies Habitat Conservation Plan (MHCP) in Order to Save it,' Goldstein described how conflict between regulatory staff and local biologists significantly delayed the passage of a MHCP for endangered species in southern California.[37] Ideological differences between biologists and regulatory staff became more important than their primary objective of endangered species protection, which was a recurring theme from my interviews with restoration practitioners.

Figure 14. Coachella Valley fringe-toed lizard

37 Goldstein 2010.

As Goldstein states,

> *'understanding this co-production of science and the social order is a first step toward effectively incorporating different experts in negotiation and implementation of technically complex collaborative agreements.*'[38]

As restoration projects become increasingly complex, particularly with the rise of adaptive management and process-based restoration, agreement among scientists and regulatory staff will be critical to the implementation of these projects.

In 'River and Riparian Restoration in the Southwest: Results of the National River Restoration Science Synthesis Project,' Follstad et al. collected data on the total budgets of large-scale restoration projects in the southwestern United States, including what portion of the budget was spent on implementation and monitoring.[39] By subtracting amounts spent on implementation and monitoring from total project cost, I hoped to reveal the average cost and average percent of total cost spent on project design and regulatory compliance. By these estimates, the average percent of total cost spent on design and permitting for restoration projects was 12% of the total budget.

38 Goldstein 2010.
39 Follstad et al. 2007.

Table 1. Summary of percent of total budget spent on regulatory compliance (adapted from Follstad et al. 2007)

Total	Monitoring	Implementation	Remainder	Percent of Total
$67,520,000	$23,400,000	$38,500,000	$5,620,000.00	8.32%
$626,000,000	–	$495,000,000	$131,000,000.00	20.93%
$30,600,000	$1,800,000	$25,600,000	$3,200,000.00	10.46%
$26,700,000	$12,600,000	$21,100,000	-$7,000,000.00	-26.22%
$34,000,000	–	$29,000,000	$5,000,000.00	14.71%
$150,300,000	$6,000,000	$126,200,000	$18,100,000.00	12.04%
$41,500,000	–	$37,000,000	$4,500,000.00	10.84%

In 'Two Decades of River Restoration in California: What Can We Learn?,' Kondolf et al. estimated that one-third of the interviewed projects hired a consultant to take the lead or provide input toward the restoration design, but most commonly designers were government agency staff (45%), particularly from California state agencies.[40] This was in contrast to the national average where only 13% of projects were designed by agency staff. Interviewees reported that past experience was the most common source of knowledge influencing design (70%), in contrast to the national level where only 13% of respondents cited experience as their primary source of knowledge.[41] Among the California interviewees, only 9% relied primarily on preexisting frameworks like manuals, agency guidelines, or other literature, in comparison to 16% at the national level.[42]

40 Kondolf, G.M et al. 2007.
41 Bernhardt et al. 2007.
42 Kondolf, G.M et al. 2007; Bernhardt et al. 2007.

2.2 Recently proposed state legislative bills

In addition to these published articles, the Planning and Conservation League (PCL)'s collection of environmental legislation from 2009-2010 shows that bills have been recently introduced in the state assembly and senate that proposed changes that would enact recommendations similar to those proposed by Russell, Schlotterbeck, and Goldstein, and to increase funding for salmon restoration projects at the state level.[43]

For example, on February 19, 2010 State Senator Ashburn introduced a bill (SB 1261) that would establish 'a fast track environmental review process that maintains current environmental protection while expediting the review of projects related to green or renewable industries that will create jobs in the state, but the bill was not passed.[44]

On February 27, 2009, Assembly Member Monning introduced AB 1279 that stated, 'Existing law declares that the protection and conservation of state fish and wildlife resources are of the utmost public interest and [existing law] provides for the conservation of these resources. This bill would declare the intent of the Legislature to enact legislation that would fund salmon restoration projects,' but the bill was not passed.

On February 18, 2010, Assembly Member Huffman introduced AB 2063 that would have altered the Salmon, Steelhead Trout, and Anadromous Fisheries Protection Act to utilize best available science and a life cycle analysis in determining where to focus and prioritize conservation planning efforts for recovery of Chinook and other salmonid species. Unlike the other two bills described above, it passed out of Senate

43 PCL 2010.
44 PCL 2010.

Natural Resources and Water Committee and Senate Governmental Organization Committee, but was placed on suspense file in Senate Appropriations Committee.[45]

On one hand, these legislators proposed new bills and amendments to existing state law to benefit endangered species and improve ecosystem management in the state. On the other hand, these bills are not often passed, as was the case for the bills listed above. These findings indicate that legislators are interested in restoration in general and even the specifically the regulation of restoration, but that these concerns do not yet have the majority support needed for enactment of new regulations and funding programs.

2.3 Comparison of CEQA with Other State Environmental Policy Acts

In his article, 'California Environmental Quality Act (CEQA) after Two Decades: Relevant Problems and Ideas for Necessary Reform,' Varner (1992) advised that California should examine the beneficial aspects of other state's environmental policies that were enacted after CEQA. In particular, he analyzed New York's State Environmental Quality Review Act (SEQRA) and Washington's State Environmental Policy Act (SEPA), both of which were modeled after NEPA, but attempted to avoid the pitfalls of earlier state statutes, such as CEQA.[46]

Figure 15. SEPA

Figure 16. SEQRA

45 Huffman 2010.

In particular, he highlighted SEPA's clarity in defining which types of projects are required to go through SEPA and in determining whether the impacts are significant, both of which are subject to broader interpretation under CEQA.[47] Varner states that,

> 'SEPA grants increased substantive power to state and local agencies at the cost of procedural exactitude... that increased power provides for a more efficient statute by creating greater consistency and predictability, and by eliminating the undue pressure that adversarial groups exert on project sponsors.'[48]

Greater clarity in the regulations would benefit both the proponents of restoration projects, as well as other types of projects. CEQA does not grant decision-making authority to any state agency; the State Clearinghouse merely distributes CEQA documents to interested parties. However, if the CEQA process had more agency oversight, project proponents might spend less time and money writing overly cautious and conservative assessments of project impacts.

Overall the lack of literature on this topic, in combination with the general agreement among restoration practitioners that the process could be revised to be more effective for habitat restoration projects, indicates the need for this type of study. In Chapter 3, I summarized the results of my interviews with staff involved in the design, construction, and review of habitat restoration projects.

---

46 Varner 1992.
47 Varner 1992.
48 Ibid.

Chapter 3. Interview Results

As described in the Chapter 1, I spoke with a total of 30 individuals involved in the implementation of restoration projects. I interviewed staff from 24 organizations: non-profit organizations (n=8), government agencies (n=10), and environmental consulting firms (n=5) with experience in implementing habitat restoration projects. I also spoke with regulatory agency staff (n=7) and asked them a slightly different set of questions related to their experience in permitting restoration projects. The interview schedules are attached in Appendix B. For restoration practitioners, I asked five questions pertaining to their sense of how restoration projects are affected by the regulatory process, how much time and money is typically spent on compliance for restoration projects, and how the process could change to be more effective and less burdensome. The results of interviews are summarized in Table 2. These results reflect the opinions and understanding of individual staff members at these organizations and agencies, which may or may not accurately reflect the official stance of the organizations or agencies for which they work.

Table 2. Summary of Interview results

N=30	Effect of process?	Expense of process?	Separate process?	Revisions to process?
Small non-profits n=6	--Positive: need to consider impacts --Negative: expensive, time consuming, lack guidance	"collecting baseline survey data on properties is prohibitively expensive"	"no decent restoration project should have to go through CEQA" --streamline the process	--increased use of programmatic permits at the county level that includes numerous non-profits involved in implementing restoration
Large non-profits n=2	--barrier to private partners --challenging, not set-up to help you	"need to use volunteers to complete regulatory review documentation"	--should integrate state and federal processes for restoration projects alternative track for restorations	--need more guidance on how to navigate the process --revise the fee structure for permits for restoration projects
Local government agencies n=7	--time and resource-consuming --long-term planning --seems unreasonable	--not sure, but expensive, particularly if legally challenged	"No, the process is test of competency; if you cannot put together a good document, perhaps it is not a good project."	--revise process to acknowledge that restoration projects include short-term losses in order to achieve long-term gains
Federal government agencies n=3	--beneficial in involving the public in decision-making on public lands --public process is important	--difficult to estimate --varies too much depending on the scale of the project	"just a part of implementing restoration; managers are savvy to the process by now"	--longer-term, more gradual mitigation requirements --address agencies' single-species focus

Table 2. Summary of Interview results (continued)

N=30	Effect of process?	Expense of process?	Separate process?	Revisions to process?
Environmental consultants n=5	--beneficial to go through the same process as development projects, especially for large-scale projects	"need to dig" "no idea how much of total budget is spent" "depends on the project"	"CEQA should acknowledge uncertain impacts for adaptively managed restoration projects; restoration seeks to improve site over time"	--standardize timing in permit applications --monitor long-term benefits in order to justify short-term impacts
Regulatory agencies n=7	N / A	N / A	"believe in the regulatory process" "just because it is restoration does not mean they can be irresponsible"	--more transparent --more public involvement increase grant money --standardize permit language --use programmatic permits --permitting specialists --increase digital information- sharing, e.g. California wetlands portal --more flexible interpretation of "take;" currently a regulatory straightjacket

Overall the response to the first question regarding the effect of environmental review on restoration projects was positive. While the review process can be expensive and time-consuming, most participants felt that going through the process improved the design of the restoration and forced them to consider more impacts than they might have considered independent of review. However, most interviewees highlighted the importance of reducing hurdles and creating incentives to conduct restoration while still maintaining an effective review process.

In response to the second interview question regarding the cost of review, none of the participants were able to quantify the percent of the total budget for restoration projects that is typically spent on environmental compliance. As described by one participant, the cost and length of time required for restoration projects can vary hugely depending on the scale of the project, such as a small invasive plant removal or a large project like the South Bay Wetlands restoration. However, a higher the proportion of the total budget for smaller projects is typically spent on compliance. An example described by one participant was a $3000 culvert replacement, for which $2000 might be spent on compliance. One possible reform would be to categorize projects by the scale of their budgets, in order to avoid situations where compliance is more costly than construction. One participant estimated 5% of the total budget was spent on review, which did not include labor costs, and roughly 10% for mitigation. One non-profit staff members said that they use volunteers to write Mitigated Negative Declarations (MNDs) in order to minimize labor costs. Because most organizations conduct their own compliance, participants offered many intriguing suggestions for how the process could be improved.

I grouped the results according to the type of organization for which the participant worked: non-profit organization, public agency, and environmental consulting firms. Then I presented the results from my conversations with regulatory staff separately. Finally I summarized themes and strategic opportunities suggested by interviewees. Most criticisms of the regulatory process fell into several categories, regarding issues of cost and timing, consistency in the interpretation of the laws, and accessing guidance in navigating the process. I was not looking for consensus among all interviewees but rather to find practical reform suggestions.

3.1 Non-profit organizations

Figure 17. Non-profit organization logos

3.1.1 Effect of the regulatory process

Although the majority of participants felt that the review process was beneficial, some non-profit staff were not as positive about the process. Most non-profit staff felt that the environmental compliance process benefits restoration projects because it forces project proponents to consider impacts that would not necessarily be considered. However, most participants conceded that the process can be frustrating because not all of the impacts addressed under CEQA apply to restoration projects.

One participant felt that the difficulty of the process depended largely on the amount of data available at the start of a project because conducting all of the surveys that go into an initial study can be expensive and time-consuming. This participant felt that having agency staff on board ahead of submitting permit applications makes the process much less difficult and suggested that an increase in the use of programmatic permits, such as for California red-legged frog (CRLF), may be beneficial to the process for non-profit organizations conducting compliance for restoration projects.

Some participants expressed frustration with regulatory agencies' priorities. For example, one non-profit staff person felt that certain Best Management Practices (BMPs) were overly burdensome and somewhat unreasonable, such as placing fencing around miles of man-made ditch in an invasive plant removal project. One participant highlighted regulatory agencies' focus on short-term losses that would hopefully be mitigated by the long-term objectives of the restoration project, such as riparian vegetation loss in an effort to restore channel processes. Another participant also pointed out that concerns over cultural resources can conflict frequently with the protection of biological resources, but the participant cautioned that a single species approach can also create conflicts in the restoration or management of habitats between species, such as California red-legged frog (CRLF) and salmonids.

Furthermore, non-profit organizations navigating the environmental review process must rely on government entities to act as lead agencies in order to file under CEQA. At times, non-profit organizations have difficulty finding government agencies willing to serve as lead agencies, which impedes their ability to implement restoration projects. One non-profit staff member pointed out that this is unfortunate because non-

profits are often more financially efficient than government agencies due to their lower overhead costs, but cautioned that if there were no lead agency, developers might take advantage of the lack of oversight in the process.

3.1.2 Expense of the regulatory process

Another issue unique to non-profits is that in some cases they are able to find funding to implement restoration projects, but many funding agencies do not allow the funds to be spent on environmental compliance or labor costs and non-profits must find other means to pay for the review process.

3.1.3 Separate process for restoration

Unlike any other participant, one non-profit staff member felt that well-designed restoration projects should not have to go through CEQA. On the other hand, another non-profit staff member found permits less useful than CEQA because the impacts covered under permits are identifiable, and felt that permitting only delays projects and costs money and very rarely provides valuable input on restoration design.

Another participant suggested counting the number of small restoration projects, such as terrestrial vegetation removal projects, that were listed on the CEQAnet database to determine how many go through the process and whether a particular category of project could go on an alternative track. A search of the CEQAnet Database on November 11, 2010 revealed the percent of projects listed in the database associated with keyword: “restoration.” Many 'restoration' projects (over 1600) filed for Notices of Exemption. A search of 'restoration' projects for Notices of Intent only yielded four results: Santa Cruz County Master Permit for Environmental Enhancement

Projects; California State Lands Commission Giacomini Wetland Restoration Project; U.S. Department of Agriculture's Klamath River Fishery Restoration Program; and U.S. Department of Energy's Integrate Environmental Restoration and Waste Management Plan. The results of this search are presented in Table 2. This participant suggested that there might be types of monitoring, potential mitigation, or examples of projects that could be exempted. However, some interviewees cautioned that a streamlined process with a checklist could lead to 'cookbook' restoration that promotes a certain type of project.

Table 3. Summary of results from CEQAnet search

Document Type	Total Number in CEQAnet database	Number associated with keyword 'restoration'	Percent of total
Notice of Exemption	78,438	1,636	2%
Notice of Intent	417	4	.9%
Negative Declarations	52,050	396	.7%
Mitigated Negative Declaration	6,833	92	1%
Environmental Impact Reports	17,495	71	.4%
Notice of Determination	56,548	1,113	2%

3.1.4 Revisions to existing process

Several non-profit staff highlighted the importance of creating incentives for the implementation of restoration projects, such as through the use of programmatic permits and restoration grant programs that expedite the environmental review process. This staff member suggested that the fee structure for permits, especially for CDFG's streambed alteration agreements, can be a barrier in implementing restoration projects,

particularly for individual landowners, which I discussed more in the regulatory agency interview results in Section 3.4 and in Chapter 5.

Many non-profit staff members felt that more guidance should be available on navigating the process. One non-profit staff member suggested a state handbook on expected effort for different types of projects, such as the scope of the. For example, the State Clearinghouse or the Governor's Office of Planning and Research (OPR) could provide a list of required analyses and mitigations for particular types of restoration actions and references to exemplary environmental review documentation from previous projects. Similarly, another suggested improvement to the process is voluntarily submitting projects for peer review that would address the need for expert opinion on projects, rather than the individual opinions of the regulatory agency permit managers. Another non-profit staff person highlighted CEQA's potential as an outreach tool. This participant felt that CEQA gave project proponents the opportunity to engage interested parties, but thought that very few people learn about projects by reading CEQA documents. These suggestions are included in a policy memo to the Governor's OPR (Appendix C).

3.2 Government agencies

Figure 18.Public agency logos

3.2.1 Local water districts

These results are separated into local water districts and local open space districts because the challenges and opportunities are different for each type of organization.

3.2.1.1 Effect and expense of the regulatory process

As with non-profit organizations, most government agency staff at water districts felt that the environmental review process ultimately benefited restoration projects. One interviewee felt that it is beneficial to have standards by which to judge the design of restoration projects and their short-term impacts. However, like non-profit staff, they acknowledge that compliance requires time and money and in some instances, can completely stall restoration projects.

However, unlike many non-profit organizations, public land-holding government agencies have the ability to write master plans and obtain programmatic Environmental Impact Reports (PEIR) and permits that cover the management of their lands. For example, the Marin Municipal Water District has a PEIR for weed removal, fuel break work, and routine maintenance. However, special projects are not covered under the PEIR and need to go through CEQA separately and are usually filed as MNDs.

In managing lands for water production, many of these agencies must complete compensatory mitigation for infrastructural maintenance of their water supply systems. However the environmental review process can be simplified for these agencies because they can complete compensatory mitigation on their own properties. For example, the San Francisco Public Utility Commission (SFPUC) has a Habitat Reserve

Program (HRP) that went through CEQA concurrently with SFPUC's Water System Improvement Program (WSIP) because it will serve as mitigation for impacts under WSIP. In addition to the WSIP and HRP arrangement, SFPUC also has an EIR for on-going maintenance of the watershed that is updated every ten years. Although the set of circumstances facing SFPUC's environmental review process is unique, staff members suggested that one-for-one impact mitigation is not as effective as a watershed-scale approach to restoration. In order to maximize the environmental benefits, SFPUC staff suggested that large restoration projects can act as credit for several small projects, but they pointed out that these restoration projects are restricted to the watersheds in which impacts occur. Unfortunately, there may be better, more urgent restoration actions that cannot occur until impacts occur in those watersheds, which is not an ideal scenario for watershed management.

Like non-profit organizations, government agency staff highlighted the importance of involving regulatory agency staff early in the restoration design process. They cited NEPA as being particularly beneficial for its scoping process. However, they pointed out that different regions of the same regulatory agency can interpret the law differently and even within a particular regional office, certain individuals may interpret laws and regulations differently. Other participants commented that consultants are beneficial to agencies in preparing environmental documents, but that agency staff need to remain engaged in the process because they have a better knowledge of the project site.

3.2.1.2 Separate process for restoration

One participant suggested that certain kinds of activities at a particular acreage could potentially be sent through a more streamlined process, such as a restoration project-specific checklist that would include impacts to listed species and wetlands. For example, projects in uplands with no special status species may have potential for exemption.

3.2.1.3 Revisions to existing process

Similar to non-profit staff, some interviewees suggested changes to the approach of regulatory agencies. As an improvement to the existing process, one participant recommended that agencies take a multiple species approach because project proponents can be caught between conflicting regulatory agency priorities. For example, in order certify dams and levees, USACE requires the eradication of ground squirrels from these structures, but CDFG does not allow the extermination of ground squirrels. These situations tie the hands of agencies responsible for managing these structures. According to one participant, the lack of clarity in the regulations is largely what drives project proponents to rely on environmental consulting firms in an effort to be conservative and risk averse about potential, unforeseen impacts.

3.2.2 Regional open space districts, resource conservation districts and parks districts

Like water districts, open space and parks districts also manage extensive public lands, but their organizational mission is typically less infrastructurally intensive as a

water district. Nevertheless, open space and parks districts face a unique set of issues because their properties are often remote and spread throughout a region.

3.2.2.1 Effect and expense of the regulatory process

Similar to water district staff, participants recommended a more programmatic approach to permitting than project-by-project assessment. In some situations, mitigation would be better spent elsewhere if the project site is degraded. Participants acknowledged the difficulty of incorporating uncertainty into the regulatory process, which was also discussed by environmental consulting staff.

One participant described a restoration project that was initially permitted in the 1980's, was re-permitted recently and met exponentially greater scrutiny than twenty years prior, and has since seen a reduction in the regulatory scrutiny associated with the project. This project provides a unique look at the influence on the environmental review process on restoration projects.

Phase I of the project was included in the environmental review for a much larger set of district activities. When they began implementation of Phase II, the county grading permits were reassessed and the county felt that the project needed to go through CEQA review again. MROSD obtained a MND and permits from CDFG, USACE, and RWQCB, but they determined that there were possible impacts to CRLF and SFGS and they needed to conduct Section 7 consultation with the USFWS. As a result, they hired San Francisco Garter Snake specialists to conduct surveys, monitor construction, and install drift fences.

In comparison to the ease with which the project was previously permitted, the level of regulation for this restoration project seemed unreasonable to project managers. However, they felt there was value in the process because they learned how to design projects to minimize impacts and how to work with agencies on future projects.

Although Resource Conservation Districts (RCDs) are government entities, they act more as non-profit organizations by assisting private landowners in conducting habitat restoration and watershed management projects on their lands. RCDs often obtain funding and act as project managers in obtaining CEQA documentation and permits on behalf of project proponents. Like non-profit staff, one RCD staff member with which I spoke highlighted the advantages of CDFG's Fisheries Restoration Grant program and partnerships with other state agencies, such as Caltrans, in expediting the environmental review process.

3.2.2.2 Separate process for restoration projects

The RCD staff person with whom I spoke would ideally establish a county-wide permit streamlining process, but found that agencies often do not agree on how best to revise the process.

3.2.2.3 Revisions to existing process

One staff member recommended longer-term, more gradual mitigation and monitoring requirements that are more adapted to suit site conditions rather than one-

size-fits-all approach. Staff members recommended using monitoring data to develop more nuanced monitoring plans on future projects with regulatory agencies.

3.2.2 Federal agencies

Although federal agencies are not required to comply with CEQA, I interviewed federal agency staff to gain insight into their perspective on the regulatory process.

3.2.2.1 Effect of the regulatory process

Like other interviewees, federal agency staff spoke positively about the influence of environmental review on restoration projects. They stressed the importance of public input for projects on public lands that are completed with public funds. Many interviewees felt that environmental compliance creates a better final project design because it establishes standards, forces project proponents to think more creatively about mitigating impacts through design, to articulate the purpose and need of projects and because it provides a forum for public comment via scoping sessions, working group meetings, and alternatives analysis. One participant pointed out that the review process also provides disclosure, documentation, articulates expected outcomes and acts a test of competency to determine whether proponents have covered all of the potential impacts and have adequately surveyed the project site. NEPA, in particular, focuses early in the planning process on alternatives analysis and public involvement, which is important on public lands, particularly in regions where the public maintains strong, but adverse opinions. Participants conceded that the process can be time-

consuming and expensive. Like most local government agency staff, participants recommended tiered EISs/EIRs as a means of expediting the review process for smaller site-specific projects within a larger master plan.

3.2.2.2 Expense of the regulatory process

However, one participant mentioned how meeting mitigation requirements can actually increase the cost of implementation. For example, non-native species may need to be removed by hand due to special status species concerns, which is more time-consuming and expensive but less harmful. Participants felt that compliance can be easy if project proponents plan appropriately, which could be ameliorated by more training in project planning for staff members. Staff members pointed out that funding can be part of the problem in planning for compliance because project proponents do not want to begin the process until funding is secured. Then once funding is secured, there is not enough time for thorough preparation of compliance documentation.

3.2.2.3 Revisions to the existing process

No participants felt that restoration projects should follow a separate regulatory process. However one participant stressed the fact that NEPA/CEQA creates information gathering and sharing documents, not decision-making documents. The process is not particularly helpful in developing designs, but beneficial in getting feedback. However, this participant felt that the public involvement process can be vulnerable to special interests, which can slow down projects. This participant pointed

out that these documents have become so expensive and voluminous that they are difficult to review and difficult to translate to make them more accessible, which was not the intention of NEPA. This participant urged project proponents to go beyond the public participation requirements of NEPA to practice participatory design by incorporating public input in design through early scoping sessions and additional public meetings. This staff member urged proponents to shift away from the “design-defend” process.

3.3 Environmental Consulting Firms

Figure 19. Environmental consulting firm logos

Environmental consulting firms can offer valuable insight into the environmental review process because they complete compliance on a variety of projects for a multitude of clients.

3.3.1 Effect and expense of the regulatory process

Like non-profit and government agency staff, environmental consulting staff felt that CEQA was necessary for restoration projects in order to consider impacts to less obvious resources, such as air quality and aesthetics. Like many governmental staff members, environmental consultants recommended the use of regional and programmatic permits to expedite the regulatory process. From the perspective of a

consultant, the environmental review process for restoration projects is already much easier than the process for a housing development project, but they advised that restoration project managers need to be savvy to the fact that compliance is part of the implementation process.

In considering how the environmental review process affects restoration projects, one environmental consultant discussed the challenge of finding lead agencies for projects. This participant felt that many local jurisdictions are reluctant to partner with restoration project proponents for fear of being sued, which can increase the cost and timing of projects. This participant also suggested analyzing the intersection between General Plans and EIRs because General Plans focus more on human land uses than on the natural environment and do not consider watershed processes or the impacts of land use.

3.3.2 Separate process for restoration

One interviewee suggested that there could be different standards to which restoration projects are held in the review process than typical development projects. In particular, this participant criticized the static nature of CEQA's analysis of impacts and how that can be incompatible with adaptive management. Proponents of adaptive management projects often cannot demonstrate that impacts will be 'less than significant,' which forces them to say that the impacts will be significant due to a lack of technical certainty. Furthermore, CEQA cannot accommodate changes in plans over time to improve methods or to incorporate information that is gained. CEQA requires that project proponents quantify impacts and determine whether they are significant or

avoidable. Therefore, adaptive management does not fit well into the legal context of CEQA and poses risks for lead agencies, which tend to be very risk averse.

Like other interviewees, one participant felt there could be an exemption for small restoration projects that are not close to water, do not use large equipment, or do not involve fill, which is included in the policy memo (Appendix C)

3.3.3 Revisions to the existing process

Like government agency staff, one environmental consultant suggested that the process could be improved through monitoring to demonstrate long-term gains in order to have data to balance concerns over short-term losses or impacts. Another participant suggested that CEQA's benefit to restoration projects could be improved by presenting the environmental benefits of restoration projects, as well as reporting the adverse impacts.

An additional suggestion for improving the process was creating a timeline for the permit application process, similar to CEQA's standardized timeline, and designating certain individuals as restoration permit specialists at regulatory agencies, in order to provide expertise and consistency.

Another interviewee argued that more common sense should be exercised regarding the short-term impacts of restoration projects because they are seeking to improve environmental quality over the long-term. In this way, CEQA can defy innovative, holistic approaches to restoration and treats all projects with the same scrutiny. CEQA mitigation also requires that projects mitigate for change from the

existing condition, which in the case of restoration projects, can be man-made or damaged, such as mitigating for loss of upland in a wetland restoration.

This participant also described a phenomenon of CEQA fatigue, resulting from information bombardment. This staff member commented that the internet can work both ways in helping to provide access, but not as a perfect substitute for having a hard copy that may be easier for some individuals to read.

3.4 Regulatory agency staff

Figure 20. Regulatory agency logos

The perspective of regulatory staff who implement these regulations was extremely valuable in this analysis. I spoke with staff from the San Francisco Bay Development Commission (BCDC), the United States Army Corps of Engineers (USACE), the San Francisco and North Coast Regional Water Quality Control Board (RWQCB), the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS).

3.4.1 San Francisco Bay Development Commission (BCDC)

BCDC primarily strives to reduce, eliminate, and mitigate impacts of fill and to create maximum feasible public access. Although BCDC acknowledges that wildlife

protection and public access can be incompatible in some cases, this staff member emphasized the idea that public access creates a constituency for nature and acts as a promotion of restoration. This participant felt that CEQA could be even more transparent and could incorporate more public involvement and that project proponents should focus more on planning for review than relying on enforcement compliance.

3.4.2 United States Army Corps of Engineers (USACE)

Staff at the USACE described how the majority of permit applications received by the San Francisco Bay Region office are filed under Nationwide Permits, one of which applies to restoration activities. However, rather than easing regulation for restoration, this interviewee felt that regulation should scrutinize restoration projects more carefully for unintended consequences. For example, the participant discussed the advantage of public notice requirements of the Individual Permit, which is voluntary under the Nationwide Permit system. For each Individual Permit, USACE automatically notifies adjacent landowners when the permit is filed, which provides for a public comment period, is listed on the USACE website, and can prevent conflict with adjacent landowners in the event that unintended consequences occur.

3.4.3 San Francisco and North Coast Regional Water Quality Control Boards (RWQCB)

Staff at the RWQCB listed several important points and made intriguing suggestions for how the process could be improved. One staff member agreed that the regulatory process was designed to prevent degradation, but that the system currently

prevents restoration activities as well. However, staff pointed out that because many restoration projects are funded with public grant money, this staff member felt that there should a high level of accountability for the cost-effectiveness and the anticipated outcomes of these projects. On large restoration projects environmental review allows for a rigorous public information-sharing process. In terms of improving the process, this staff member recommended General Permits for small restoration projects, which simply require filing a Notice of Applicability with the General Permit, which typically include thresholds for numbers of acres and linear feet affected.

Like government agency staff, RWQCB staff recommended programmatic permits for water, open space and flood control districts or public works departments conducting routine maintenance, like culvert replacement and bridge footing replacement, in order to streamline the process and improve the environmental benefits of mitigation projects. Management Plans allow project proponents to anticipate BMPs and propose mitigation or restoration that is cumulative rather than piecemeal. These Master Plans can be time-consuming and costly, but are beneficial in the long-term.

Staff at the RWQCB felt that agencies try to coordinate in the San Francisco Bay Region, but explained that all agencies are dealing with budget cuts and furloughs. The RWQCB's system for distributing permit applications is organized by county, where small projects go to the lead permit writer for a county and major restoration projects go to a restoration/wetland specialist.

The San Francisco Bay regional office of the USACE offers pre-application meetings and agency meetings with applicants, which can speeds up permitting process, but there is a lack of consistency across agencies. In order to address that

problem, the State Water Resources Control Board is working to standardize the language and definitions that are used in permitting in order to streamline the process. They are obtaining input from state and federal agencies and holding public workshops. USACE, however, is encouraging the SWRCB to adopt USACE's language and definitions. Nevertheless, the SWRCB hopes to implement the new standards in 2011 and hopes that other agencies will adopt them as well.

The RWQCB also described the issue of tracking projects over time and the difficulty of managing files and project sites. However, the RWQCB has developed a partnership with the San Francisco Estuary Institute to map and share the locations of restoration projects in the Bay Area that started in 2006 and will eventually become statewide (Figure 21). USACE mentioned that they also have a system for documenting project locations, but that it is not yet available to the public.

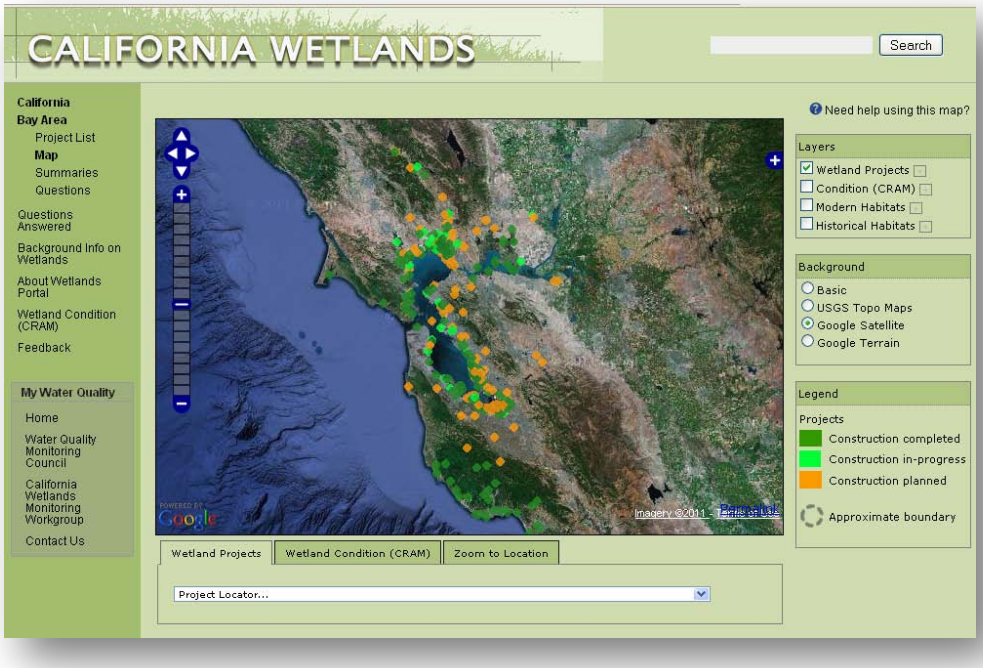


Figure 21. California wetlands portal

3.4.4 National Marine Fisheries Service (NMFS)

Staff from the NMFS agreed that the regulatory process was created to moderate the impacts of major construction projects with adverse impacts. For example, the concept of 'take' under the Endangered Species Act extends beyond mortality to address changes in behaviors, which is helpful in protecting these species from environmental impacts, but can present challenges for restoration projects that involve short-term impacts in order to achieve long-term gains. This participant acknowledged that these definitions can 'straightjacket' regulators into strictly interpreting the regulations in ways that limit restoration. This participant stressed the need for greater flexibility in the regulations, which would allow regulators to be more discretionary and flexible, but cautioned that 'just because it's a restoration project does not mean the project sponsors can be irresponsible.'

In discussing potential improvements to the regulatory process, this participant described the way in which budgets are assessed for regulatory agency branch offices. Branches receive funding based on the sheer number of permit applications they can process, without any consideration for the type of projects being permitted. Branches are often overwhelmed by environmentally damaging projects to the extent that restoration projects are pushed aside, in order to process the maximum number of permit applications. This participant acknowledged that this system is reactive because agency staff must take what comes and cannot proactively address species protection.

This staff member agreed with most interviewees that most project proponents are exasperated by the regulatory process and walk away. Some are unclear on the complexity and are unsure how to navigate the process. Some barrel through and learn.

Sustainable Conservation, a non-profit organization, attempted to streamline the federal process under their 'Partners in Restoration' program through a collaboration with the Natural Resources Conservation Service (NRCS) and local RCDs in 1998.[49] 'Partners in Restoration' simplified the regulatory process by creating a "one–stop permit program." The program exists in Monterey, Salinas, Marin and Navarro counties, and the organization continues to work to expand the program through the rest of California, but the program only addresses federal permits and issues still exist at the state level.

This staff member agreed with restoration practitioners that the time lag in permitting is problematic, which could be addressed by streamlining the internal mechanisms at the regulatory agencies. However, this staff member suggested that there is a lack of political will to address these issues and stressed the importance of educating landowners who are interested in restoration, but are unclear or exasperated by the regulatory process. Agencies could be restructured to allow staff out of the office in order to educate the public about the regulatory process and to encourage landowners who are motivated to restore habitat quality on their properties. This participant argued that agencies need an incentive, such as pressure from local newspapers, in order to bring about change. To that effect I have drafted a Letter to the Editor of the San Francisco Chronicle and the Sacramento Bee, which is included in Appendix D. Changes could also include addressing specific issues with the CDFG's fee structure for Streambed Alteration Agreements, which I described in greater detail below. In general, this NMFS staff member agreed that changes should be made to lessen the ESA burden for small restoration projects.

49 Sustainable Conservation 1998.

3.4.5 California Department of Fish and Game (CDFG)

The CDFG staff member with whom I spoke agreed that restoration projects do not 'fit the mold' of the type of project for which the regulatory process was designed, but yet they are 'thrown into the box' of permits like any other project. This staff member described the Timber Harvesting Plan review process as a potential alternative process for reviewing restoration projects, which I discussed in more detail in Chapter 5.

For potential improvements to the regulatory process, this CDFG staff member suggested the creation of a new CEQA exemption or the expansion of exemption 15333 to increase acreage allowed for restoration projects and added detail on how the acreage should be measured. Currently, there is no standard language in 15333.

Many interviewees stressed the importance of CDFG's Fisheries Restoration Grant Program (FRGP) as a means of expediting the regulatory process for restoration projects. One participant suggested that the FRGP should apply to all restoration projects that fit within certain criteria, but acknowledged that determining those criteria would be challenging. This participant also acknowledged that CDFG typically suffers from staffing issues.

On the other hand, many interviewees criticized the fee structure of CDFG's Streambed Alteration Agreements. This problem is particularly apparent in installing large wood structures as habitat enhancements for salmonids. As one regulatory agency staff member stated, project sponsors are 'paying more for permitting than they are for the structure.' Numerous groups and agencies, such as The Nature Conservancy, CalTrout, Calfire, North Coast Regional Water Quality Control Board, and

NMFS have drafted a letter to the Secretary of the Resources Agency addressing this issue of high fees.

However, the CDFG staff member argued that programs must pay for themselves. CDFG was originally funded through hunting and fishing licenses, but the agency has since evolved to conduct environmental review. A portion of the money the agency acquires from hunting and fishing licenses must be directed toward producing catchable trout. Therefore the 1600 SAA agreement fees were adjusted to increase funding for CDFG's regulatory programs. One potential solution would be the creation of a fee structure for restoration projects, which is included in the policy memo (Appendix C). Other more informal solutions rely on the flexibility and discretion of individual regulators to communicate with the state office in order to allow restoration projects to be charged by the reach, not by the piece of large wood placed in the stream.

Chapter 4. Case Study Review

In addition to the suggestions for regulatory process improvements detailed in Chapter 3, I would like to explore the case study of the Russian River Estuary Management Plan in detail. The conflict between adaptively managed restoration projects and CEQA is clearly shown in the case study of the Russian River Estuary Management Plan (RREMP) by the Sonoma County Water Agency (SCWA), for which Environmental Science Associates – Philip Williams Associates (ESA-PWA) prepared CEQA documentation. In 2008, National Marine Fisheries Service (NMFS) issued a Biological Opinion (BO) for the water supply, flood control, and channel maintenance operations conducted by SCWA, the U.S. Army Corps of Engineers (USACE), and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River watershed. This BO mandated the SCWA change its management of the Russian River estuary, among other operations.[50]

4.1 Background on the Russian River Estuary

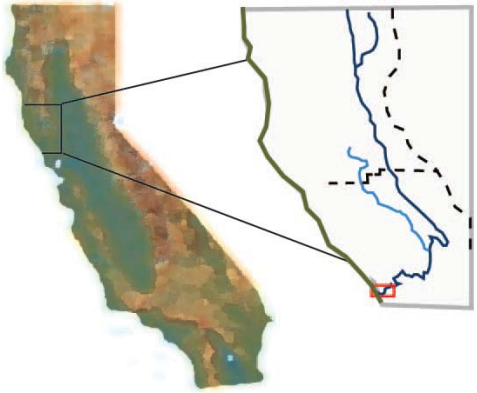


Figure 22. Regional Map

(Red box indicates the extent of Figure 23).

The Russian River drains an area of 1,485 square miles that is approximately 100 miles long and from 12 to 32 miles wide.[51] The river enters the Pacific Ocean via its estuary located just north of Jenner (Figure 22, 23). The Russian River estuary typically closes and water levels increase during the

51 RRWC 2006.

spring, summer, and fall when river flows are relatively low and ocean waves transport sand towards the estuary, rebuilding the beach that was removed by winter waves and river outflows (top, Figure 24).[52] Natural breaching events occur when estuary water surface levels exceed the sandbar height and overtop the sandbar, scouring an outlet channel (middle, Figure 24).[53] Since the 1960's, public agencies have been involved in breaching the sandbar and the SCWA became responsible for breaching activities in 1994 (bottom, Figure 24).[54] In order to prevent flooding in low-lying properties adjacent to the estuary, SCWA breached the sandbar when it closed (Figure 25). The SCWA's former management strategy is depicted in Figure 26.

Figure 23. Location map of the Russian River Estuary

52 SCWA 2011.
53 SCWA 2011.
54 SCWA 2011.

Figure 24. Photographs of the closed estuary (top), the naturally breaches estuary (middle), and the mechanically breached outlet channel (bottom)

(Adapted from the RREMP DEIR).

Figure 25. Low-lying properties along the Russian River Estuary (From RREMP DEIR)

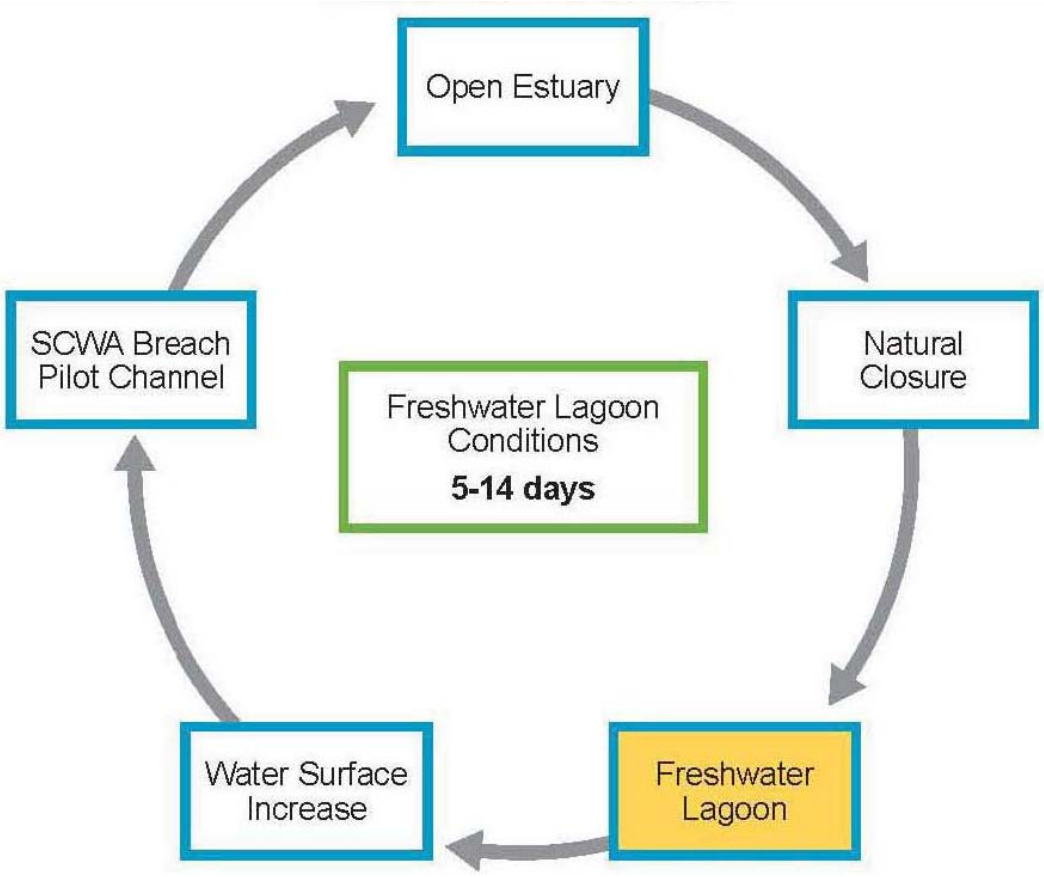


Figure 26. Former estuary management strategy (From RREMP DEIR)

The former management strategy focused primarily on preventing flooding by breaching the natural closure in order to allow wave action to erode the sandbar. This strategy allowed seawater to enter the estuary.

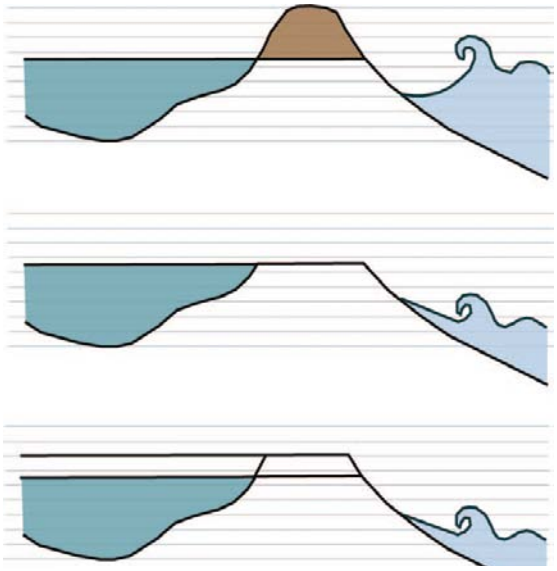


Figure 27. Diagram depicting proposed management of the outlet channel (Adapted from the RREMP DEIR)

After receiving NMFS' BO in 2008, SCWA began to prepare the Russian River Estuary Management Project (RREMP) in order to change estuary management to create a more productive environment for young steelhead.[55] In the BO, NMFS biologists found that the fresh water lagoon that is created when the sandbar closes naturally would help steelhead during summer months.[56] In order to both reduce the risk of flooding while maintaining this fresh water lagoon, SCWA worked with consultants, such as ESA-PWA, to create a plan for sculpting the sandbar in such a way to allow river water to flow out without allowing ocean water to enter (bottom, Figure 27).[57] The proposed management strategy is depicted in Figure 28. Because this RREMP will require discretionary permits from USACE, North Coast RWQCB, CDFG, and other agencies, this RREMP was required to prepare of an Environmental Impact Report (EIR) under CEQA. [58]

55 SCWA 2011.
56 NMFS 2008.
57 SCWA 2010.
58 SCWA 2011.

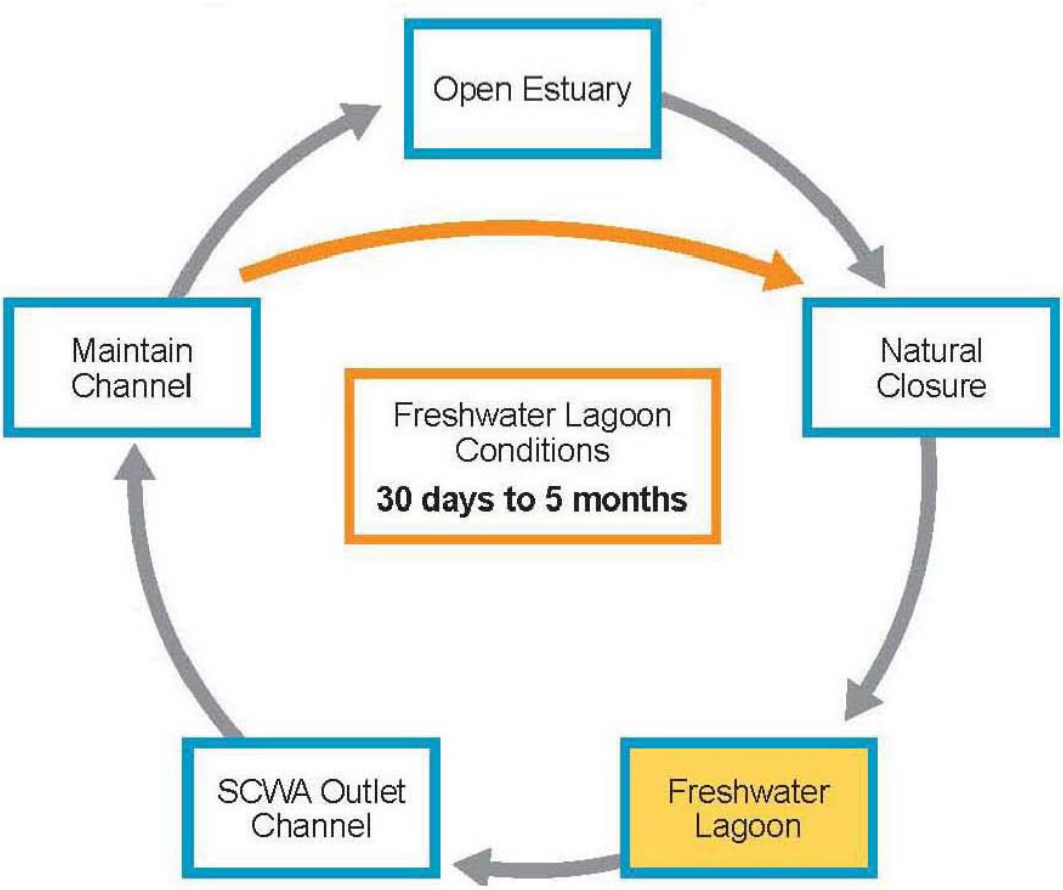


Figure 28. Proposed estuary management strategy

4.2 CEQA vs. Adaptive Management

In the process of preparing this EIR, ESA-PWA encountered challenges in quantifying impacts, determining their significance, and appropriate mitigation measures because the results of management actions were difficult to predict given the scale and complexity of the project. SCWA planned to adaptively manage the estuary in order to achieve the desired outcomes of flood management and maintaining a freshwater lagoon. Typically, adaptive management is based on a four-step process: 1) develop the management approach; 2) monitor to determine what is actually happening to the resource; 3) evaluate to determine if desired results are being achieved; and 4) if not, adjust the management approach based monitoring data in order to achieve the desired future condition.[59]

This system of adaptively managing projects has become increasingly popular as a strategy in ecological restoration.[60] However, CEQA requires that project proponents clearly define impacts, determine whether or not these impacts will be significant, and if so, commit to implementing mitigation measures to reduce these impacts to less than significant levels, which precludes the essence of adaptive management. In 'The Impact Report,' Jones and Stokes staff members detail the concept of “deferred mitigation,’ which represents one way of navigating this issue.”[61] This report clarifies the difference between deferring the description or study of mitigation options, deferring the selection of a mitigation option until the future, and deferring the actual mitigation until the future. For small restoration projects that are filing negative declarations or mitigated

59 Bass and Rivasplata 2006.
60 Johnson 1999.
61 Bass and Rivasplata 2006.

negative declarations, all of these forms of deferred mitigation are impermissible because the project proponent must be certain that there will be no significant impacts to the environment. However, for larger adaptively managed restoration projects that require EIRs, deferred mitigation can legitimately be used as a solution to defining impacts when they are uncertain or when they may change as the project progresses. As Bass and Rivasplata state, 'adaptive management is based on the idea that the mitigation measures should be adapted over time depending upon how well they are actually working to achieve the desired future condition."[62]

4.3 Potential Solutions

Bass and Rivasplata found that in a legal challenge the courts upheld the adequacy of CEQA documents for adaptively managed restoration projects that included the following "key ingredients," in order to ensure the adequacy of the proposed mitigation measures: 1) desired future condition, 2) options for reaching that condition, and 3) a commitment to achieving it.[63] SCWA and ESA-PWA addressed this issue in the DEIR by clearly stating these key facts. In Chapter 4 of the RREMP DEIR, ESA-PWA explains that 'in case of any potentially significant impacts, mitigation measures are identified that would minimize the impact to less-than-significant level, when feasible.' Unfortunately, another incompatibility between CEQA (and other regulations) and restoration is the need to mitigate for changes from the existing condition, which is often what the restoration is attempting to improve. ESA-PWA

62 Bass and Rivasplata 2006.
63 Bass and Rivasplata 2006.

explains that estuaries are complex systems that are difficult to characterize due to daily, seasonal, and interannual fluctuations, which inhibits SCWA's ability to predict the effects of the proposed RREMP to the degree typically provided under CEQA.[64] The CEQA guidelines state, "an evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have looked not for perfection, but for adequacy, completeness and a good faith effort at full disclosure."[65] As described by Bass and Rivasplata, the RREMP DEIR describes the desired future condition, required by the NMFS BO, the range of options for reaching that condition, and SCWA's commitment to achieving it.

In interviews with SCWA staff, they felt that it was too soon to tell what lessons could be learned from this experience of analyzing impacts of an adaptively managed project under CEQA. Hopefully over time, this project will serve as a precedent on which other adaptively managed restoration projects can build.

64 SCWA 2010.
65 CEQA Guidelines Section 15151

Chapter 5. Recommendations and Conclusions

In order to address the conflict between ecological restoration implementation and the regulatory process, solutions could take two forms: top-down or policy level reforms to CEQA guidelines and/or amending the language of CEQA; or bottom-up or agency level solutions that could be achieved by individuals at regulatory agencies. As described in Chapter 2, both Schlotterbeck and Russell provided examples of how to propose revisions to CEQA and NEPA, respectively.[66]

5.1 Policy level solutions

Both the CEQA guidelines and the CEQA legislation could potentially be changed to incorporate lessons learned from other states' environmental policy acts or to create an alternative regulatory process for projects that seek to improve environmental quality or benefit threatened or endangered species. However, given the current budgetary environment and polarized political rhetoric, these solutions do not seem very feasible. Nevertheless I will summarize them here.

CEQA Guidelines are the regulations that explain and interpret the law for both the public agencies required to administer CEQA and for the public.[67] As stated on California Environmental Resources Evaluation System (CERES), 'The fundamental purpose of the Guidelines is to make the CEQA process comprehensible to those who administer it, to those subject to it, and to those for whose benefit it exists.'[68] CEQA's guidelines are revised every two years through the process summarized in Figure 29.

66 Schlotterbeck 2003; Russell 2009.
67 CERES 2010.
68 CERES 2010.

CERES describes the process as follows: ‘The Governor's Office of Planning and Research prepares and develops proposed amendments to the Guidelines and transmits them to the Secretary for Resources. The Secretary for Resources is responsible for certification and adoption of the Guidelines and amendments thereto. Prior to final certification and adoption, and pursuant to the procedures in the Administrative Procedure Act, the Secretary for Resources makes the proposed language available to members of the public, provides for at least a 45 day written comment period, and provides public hearings in which to receive oral testimony on the proposals. All public comments, whether received in writing or orally at a public hearing, are considered by the Secretary in determining whether to adopt the proposed amendments prepared by the Office of Planning and Research. Once edited and enriched by the practical experience and wisdom of individual public comments, amendments are adopted and sent to the Office of Administrative Law (OAL) for review and final approval. Guidelines approved by OAL are deposited with the Secretary of State and go into immediate effect.’[69] This process represents an opportunity to revise CEQA's guidelines to provide more explicit guidance for restoration projects. Based on my interview results there are numerous ways in which CEQA could be revised to alleviate the regulatory burden or to grant special consideration to restoration projects. Specifically, amendment 15333 could be revised or expanded to more explicitly describe how five acres should be measured (Figure 30).

69 Ibid.

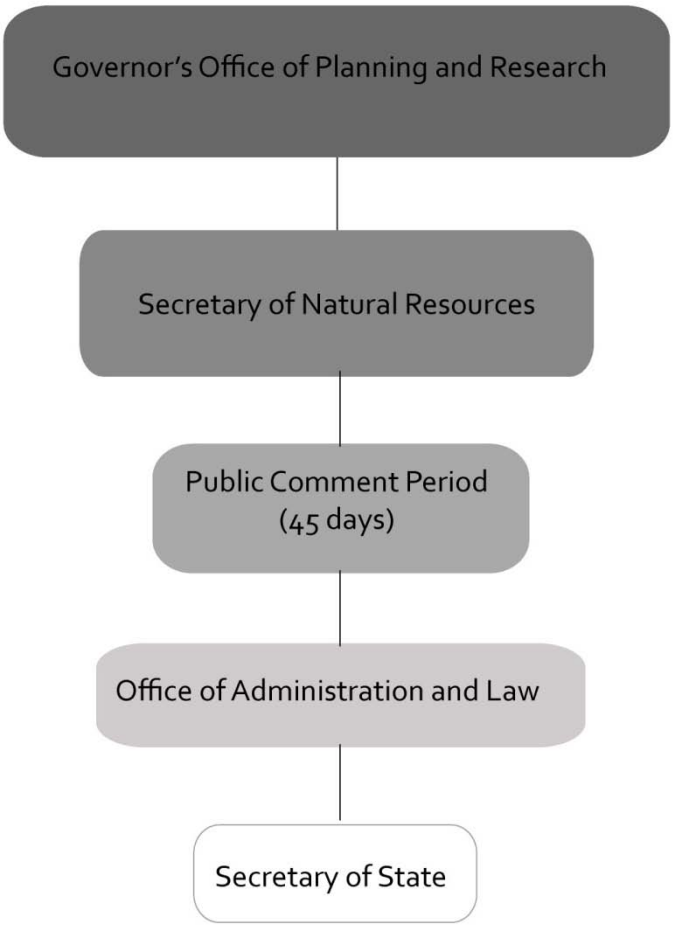


Figure 29. Process for CEQA Guidelines Revision

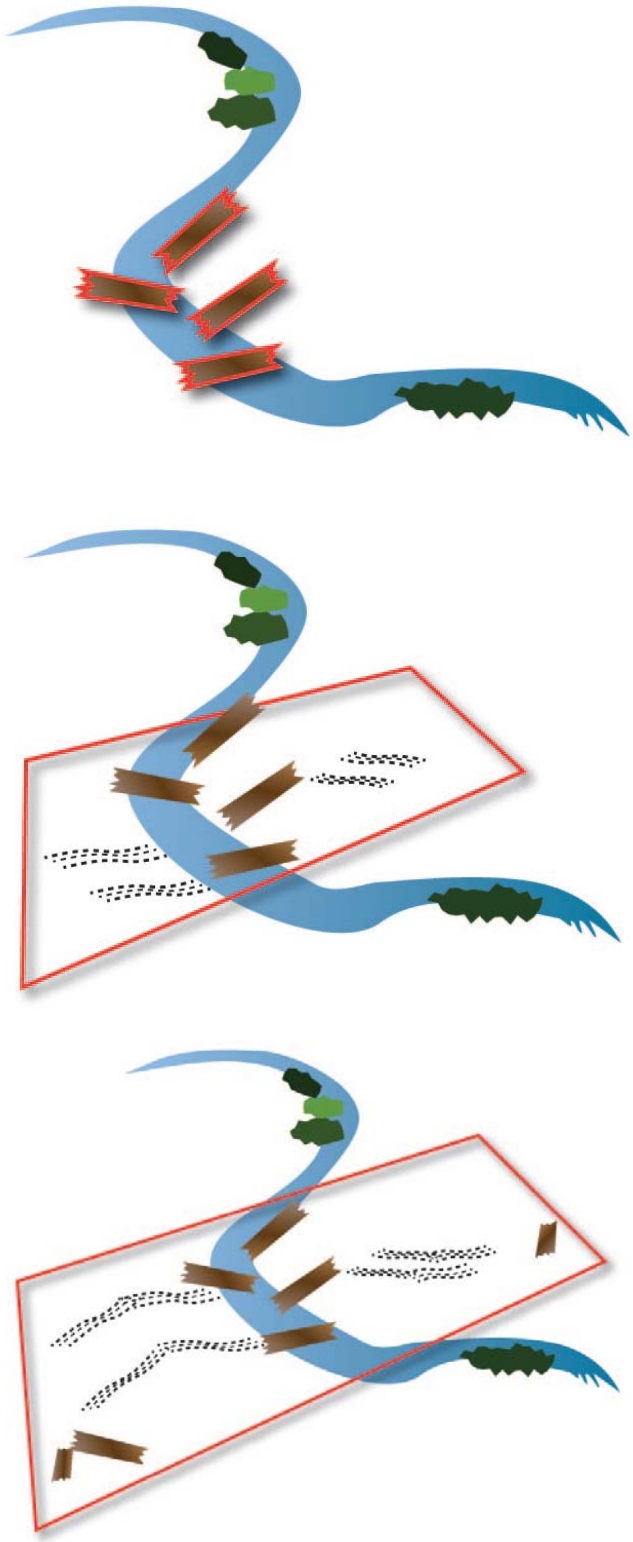


Figure 30. Under CEQA Amendment 15333 restoration project area could be measured as solely the area of the intervention (top), as the area disturbed in its installation (middle) or as the total feasible area of disturbance

CEQA could also incorporate a review board, as occurs under the Timber Harvest Plan review process, with staff from various regulatory agencies that conduct site visits as necessary. CEQA could incorporate lessons learned from other states' environmental policy acts, such as Washington and New York. For example, CEQA could be revised to more specifically define 'significance' of impacts. Rather than giving discretion to the courts, California could also create or designate an agency that has the authority to determine whether project proponents have adequately satisfied the requirements of CEQA, which would benefit all participants in CEQA, including proponents of small restoration projects, because lead agencies would feel less pressure to avoid litigation by labeling uncertain impacts as significant. While these suggestions might be supported by a handful of legislators interested in restoration, this issue may not appeal to the broader legislative community and may not be likely to pass, particularly not at this time of budgetary and economic hardship. The legislative process for taking ideas such as these and turning them into law is shown in Figure 31. As described in Chapter 2, numerous bills that address restoration and the regulatory process have been introduced recently, but are typically defeated in committee. Nevertheless, I have included these policy level suggestions in a policy memorandum included in Appendix C.

Although it may not be feasible at this time due to budgetary constraints, a long-term solution might be the creation of a new act altogether. Rather than sending restoration projects through the CEQA environmental review process, the state legislature could craft a California Ecosystem Restoration Act that could describe an alternative process that specifically addresses the potential short-term environmental

impacts of ecological restoration projects. This act could also create a separate regulatory agency that would review ecological restoration project applications. These suggestions for policy level reform are summarized in Figure 32 below.

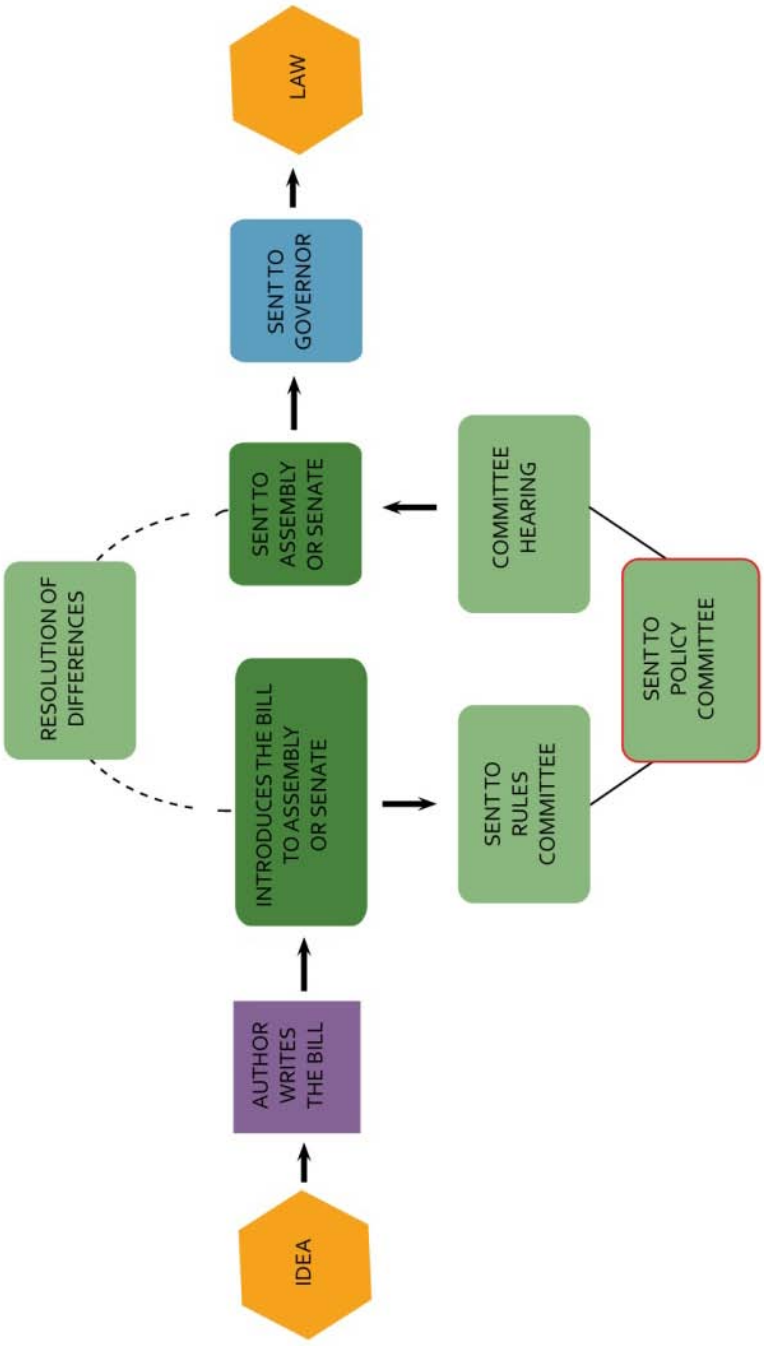


Figure 31. California's legislative process

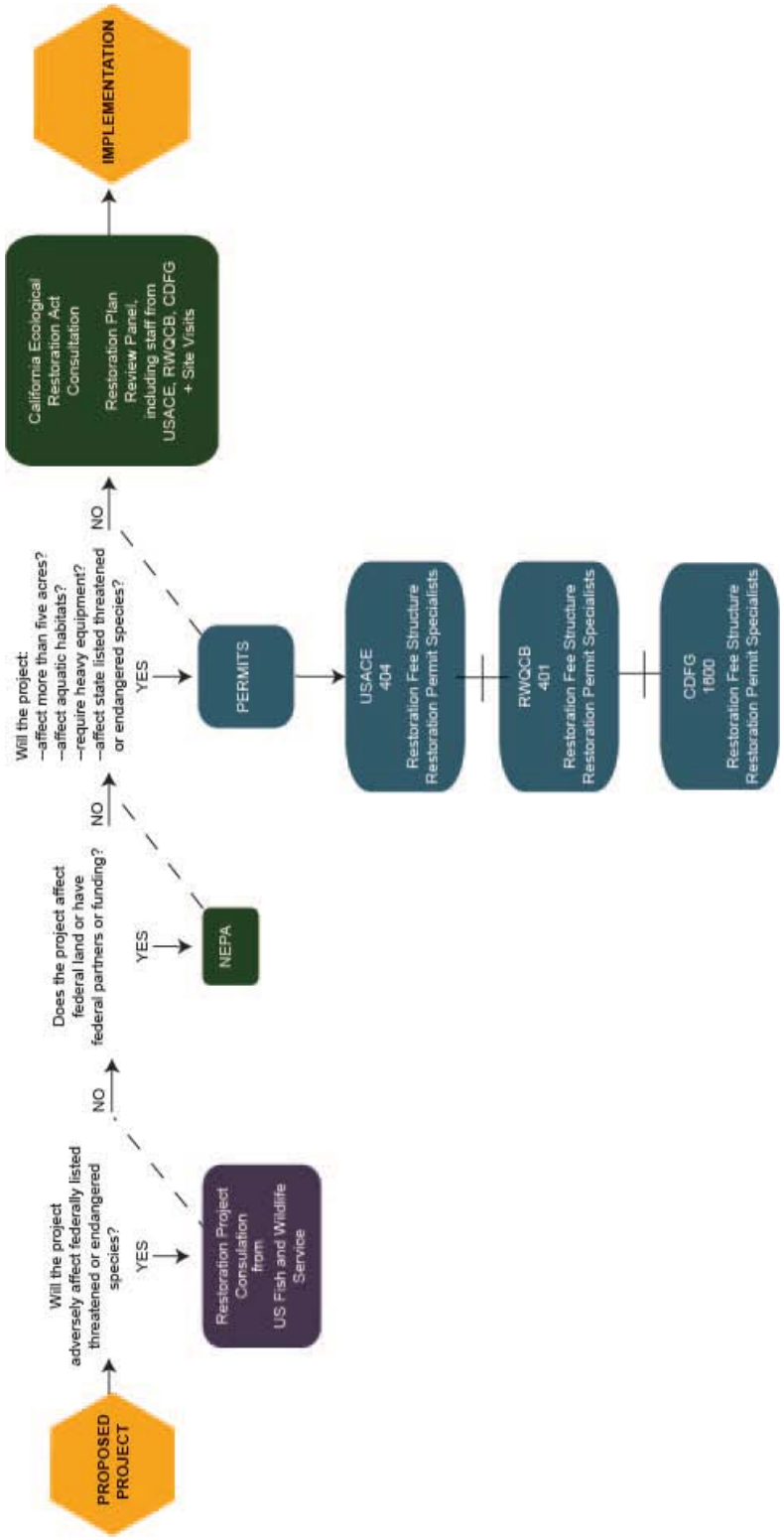


Figure 32. Suggested reforms to the regulatory process for restoration projects

5.2 Administrative solutions at the agency level

My interviews with regulatory agency staff also revealed numerous opportunities for agency level or bottom-up solutions to address the problem of regulatory review for restoration projects that might be more feasible in the short-term than top-down policy level solutions. Many of these suggestions pertain to permitting and the related agencies rather than CEQA. Because CEQA is self-executing and is not administered by any one agency, it would be difficult to describe agency level solutions. Some of the suggestions made by interviewees included standardizing permitting language, revising the permitting fee schedules for restoration projects, expanding the use of programmatic permits, revising the funding system for regulatory agencies, and expanding programs, such as the California Wetlands Portal, as educational resources.

5.2.1 Addressing issues of clarity, consistency, and cost in permitting

SWRCB has initiated a process to standardize the language used on CWA permits for both Section 401 Water Quality Certifications and Section 404 Department of Army Dredge/Fill permits. Another effort was made in the nine county San Francisco Bay Area to 'streamline' permitting through the creation of the Joint Aquatic Resource Permit Application (JARPA). However JARPA simply saves project sponsors the trouble of collecting all the permit applications and does not significantly reduce the regulatory burden. Standardizing permitting language would improve the clarity and consistency of environmental regulations.

NMFS and RWQCB are working with CDFG to revise their Streambed Alteration Agreement fee schedules (included in Appendix B).

On the other hand, these agencies could also examine their own fee schedules to determine whether they are overly burdensome for restoration projects. For example, the RWQCB charges $640 for restoration projects to receive CWA 401 permit Water Quality Certifications.

In some regions of California, agencies have created programmatic permits for restoration projects, such as the programmatic permit regarding Coho salmon restoration projects for the North Coast region. These programmatic permits allow project sponsors interested in conducting restoration to improve habitat for Coho salmon to apply for 'Consistency Determinations,' which can be much simpler and less time-consuming that conducting a full Biological Assessment for impacts to that species. Agencies could consider expanding the use of programmatic permits to encourage restoration projects for target species and to alleviate the regulatory burden.

5.2.2 Expand the Fisheries Restoration Grant Program

The Fisheries Restoration Grant Program (FRGP) was established in 1981 in response to rapidly declining populations and deteriorating fish habitat in California and has invested over $180 million to support projects to implement fish habitat restoration throughout coastal California.[70] Numerous interviewees cited this program as a way for restoration projects to expedite the regulatory process. Other agencies, such as the BCDC, RWQCB, USACE, NMFS, could implement similar programs through which restoration projects could receive implementation funding and regulatory review assistance.

70 CDFG 2011.

5.2.3 Revise the funding / permit distribution system for regulatory agencies

As described in Chapter 3, regulatory agencies' budgets are assessed based on the total number of permit applications processed, regardless of the impacts or objectives of the project. The accounting system could be revised to favor or prioritize the processing of permit applications for restoration projects. Furthermore, regulatory agencies could assign particular staff as 'Restoration Permit Specialists' for a particular region, rather than distribute permit applications solely by region.

5.2.4 Expand existing programs as educational resources

In order to improve the educational value of CEQA documentation, a forum could be established through which restoration project managers experienced in CEQA documentation could provide guidance for managers or private landowners who are less familiar with the process. As described by staff at the RWQCB, the California Wetlands Portal serves as a useful tool in educating individuals interested in restoration efforts around the Bay Area and also functions administratively to organize files for agency staff. Other agencies, such as the Governor's Office of Planning and Research, USACE, CDFG, and NMFS, could consider joining this information-sharing program to expand the educational value of the regulatory process.

5.3 Opportunities for future research

This research potentially could have positive implications for other fields in urban planning and landscape architecture, such as infill development, neighborhood park planning, and urban storm water management. Future studies could examine similar efforts in other countries, such as in Japan, where they have created an ‘everyday EIR’ for routine projects. Future studies could examine in greater depth the costs and benefits of compliance and restoration projects, in attempt to monetize ecosystem services restored.

5.4 Conclusion

The regulatory review process is beneficial and necessary. However, it can be unnecessarily time-consuming and expensive. Perhaps over time, the process could be amended to more effectively identify and mitigate for short-term impacts while reducing the burden and creating incentives for individuals and organizations who are motivated to improve environmental quality on their properties through ecological restoration.

References Cited

Adler, Robert W., Jessica C. Landman, Diane M. Cameron. 1993. The Clean Water Act 20 years later. Island Press.

Bass, Ron and Terry Rivasplata. 2006. “Deferred Mitigation” under CEQA: A fresh look at an old issue. The Impact Report, Jones and Stokes. January 2006. Accessed at: http://www.icfi.com/docs/Deferred-mitigation.pdf. Accessed on: March 1, 2011.

Bernhardt, Emily S., Elizabeth B. Sudduth, Margaret A. Palmer, J. David Allan, Judy L. Meyer, Gretchen Alexander, Jennifer Follstad-Shah, Brooke Hassett, Robin Jenkinson, Rebecca Lave, Jeanne Rumps, Laura Pagano. 2007. Restoring Rivers One Reach at a Time. Restoration Ecology: Vol. 15, Issue 3, pages 482–493, September 2007.

Black, Harvey. 2004. Imperfect Protection: NEPA at 35 Years. Environmental Health Perspectives, Vol. 112.

Bovenberg, A. Lans, Lawrence H. Goulder and Derek J. Gurney. 2005. Efficiency Costs of Meeting Industry-Distributional Constraints Under Environmental Permits and Taxes. The RAND Journal of Economics*:* Vol. 36, No. 4 (Winter, 2005), pp. 951-971

Breaux, A., & Serefiddin, F. 1999. Validity of performance criteria and a tentative model for regulatory use in compensatory wetland mitigation permitting. Environmental Management, 24(3), 327-336.

California Code of Regulations (CCR). Title 14, Chapter 3: Guidelines for Implementation of the California Environmental Quality Act, Article 19: Categorical Exemptions, Section 15333: Small Habitat Restoration Projects.

California Department of Fish and Game (CDFG). 2011. Fisheries Restoration Grant Program: Program Overview. Accessed at: http://www.dfg.ca.gov/fish/ Administration/ Grants/FRGP/index.asp. Accessed on: March 12, 2011.

California Public Resources Code (CPRC). 1995. CRPC 21087.

California Environmental Resources Evaluation System (CERES). Frequently Asked Questions About CEQA. http://ceres.ca.gov/ceqa/more/faq.html. Accessed on October 24, 2010.

Cheever, Federico. 1996. Road to Recovery: A New Way of Thinking about the Endangered Species Act. 23 Ecology Law Quarterly 1.

Courtney, Kevin. 2010. “Given up for dead, lost wetlands springing back to life in south county.” Napa Valley Register, September 6, 2010.

Cole, Christopher A. 1992. Species Conservation in the United States: The Ultimate Failure of the Endangered Species Act and Other Land Use Laws. 72 B.U. L. Rev. 343.

Doremus, Holly. 1997.Listing Decisions under the Endangered Species Act: Why better science isn't always better policy. Washington University Law Quarterly: Vol. 75, pages 1029.

Doremus, Holly. 1998. Preserving Citizen Participation in the Era of Reinvention: The Endangered Species Act Example. 25 Ecology Law Quarterly 707 (1998-1999).

Doremus, Holly. 2001. Adaptive Management, the Endangered Species Act, and the Institutional Challenges of New Age Environmental Protection. 41 Washburn Law Journal 50 (2001-2002).

Egan, Dave, and Evelyn Howell, eds. 2001. The Historical Ecology Handbook: A Restorationist's Guide to Reference Ecosystems. Island Press.

Environmental Protection Agency (EPA). 2010a. Laws and Regulations – History of the Clean Water Act. Accessed at: http://www.epa.gov/lawsregs/laws/cwahistory.html. October 24, 2010.

Environmental Protection Agency (EPA). 2010b. Laws and Regulations – Summary of the Clean Air Act. Accessed at: http://www.epa.gov/lawsregs/laws/caa.html. October 24, 2010.

Environmental Protection Agency (EPA). 2010c. Laws and Regulations – NEPA: Past, Present, and Future. Accessed at: http://www.epa.gov/history/topics/nepa/01.htm. October 25, 2010.

Federal Register. 2002. Final Revisions to the Clean Water Act Regulatory Definitions of ‘‘Fill Material’’ and ‘‘Discharge of Fill Material’’ Vol. 67, No. 90, Thursday, May 9, 2002, Rules and Regulations, page 31130.

Follstad et. al. 2007. River and Riparian Restoration in the Southwest: Results of the National River Restoration Science Synthesis Project. Restoration Ecology, Volume 15, Issue 3, pages 550–562, September 2007

Gardner M. Brown Jr. and Jason F. Shogren. 1998. Economics of the Endangered Species Act. The Journal of Economic Perspectives. Vol. 12, No. 3 (Summer, 1998), pp. 3-20.

Goldstein, B. E. 2010. The weakness of tight ties: Why scientists almost destroyed the Coachella valley multispecies habitat conservation plan in order to save it. Environmental Management, 46(2), 268-284.

Gore, J. A. 1985. Restoration of Rivers and Streams. Butterworth Publishers, Stoneham, MA.

Houck, Oliver A. 1993. Endangered Species Act and Its Implementation by the U.S. Departments of Interior and Commerce. 64 University of Colorado Law Review 277.

Houck, Oliver A. 1995. Reflections on the Endangered Species Act. Environmental Law: Vol. 25, pages 689-692.

Houck, Oliver A. and Rolland, Michael. 1995. Federalism in Wetlands Regulation: A Consideration of Delegation of Clean Water Act Section 404 and Related Programs to the States. 54 Maryland. Law Review 1242.

Huffman, Jared. 2010. Proposed legislation. Accessed at: http://democrats.assembly.ca.gov/members/a06/leg.aspx#4. November 1, 2010.

Hymon, Steve. 2007. "L.A. will take its river to a new level; Proposed $2-billion makeover of the ugly concrete waterway calls for a string of parks, housing and offices." The Los Angeles Times, February 2, 2007.

Johnson, B. L. 1999. Introduction to the special feature: adaptive management – scientifically sound, socially challenged? Conservation Ecology 3(1): 10.

Jones and Stokes Associates. 1987. Sliding Toward Extinction: The State of California's Natural Heritage, 1987. Prepared at the request of the California Senate Committee on Natural Resources and Wildlife. Commissioned by the California Nature Conservancy, San Francisco, CA. Prepared by Jones and Stokes Associates, Sacramento, CA. November 1987.

Jordan, W.R. III, M.E. Gilpin, and J.D. Ober, Eds. 1987. Restoration Ecology: A Synthetic Approach to Ecological Research. Cambridge University Press, New York.

Kamel, Alexandra. 2010. Size, Biology, and Culture: Persistence as the Indicator of the Significance of Portions of Species' Historical Range under the Endangered Species Act. Ecology Law Quarterly: Volume 37, Number 2.

Kilbourne, James C. 1991. Endangered Species Act under the Microscope: A Close-up Look from a Litigator's Perspective. 21 Environmental Law 499.

Kondolf, G. M. et. al. 2007. Two Decades of River Restoration in California: What Can We Learn? Restoration Ecology: Volume 15, Issue 3, pages 516–523, September 2007.

Moreno, Robert. 2010. Filling the Regulatory Gap: A Proposal for Restructuring the Clean Water Act's Two-Permit System. Ecology Law Quarterly, Volume 37, Number 2.

National Marine Fisheries Service (NMFS). 2008. Endangered Species Act Section 7 Consultation Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River watershed. Issued September 24, 2008. Accessed at: http://www.scwa.ca.gov/ files/docs/projects/rrifr/Signed-RussianRiverFinal BO9-24-08.pdf. Accessed on: March 1, 2011.

National Research Council (NRC). 1992. Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy. Committee on Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy.

Natural Resources Conservation Services (NRCS). "Dam Removal in Napa County Helps Restore Fish Habitat & Riparian Corridor Health." http://www.ca.nrcs.usda.gov/ news/dry_creek.html. Accessed on October 24, 2010.

Normile, Dennis. A 'Green' Blessing Raises Questions. Science: Volume 327, no. 5973. 26 March 2010. p. 1570.

Ornduff, Robert, Phyllis Faber, and Todd Keeler-Wolf. 2003. Introduction to California Plant Life. University of California Press, 2003.

Planning and Conservation League (PCL). 2010. Legislation – Environmental Bills. Accessed at: http://www.pcl.org/legislation/environmentalbills.html. November 1, 2010.

Rabe, Barry G. 1995. Integrated Environmental Permitting: Experience and Innovation at the State Level. *State & Local Government Review:* Vol. 27, No. 3 (Autumn, 1995), pp. 209-220.

Redmond, A. M. 2000. Dredge and fill regulatory constraints in meeting the ecological goals of restoration projects. Ecological Engineering, 15(3-4), 181-189.

Rohlf, DJ. 1989. The Endangered Species Act: a guide to its protections and implementation. Stanford Environmental Law Society.

Rohlf, Daniel. 1991. Six Biological Reasons Why the Endangered Species Act Doesn't Work—And What to Do About It. Conservation Biology. Volume 5, Issue 3, pages 273–282, September 1991.

Ruhl, J. B. 1998. How to Kill Endangered Species, Legally: The Nuts and Bolts of Endangered Species Act HCP Permits for Real Estate Development. 5 Environmental. Law. 345

Rumps, Jeanne M., Stephen L. Katz, Katie Barnas, Mark D. Morehead, Robin Jenkinson, Stephen R. Clayton and Peter Goodwin. 2007. Stream Restoration in the Pacific Northwest: Analysis of Interviews with Project Managers. Restoration Ecology. Volume 15, Issue 3, pages 506–515.

Russell, I. 2009. Streamlining NEPA to combat global climate change: Heresy or necessity? Environmental Law (Portland), 39(4), 1049-1072.

Russian River Watershed Council (RRWC). 2006. Watershed Background > Hydrology. Accessed at: http://www.russianriverwatershed.net/Content/10065/Hydrology.html. Accessed on: March 2, 2011.

Schlotterbeck, J. 2003. Preserving biological diversity with wildlife corridors: Amending the guidelines to the California environmental quality act. Ecology Law Quarterly, 30(4), 955-990.

Schroeder, Christopher H. 1998. Rational Choice Versus Republican Moment Explanations for Environmental Laws. Duke Environmental Law & Policy: Vol. 9, p. 29.

Seavy, Nathaniel E.; Howell, Christine A. 2010. How can we improve information delivery to support conservation and restoration decisions? Biodiversity and Conservation 19(5), page 1261-1267.

Society of Ecological Restoration (SER). 2004. International Primer on Ecological Restoration Society for Ecological Restoration. International Science & Policy Working Group. Version 2, October, 2004.

Sonoma County Water Agency (SCWA). 2010. Russian River Estuary Management Draft Environmental Impact Report. Released December 2010. Accessible at: http://www.scwa.ca.gov/estuary-eir/.

Sonoma County Water Agency (SCWA). 2011. Russian River Estuary Management Project: About the Russian River Estuary. Accessed at: http://www.scwa.ca.gov/russian-river-estuary/. Accessed on March 1, 2011.

South Bay Salt Pond Restoration Project (SBSPRP). Frequently Asked Questions (FAQs). http://www.southbayrestoration.org/FAQ.html. Accessed October 24, 2010.

Sustainable Conservation. 1998. Partners in Restoration program. Available at: http://www.suscon.org/pir/index.php. Accessed on: March 10, 2011.

Tear, TH et. al. 1993. Status and prospects for success of the endangered species act: A look at recovery plans. Science: Vol. 262, no. 5136, p. 976.

United States Fish and Wildlife Service (USFWS). 2010. Sacramento Fish and Wildlife Office: Biological Opinions. Accessed at: http://www.fws.gov/sacramento /es/biological_opinions.htm. Accessed on: October 25, 2010.

Varner, Sean Stuart. 1992. California Environmental Quality Act (CEQA) after Two Decades: Relevant Problems and Ideas for Necessary Reform. Pepperdine Law Review: Vol. 19, page 1447.

William L. Andreen and Shana Jones. 2008. The Clean Water Act: A Blueprint for Reform. Center for Progressive Reform, available at http://progressivereform.org /articles/ CW_Blueprint_802.pdf.

Yaffee, Steven Lewis. 1982. Prohibitive Policy: Implementing the Federal Endangered Species Act. Cambridge, MA: MIT Press, 239 pp.

Zygmunt J.B. Plater. 1997. The Embattled Social Utilities of the Endangered Species Act - a Noah Presumption and Caution against Putting Gasmasks on the Canaries in the Coalmine. Environmental Law, Vol. 27.

Personal Communication
All transcripts are on file with the author.

Alling, Curtis. Ascent Environmental. Phone interview. December 14, 2010.

Ambrose, Jonathan. National Oceanic and Atmospheric Administration. January 10, 2010.

Arnold, Carol. Contra Costa County RCD. Phone interview. December 22, 2010.

Aviles, Brian. Golden Gate National Recreation Area. Phone interview. November 19, 2010.

Becker, Gordon. Center for Ecosystem Management and Research. In-person interview. October 20, 2010.

Bennett, Ande. Bay Conservation and Development Commission. Phone interview. November 30, 2010.

Cantwell, Karen. National Park Service. Phone interview. November 24, 2010.

Carah, Jennifer. The Nature Conservancy. Phone interview. January 5, 2011.

Diggory, Zooey. Stillwater Sciences. Phone interview. November 19, 2010.

Foster, Keenan. Sonoma County Water Agency. Phone Interview. January 10, 2011.

Hall, Jessica. Restoration Design Group. Phone interview. November 19, 2010.

Hayden, Maya. Stillwater Sciences. Phone interview. November 30, 2010.

Hicks, Jane. United States Army Corps of Engineers. Phone interview. December 17, 2010.

Huning, Beth. San Francisco Bay Joint Venture. Phone interview. December 16, 2010.

Katzev, David. East Bay Municipal Utilities District. In-person interview. December 14, 2010.

Klein, Janet. Marin Municipal Water District. Phone interview. November 29, 2010.

Lee, Shin-Roei. Regional Water Quality Control Board. Phone interview. December 2, 2010.

Macedo, Rick. California Department of Fish and Game. Phone interview. January 10,

2011.

Marcus, Laurel. California Land Stewardship Institute. Phone Interview. December 1, 2010.

Martini-Lamb, Jessica. Sonoma County Water Agency. Phone interview. January 14, 2011.

Morganstern, Roberta. United States Army Corps of Engineers. Phone Interview. January 28, 2011.

O'Toole, Jim. Environmental Science Associates (ESA-PWA). Phone interview. December
10, 2010.

Roessler, Cindy. Midpeninsula Regional Open Space District. Phone interview. December 16, 2010.

Schectel, Lori and Casey Sondgeroth. San Francisco Public Utilities Commission. Phone interview. December 1, 2010.

Soderstrom, Elizabeth. American Rivers. Phone Interview. November 19, 2010.

Stone, Allison. Presidio Trust. Phone interview. November 29, 2010.

Wallace, Ben. Solano Land Trust. Phone interview. December 16, 2010.

Wallenstein, Susie. East Bay Municipal Utilities District. In-person interview. December 14, 2010.

Warberdam, Jonathon. North Coast Regional Water Quality Control Board. Phone interview. January 24, 2011.

Wickham, Sue. Solano Land Trust. Phone Interview. November 23, 2010.

Appendices

Appendix A. Permit applications
Appendix B. Interview schedules
Appendix C. Policy Memo for CEQA revision
Appendix D. Letter to the Editor of the San Francisco Chronicle and Sacramento Bee

Appendix A. Permit Applications

Linda S. Adams
Secretary for Environmental Protection

State Water Resources Control Board

Division of Water Quality, Water Quality Certification Unit

1001 I Street, 15th Floor, Sacramento, CA 95814

Arnold Schwarzenegger
Governor

CLEAN WATER ACT §401 WATER QUALITY CERTIFICATION APPLICATION FORM

(Use only for multi-regional projects, otherwise use the appropriate Regional Board application form)

1. APPLICANT/AGENT INFORMATION

a) Applicant:	b) Agent[1]:
Address:	Address:
Phone No.	Phone No.
Fax No.	Fax No.
E-mail Address:	E-mail Address:
Have you previously contacted the Regional Board staff regarding this project? If 'yes' provide information on date, person, and brief summary of subject matter.	

STATEMENT OF AUTHORIZATION

I hereby authorize _____ to act in my behalf as my agent in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.

_____ _____

Applicant's Signature Date

[1]Complete only if applicable

2. PROJECT DESCRIPTION

a) Project Title:
b) Project Purpose:
c) Project Activities:
d) Proposed Schedule (start-up, duration, and completion dates):

3. FEDERAL LICENSES/PERMITS

a) Federal Agency(ies)/File Number(s):

U.S. Army Corps of Engineers_____ Other_____

File No.(s) (if known)_____

b) Permit Type(s) (please provide permit number(s) if known):

Nationwide Permit No.(s)_____ Regional General Permit No.(s) _____

Individual Permit____ Other_____

c) Does the project require any Federal Application(s), Notification(s) or Correspondence?

Yes _____ (attach copy[ies]) No _____ (attach detailed explanation)

d) Provide copies of the license/permit/application.

4. OTHER LICENSES/PERMITS/AGREEMENTS

a) Please list all other required, including local regulatory approvals (submit final or draft copy if available). Include information on any De-watering, NPDES, and Storm Water permits.

Agency	License/Permit/Agreement	Permit No.	Approval Date

b) Does the project require a Federal Energy Regulatory Commission (FERC) license or amendment to a FERC license?

No_____ Yes_____ (attach application copy)

5. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Indicate CEQA Document (submit final or draft copy if available*):

Type of CEQA Document	Date of filing of Notice of Exemption/ Preparation and Name of Lead Agency
Statutory Exemption/Class Title	
Categorical Exemption/Class Title	
Negative Declaration	
Mitigated Negative Declaration	
Environmental Impact Report	

Note: Ample time must be provided to the certifying agency to properly review a final copy of valid CEQA documentation before certification can occur.

6. APPLICATION FEE

Provide an initial deposit of $640.00 for the application. Please write a check made out to the State Water Resources Control Board.
Is a check enclosed? Yes _____ No. _____ Check Number _____ Amount $

7. PROJECT SITE DESCRIPTION – GENERAL (Include areas outside of US waters)

a) Project Location (attach map of suitable quality and detail):
City or Area_____ County
Longitude/Latitude _____

b) Total Project Size: _____acres _____ linear feet (if appropriate)

c) Site description of the entire project area (including areas outside of jurisdictional water of the US):

8. WATER BODY IMPACT

a) **Water Body Name(s)**[2]:
Clearly indicate on a published map of suitable detail, quality, and scale (1:24K) to allow the certifying agency to easily identify the area(s) and water body(ies) receiving any discharge.

b) **Fill and Excavation:** Indicate in ACRES and/or LINEAR FEET the proposed waters to be impacted, and identify the impacts(s) as permanent and/or temporary for each water body type listed below:

Water Body Type	Permanent Impact		Temporary Impact	
	Acres	Linear Feet	Acres	Linear Feet
Wetland[3]				
Streambed				
Lake/Reservoir				
Ocean/Estuary/Bay				
Riparian				
Isolated Waters[4]				

Provide the name, title, and affiliation of person that carried out wetland delineation.

c) **Dredging**: Volume (cubic yards) of dredged material to be discharged in waters of the United States.

e) **SWANCC**: Is the water body isolated (SWANCC-related)? Yes _____ No _____

d) Provide information on the Q_2, Q_{10}, Q_{100} for pre- and post-project implementation.

e) Indicate type(s) of material proposed to be discharged in waters of the United States:

[2]Both US Army Corps of Engineer's jurisdictional- and non-jurisdictional or isolated waters (SWANCC).
[3]Per US Army Corps of Engineer's wetland delineation protocol.
[4]SWANCC-related (isolated) water body.

9. COMPENSATORY MITIGATION (Please complete attached Mitigation Checklist)

a) Is compensatory mitigation proposed? Yes _____ No _____

b) Indicate in ACRES and LINEAR FEET (where appropriate) the total quantity of **waters of the United States** proposed to be Created, Restored and/or Enhanced for purposes of providing Compensatory Mitigation:

Water Body Type	Created	Restored	Enhanced	Set Aside for Protection
Wetland				
Streambed				
Lake/Reservoir				
Ocean/Estuary/Bay				
Riparian				
Isolated Waters				

c) If contributing to a Mitigation Bank provide the following:

Mitigation Bank Name:
Name of Mitigation Bank Operator:
Office Address of Operator/Phone Number:
Mitigation Bank Location (Latitude/Longitude, County, and City):
Mitigation Bank Water Body Type(s):
Mitigation Area (acres or linear feet) and cost (dollar):

d) Provide/attach a map with suitable detail, quality, and scale (1:24K) that will easily provide information as to the location(s) and water body(ies) of the mitigation area.

10. THREATENED/ENDANGERED SPECIES

a) Does the project require coordination with the US Fish and Wildlife Service or National Marine Fisheries Service under the Federal Endangered Species Act?

Yes _____ (provide copies of Biological Report) No _____ (provide basis of determination)

b) Does the project require coordination with the State of California Department of Fish and Game under the California Endangered Species Act?

Yes _____ (provide copies of Biological Report) No _____ (provide basis of determination)

11. OTHER ACTIONS/BEST MANAGEMENT PRACTICES (BMPs)

Briefly describe other actions/BMPs to be implemented to Avoid and/or Minimize impacts to waters of the United States, including preservation of habitats, erosion control measures, project scheduling, flow diversions, etc.

12. PAST/FUTURE PROPOSALS BY THE APPLICANT

Briefly list/describe any projects carried out in the last 5 years or planned for implementation in the next 5 years that are in any way related to the proposed activity or may impact the same receiving body of water. Include estimated adverse impacts.

Applicant's Signature (or Agent) Date

For further information please email:
http://www.swrcb.ca.gov/water_issues/programs/cwa401/docs/staffdirectory.pdf

Appendix A-2. Permit Applications – CWA Section 404 Department of the Army

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 EXPIRES: 31 August 2012

Public reporting burden for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This Information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME:	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
First - Middle - Last –	First - Middle - Last –
Company –	Company –
E-mail Address –	E-mail Address –
6. APPLICANT'S ADDRESS. Address -	9. AGENT'S ADDRESS Address -
City – State – Zip – Country –	City – State – Zip – Country –
7. APPLICANT'S PHONE NOs. W/AREA CODE.	10. AGENT'S PHONE NOs. W/AREA CODE
a. Residence b. Business c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
	Address
15. LOCATION OF PROJECT	
Latitude: °N Longitude: °W	City - State – Zip -

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section – Township – Range –

17. DIRECTIONS TO THE SITE

ENG FORM 4345, SEPT 2009 EDITION OF OCT 2004 IS OBSOLETE Proponent: CECW-OR

18. Nature of Activity (Description of project, include all features)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

Or

Liner Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? Yes ☐ No ☐ IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Address –

City – State – Zip –

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

ENG FORM 4345, SEPT 2009

Appendix A-3. Permit Applications – CDFG Notification of Streambed Alteration

FOR DEPARTMENT USE ONLY				
Date Received	*Amount Received*	*Amount Due*	*Date Complete*	*Notification No.*
	$	$		

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name			
Business/Agency			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

2. CONTACT PERSON (*Complete only if different from applicant*)

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name				
B. Agreement Term Requested	☐ Regular (*5 years or less*) ☐ Long-term (*greater than 5 years*)			
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (*year*)	Ending (*year*)	Start Date (*month/day*)	End Date (*month/day*)	

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.		
A.	☐ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* _____
C.	☐ Timber Harvesting (*Attachment B*)	THP *Number:* _____
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* _____
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ DFG Fisheries Restoration Grant Program (FRGP)	*FRGP Contract Number:* _____
G.	☐ Master	
H.	☐ Master Timber Harvesting	

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: The Department may not process this notification until the correct fee has been received.***

	A. Project	B. Project Cost	C. Project Fee
1			
2			
3			
4			
5			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE ENCLOSED	

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

☐ Yes (*Provide the information below*) ☐ No

Applicant: _____ Notification Number: _____ Date: _____

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

☐ No ☐ Yes (*Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.*)

☐ *Continued on additional page(s)*

8. PROJECT LOCATION

A. Address or description of project location. (*Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway*)
☐ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	
C. What water body is the river, stream, or lake tributary to?	
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☐ No ☐ Unknown
E. County	

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section

☐ *Continued on additional page(s)*

K. Meridian (*check one*)	☐ Humboldt ☐ Mt. Diablo ☐ San Bernardino

L. Assessor's Parcel Number(s)
☐ *Continued on additional page(s)*

M. Coordinates (*If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)*

Latitude/Longitude	*Latitude:*	*Longitude:*	
	☐ Degrees/Minutes/Seconds	☐ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:*	*Northing:*	☐ Zone 10 ☐ Zone 11
Datum used for Latitude/Longitude or UTM	☐ NAD 27	☐ NAD 83 or WGS 84	

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	☐	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☐	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Diversion structure – weir or pump intake	☐	☐	☐
Filling of wetland, river, stream, or lake	☐	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☐	☐	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	☐	☐	☐
Sediment removal – pond, stream, or marina	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	☐	☐	☐
Utility crossing : Horizontal Directional Drilling	☐	☐	☐
Jack/bore	☐	☐	☐
Open trench	☐	☐	☐
Other *(specify)*:	☐	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

☐ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

☐ *Continued on additional page(s)*

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).	☐ Yes ☐ No (*Skip to box 11*)
D. Will the proposed project require work in the wetted portion of the channel?	☐ Yes (*Enclose a plan to divert water around work site*) ☐ No

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

☐ *Continued on additional page(s)*

B. Will the project affect any vegetation? ☐ Yes (*Complete the tables below*) ☐ No

Vegetation Type	Temporary Impact	Permanent Impact
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)

☐ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☐ Yes *(List each species and/or describe the habitat below)* ☐ No ☐ Unknown

☐ *Continued on additional page(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

☐ *Continued on additional page(s)*

E. Has a biological study been completed for the project site?

☐ Yes (*Enclose the biological study*) ☐ No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

☐ Yes (*Enclose the hydrological study*) ☐ No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

☐ *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

☐ *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

☐ *Continued on additional page(s)*

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. _____ ☐ Applied ☐ Issued

B. _____ ☐ Applied ☐ Issued

C. _____ ☐ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☐ *Continued on additional page(s)*

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?

☐ Yes (*Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each*)

☐ No (*Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared*)

☐ Notice of Exemption	☐ Mitigated Negative Declaration	☐ NEPA document (*type*): _____
☐ Initial Study	☐ Environmental Impact Report	☐ CESA document (*type*): _____
☐ Negative Declaration	☐ Notice of Determination *(Enclose)*	☐ ESA document (*type*): _____
☐ THP/ NTMP	☐ Mitigation, Monitoring, Reporting Plan	

B. State Clearinghouse Number (*if applicable*)			
C. Has a CEQA lead agency been determined?	☐ Yes (*Complete boxes D, E, and F*)	☐ No (*Skip to box 14.G*)	
D. CEQA Lead Agency			
E. Contact Person		F. Telephone Number	

G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.

☐ *Continued on additional page(s)*

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

☐ Yes (*Enclose proof of payment*) ☐ No (*Briefly explain below the reason a filing fee has not been paid)*

Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.

15. SITE INSPECTION

Check one box only.

☐ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.

☐ I request the Department to first contact (*insert name*) _____ at (*insert telephone number*) _____ to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?
☐ Yes (Please enclose the information via digital media with the completed notification form) ☐ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

_____ _____
Signature of Applicant or Applicant's Authorized Representative Date

_____
Print Name

CALIFORNIA DEPARTMENT OF FISH AND GAME
LAKE AND STREAMBED ALTERATION FEE SCHEDULE

The Department of Fish and Game (Department) may refuse to process a notification, or a request for an extension or amendment, until the proper fee or fees have been received.

STANDARD AGREEMENT

Any agreement other than an agreement for gravel, rock, or sand extraction, an agreement for timber harvesting, an agreement for routine maintenance, a master agreement, or a master agreement for timber operations.

Fee:
If the term of the agreement is 5 years or less.

For each project the agreement covers:

$224.00 if the project costs less than $5,000.
$280.25 if the project costs from $5,000 to less than $10,000.
$560.25 if the project costs from $10,000 to less than $25,000.
$840.25 if the project costs from $25,000 to less than $100,000.
$1,233.25 if the project costs from $100,000 to less than $200,000.
$1,673.00 if the project costs from $200,000 to less than $350,000.
$2,521.50 if the project costs from $350,000 to less than $500,000.
$4,482.75 if the project costs $500,000 or more.

Project cost means the cost to complete each project for which notification is required.

As a general rule, a notification for a standard agreement should identify only one project. If an entity chooses to identify more than one project in a single notification, the Department may require the entity to separately notify the Department for one or more of the projects included in the original notification based on their type or location.

If the notification includes more than one project, the fee shall be calculated by adding the separate fees for each project. For example, if a notification identifies three projects, one of which will cost less than $5,000 to complete, one of which will cost $7,500 to complete, and one of which will cost $17,500 to complete, the fee for the first project would be $224.00, the fee for the second project would be $280.25, and the fee for the third project would be $560.25. Hence, the total fee the entity would need to submit with the notification that identifies those three projects would be $1,064.50.

An entity may not obtain a standard agreement for any project identified in the notification that qualifies for an agreement for gravel, rock, or sand extraction, an agreement for timber harvesting, an agreement for routine maintenance, a master agreement, or a master agreement for timber operations unless the Department agrees otherwise.

Fee submittal: If the entity requests an agreement with a term of 5 years or less, the fee specified in the category for agreements with a term of 5 years or less must be submitted with the notification.

If the entity requests an agreement with a term longer than 5 years (Standard Long-term Agreement) the fee specified must be submitted with the notification.

STANDARD LONG-TERM AGREEMENT

Any agreement other than an agreement for gravel, rock, or sand extraction, an agreement for timber harvesting, an agreement for routine maintenance, a master agreement, or a master agreement for timber operations.

Fee:
If the term of the agreement is longer than 5 years.

$2,689.50 base fee, plus

For each project the agreement covers:

$224.00 if the project costs less than $5,000.
$280.25 if the project costs from $5,000 to less than $10,000.
$560.25 if the project costs from $10,000 to less than $25,000.
$840.25 if the project costs from $25,000 to less than $100,000.
$1,233.25 if the project costs from $100,000 to less than $200,000.
$1,673.00 if the project costs from $200,000 to less than $350,000.
$2,521.50 if the project costs from $350,000 to less than $500,000.
$4,482.75 if the project costs $500,000 or more.

Project cost means the cost to complete each project for which notification is required.

As a general rule, a notification for a standard agreement should identify only one project. If an entity chooses to identify more than one project in a single notification, the Department may require the entity to separately notify the Department for one or more of the projects included in the original notification based on their type or location.

If the notification includes more than one project, the fee shall be calculated by adding the separate fees for each project. For example, if a notification identifies three projects, one of which will cost less than $5,000 to complete, one of which will cost $7,500 to complete, and one of which will cost $17,500 to complete, the fee for the first project would be $224.00, the fee for the second project would be $280.25, and the fee for the third project would be $560.25. Hence, the total fee the entity would need to submit with the notification that identifies those three projects would be $1,064.50.

An entity may not obtain a standard agreement for any project identified in the notification that qualifies for an agreement for gravel, rock, or sand extraction, an agreement for timber harvesting, an agreement for routine maintenance, a master agreement, or a master agreement for timber operations unless the Department agrees otherwise.

Fee submittal: If the entity requests an agreement with a term of 5 years or less, the fee specified in the category for agreements with a term of 5 years or less must be submitted with the notification.

If the entity requests an agreement with a term longer than 5 years, the fee specified must be submitted with the notification.

SAND, ROCK AND GRAVEL EXTRACTION AGREEMENT

Any agreement for commercial or non-commercial mining or extraction of gravel, sand, rock, or other aggregate material.

Fee:
If the term of the agreement is 5 years or less:

$560.25 if the annual extraction volume is less than 500 cubic yards.
$1,120.50 if the annual extraction volume is 500 to less than 1,000 cubic yards.
$2,801.75 if the annual extraction volume is 1,000 to less than 5,000 cubic yards.
$5,000.00 if the annual extraction volume is 5,000 or more cubic yards.

Fee:
If the term of the agreement is longer than 5 years:

$11,206.75 base fee, plus
$1,120.50 annual fee

Fee submittal: If the entity requests an agreement with a term of 5 years or less, the fee specified in paragraph (1) must be submitted with the notification.

If the entity requests an agreement with a term longer than 5 years, the base fee specified in paragraph (2) must be submitted with the notification.

TIMBER HARVESTING OPERATION AGREEMENT

An agreement of five years or less that covers one or more projects that are included in a timber harvesting plan approved by the California Department of Forestry and Fire Protection.

Fee:
$1,345.25 base fee, plus
$112.00 for each project the agreement covers, and

Fee submittal: The fee specified must be submitted with the notification.

MASTER TIMBER HARVESTING OPERATION AGREEMENT

An agreement with a term of greater than five years that covers timber operations on timberland that are not exclusively projects to extract gravel, sand, or rock; not exclusively projects that are included in a timber harvesting plan approved by the California Department of Forestry and Fire Protection; or not exclusively routine maintenance projects that the entity will need to complete separately at different time periods during the term of the agreement; and describes a procedure the entity must follow for construction, maintenance, or other projects the agreement covers.

Fee:
$8,404.75 base fee, plus
$112.00 for each project the agreement covers, and
$1,120.50 annual fee

Fee submittal: The base fee specified at a minimum must be submitted with the notification. The balance of all fees due must be paid prior to the issuance of the agreement.

Note: If an entity chooses to identify more than one project in a single notification, the total fee may exceed $5,000 regardless of the term of the agreement.

ROUTINE MAINTENANCE AGREEMENT

An agreement that covers only multiple routine maintenance projects that the entity will complete at different time periods during the term of the agreement; and describes a procedure the entity must follow for any maintenance projects the agreement covers.

Fee:
If the term of the agreement is 5 years or less:

$1,345.25 base fee, plus
$112.00 for each maintenance project completed per calendar year.

Fee:
If the term of the agreement is longer than 5 years:

$2,689.50 base fee, plus
$112.00 for each maintenance project completed per calendar year.

Fee submittal: If the entity requests an agreement with a term of 5 years or longer than 5 years, the base fee at a minimum must be submitted with the notification. The balance of all fees due must be paid prior to the issuance of the agreement.

MASTER AGREEMENT

An agreement with a term of greater than five years that covers multiple projects that are not exclusively projects to extract gravel, sand, or rock; not exclusively projects that are included in a timber harvesting plan approved by the California Department of Forestry and Fire Protection; or not exclusively routine maintenance projects that the entity will need to complete separately at different time periods during the term of the agreement; and describes a procedure the entity must follow for construction, maintenance, or other projects the agreement covers.

Fee:
$33,620.25 base fee, plus:
$280.25 for each project the agreement covers, and
$2,801.50 annual fee

Fee submittal: The base fee specified in paragraph (1) at a minimum must be submitted with the notification. The balance of all fees due must be paid prior to the issuance of the agreement.

An example of a project for which the Department would issue a master agreement is a large-scale development proposal comprised of multiple projects for which specific, detailed design plans have not been prepared at the time of the original notification. The master agreement will specify a process the Department and entity will follow before each project begins and may identify various measures the entity will be required to incorporate as part of each project in order to protect fish and wildlife resources.

As a general rule, the process specified in the master agreement will require the entity to notify the Department before beginning any project the agreement covers and submit a fee based on the cost of the project. After the Department receives the notification, it will confirm that the master agreement covers the project and propose measures to protect fish and wildlife resources in addition to any included in the master agreement, if such measures are necessary for the specific project.

A master agreement will typically, but not always, encompasses one or more watersheds and/or relate to a habitat conservation plan or natural community conservation plan. By contrast, if the large-scale development proposal is comprised of, for example, multiple residences, golf courses, and associated infrastructure projects for which specific, detailed design plans have been prepared by the time the entity notifies the Department and the entity is ready to begin those projects, the Department would issue the entity a standard agreement.

AGREEMENT EXTENSION

A renewal of an agreement executed prior to January 1, 2004, or an extension of an agreement executed on or after January 1, 2004.

Extensions
Fee: $224.00

To request an extension for an existing agreement, complete an Extension Request Form, and submit to the appropriate DFG Regional office with the appropriate fee.

An extension request must be made prior to expiration date of the agreement.

An extension is not an amendment.

AGREEMENT AMENDMENT

The holder of a Lake or Streambed Alteration Agreement may request the Department to amend the agreement, provided the request is submitted to the Department in writing prior to the agreement's expiration.

Minor Amendments
Fee: $168.00

A minor amendment is one that would not significantly modify the scope or nature of any project covered by the agreement or any measure included in the agreement to protect fish and wildlife resources.

Major Amendments
Fee: $560.25

A major amendment is one that would significantly modify the scope or nature of any project covered by the agreement or any measure included in the agreement to protect fish and wildlife resources, or require additional environmental review pursuant to section 21000 *et seq.* of the Public Resources Code or section 15000 *et seq.* of title 14 of the California Code of Regulations. An amendment is not an extension.

A project may not be added to an agreement by amendment unless the agreement specifies otherwise.

To request an amendment for an existing agreement, complete an Amendment Request Form, and submit to the appropriate DFG Regional office with the appropriate fee.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

When the Department is required to act as lead agency in administering or enforcing sections 1600–1616 of the Fish and Game Code, the Department may charge and collect a reasonable fee from the entity to recover its estimated CEQA-related costs in accordance with section 21089 of the Public Resources Code. The Department may recover its estimated CEQA-related costs by collecting from the entity one or more deposits.

If the Department is acting as lead agency, you will also be required to submit the following additional fees.

Fee:
$1,500 initial deposit

Payment of Fees: A deposit of $1,500 must be submitted with the notification. Additional deposits will be requested as needed. The Department shall refund any unused deposit to the entity.

Appendix B. Interview schedules

Appendix B-1. Interview schedules – Restoration Practitioner

1. How is your work in implementing habitat restoration projects affected by the environmental compliance process, including CEQA/NEPA and permitting?

2. What percent of the total budget for restoration projects is typically spent on environmental compliance? Given the variable size and complexity of restoration projects, how long does the environmental compliance process typically take?

3. In your opinion, should habitat restoration projects, particularly those conducted by non-profit organizations, follow the same process, particularly for CEQA compliance, as development projects?

4. How could the process be revised to be more effective? Are there specific types or classes of projects that should be allowed to go through a streamlined process or should be exempt from the process completely? Are there impacts or issues that are not currently addressed in the compliance process?

5. Does your organization typically conduct its own compliance (CEQA, permit applications) for habitat restoration projects? Or does your organization typically hire consultants to complete the work? What factors affect this decision?

Appendix B-2. Interview schedules – Regulatory Agency Staff

1. How does the environmental compliance process impact habitat restoration projects?

2. What percent of the budget for restoration projects is typically spent on environmental compliance? Given the variable size and complexity of restoration projects, how long does the environmental compliance process typically take?

3. Should habitat restoration projects, particularly those conducted by non-profits or agencies, need to go through the same environmental compliance process as development projects?

4. How could the process be revised to be more effective? Are there specific types or classes of projects that should be allowed to go through a streamlined process or should be exempt from the process completely?

Appendix C. Policy Memorandum for CEQA Revision

TO: Director, Governor's Office of Planning and Research

FROM: Shannon Fiala, Masters candidate, Department of Landscape Architecture and Environmental Planning, University of California - Berkeley

DATE: 15 May 2011

SUBJECT: Lessening the regulatory burden for small-scale ecological restoration implementation

Action Statement

The Governor's Office of Planning and Research (OPR) should explore options for lessening the regulatory burden for small-scale ecological restoration projects. These options could include rewriting CEQA Categorical Exemption 15333 for Small Habitat Restoration Projects and revising the California Department of Fish and Game's Streambed Alteration Agreement fee structure.

Background

When completed responsibly, ecological restoration serves as an important tool in repairing damage caused by human development on California's ecosystems. The regulatory process under California Environmental Quality Act (CEQA) and the California Endangered Species Act (CESA) was created in order to reduce and prevent environmental degradation. However, ecological restoration projects must complete

CEQA documentation and file permits like any other project. This expensive and time-consuming process can inhibit project implementation.

To illustrate this problem, please consider this example: a private landowner is motivated to spend $8000 to improve habitat quality for state listed endangered Coho salmon by installing large wood structures in the stream on their property. However, they must first navigate the complex regulatory process in order to implement this project, including filing a negative declaration under CEQA and paying up to $250 per piece of wood in California Department of Fish and Game (CDFG) fees. Although this project would ultimately benefit species that CDFG and CEQA are designed to protect, this habitat restoration is treated as any other 'streambed alteration' and would spend 25% of the total construction budget on complying with regulations. This example raises questions about whether small restoration projects are sometimes over-scrutinized in the regulatory process. Could an alternative compliance process be created for certain types of restoration projects or could the existing process be revised to more effectively reduce the short-term impacts of projects seeking long-term environmental improvements?

Issues

In interviews for my Master's thesis research, regulatory agency staff have agreed that this issue needs to be addressed at both the Governor's Office of Planning and Research in revising policy and at the regulatory agencies. One staff member from the National Marine Fisheries Service (NMFS) acknowledged that, '"Most people who are

interested in implementing restoration are exasperated by the regulatory process and walk away. Some are unclear due to the complexity. A few barrel through and learn." Similarly, staff at a Regional Water Quality Control Board (RWQCB) agreed that, "The regulatory process was designed to prevent environmental degradation, but today it prevents ecological restoration activities." Momentum is building within the regulatory agencies, such as NMFS, RWQCB, CDFG, and the United States Army Corps of Engineers to address this issue from the bottom-up at the agency level. Through this policy memo I hope to create momentum at the OPR to address this issue at the policy level as well.

Recommendations

The Governor's OPR should initiate the process to revise CEQA's guidelines to alleviate issues of cost, timing, and to provide more clarity for small-scale ecological restoration projects navigating the regulatory process:

In particular, Title 14, Chapter 3, Article 19, Categorical Exemption 15333 for Small Habitat Restoration Projects could:

- allow projects that meet certain criteria besides those that are under five acres to be exempt from CEQA, such as restoration projects of certain criteria, such as those that are located far from water features, which require no large equipment and no fill or dredging activities;
- grant special consideration to restoration projects conducted by non-profit organizations below a certain size; and

- more explicitly describe how five acres should be measured.

CEQA legislation could also be revised to:

- incorporate a review board, mimicking the process conducted under the Timber Harvest Plan review process;
- incorporate lessons learned from other states' environmental policy acts, such as Washington and New York. For example, CEQA could be revised to more specifically define 'significance' of impacts;
- designate an agency that has the authority to determine whether project proponents have adequately satisfied the requirements of CEQA, rather than giving discretion to the courts, which would benefit all participants in CEQA, including proponents of small restoration projects.

In order to address issues of cost, OPR could also work with the California Natural Resources Agency to revise CDFG's fee structure for Streambed Alteration Agreements to grant special consideration for projects that are altering the streambed in order to achieve long-term habitat improvements, particularly for state and federally threatened or endangered species and species of special concern.

In order to address issues of improving the CEQA guidelines, OPR could provide more guidance on expected effort for different types of restoration projects. For a particular type of restoration action, there could be a list of required analyses and mitigations and references to exemplary environmental review documentation from previous projects.

Rationale

Although preserving what remains of California's natural ecosystems should be a priority, ecological restoration is an important tool in improving or rebuilding those ecosystems that have already been disturbed. Over the past forty years since most major environmental policies were passed, the practice of ecological restoration has become increasingly common. In 2007, a review over 37,000 river restoration projects nationwide revealed that over one billion dollars was spent annually on restoration projects. Sustainable Conservation, a non-profit organization, has worked with federal agencies to address the regulatory burden on small-scale ecological restoration projects, but the problem has not been addressed at the state level. This problem should be addressed at the policy level. The OPR could initiate the CEQA guidelines revision process. Furthermore, the OPR should examine the beneficial aspects of other state's environmental policies that were enacted after CEQA, such as New York's State Environmental Quality Review Act (SEQRA) and Washington's State Environmental Policy Act (SEPA), both of which were modeled after NEPA, but attempted to avoid the pitfalls of earlier state statutes, such as CEQA. In particular, SEPA offers project sponsors more clarity in defining which types of projects are required to go through SEPA and in determining whether the impacts are significant, both of which are subject to broader interpretation under CEQA.

Greater clarity in the regulations would benefit both the proponents of restoration projects, as well as other types of projects. CEQA does not grant decision-making

authority to any state agency; the State Clearinghouse merely distributes CEQA documents to interested parties. However, if the CEQA process had more agency oversight, project proponents might spend less time and money writing overly cautious and conservative assessments of project impacts.

Next Steps

As has often been its historical role, California could be a national policy leader while setting an example for both local and international governments by facilitating the implementation of ecological restoration projects. Scarce resources, which could be invested in implementing habitat improvements, are being wasted on the regulatory process. Governor Brown can take the lead nationally by making this statement and taking steps to improve California's regulatory process for ecological restoration projects.

Appendix D. Letter to the Editor of the San Francisco Chronicle and Sacramento Bee

To the Editors:

When completed responsibly, ecological restoration serves as an important tool in repairing some of the damage caused by human development. The regulatory process under the California Environmental Quality Act (CEQA) and the California Endangered Species Act (CESA) was created in order to reduce and prevent environmental degradation. However, ecological restoration projects follow this process like any other project and this expensive and time-consuming process can inhibit project implementation. Particularly problematic is the California Department of Fish and Game's Streambed Alteration Agreement (SAA) fee structure. CDFG currently charges restoration projects that seek to 'alter' the streambed for habitat improvements for threatened and endangered plants and wildlife species that CDFG is mandated to protect. These fees can account for up to 20-30% of total project cost. The California Natural Resources Agency should revise CDFG's fee structure for SAAs to differentiate between damaging projects and projects that seek to achieve long-term habitat improvements.

Sincerely,

Shannon Fiala

University of California at Berkeley | College of Environmental Design

Master of Environmental Planning | Candidate 2011