APPENDIX A

Steps Needed to Replace Pre-SWANCC USACOE Regulatory Protection for Isolated Waters

Projected Personnel Requirements

Steps Needed to Replace Pre-SWANCC USACOE Regulatory Protection for Isolated Waters

PROJECTED PERSONNEL REQUIREMENTS

TASK	SUB-TASK and Basis for Workload Standard[1]	ANNUAL WORKLOAD	UNIT COST FACTOR (hours)	TOTAL NEED (hours)	PYs (1775 hours/PY)	CONTRACT ($ M)
TASK 1. Advise Dischargers of Need to Report Discharges	Consult with professional groups, develop and distribute newsletter notices, press releases. Unit cost factor based on experience with preparation of similar documents.	10	14	140	0.08	
Task 1 Subtotal:					**0.08**	
TASK 2. Develop and Implement Endangered Species Consultation Process	**A**. Meet with DFG, USFWS, USNMFS, systematize coordination protocols and monitor implementation. Unit cost factor based on experience with similar interagency coordination.	6	24	144	0.08	
	B. Develop internal guidance for RWQCBs. Unit cost factor based on experience with similar guidance. *(One-time Activity)*.	1	80	80	0.05	
	C. Implementation - Assume 75% of projects involve listed species = 82 x 0.75 = 61.5 and of these, assume 66% are "simple" and 33% are "complex." See Table 1 for basis of cost factors.					
	Simple Projects - 61.5 x 0.66 = 40.59	40.59	19	771.21	0.43	
	Complex Projects - 61.5 x 0.33 = 20.29	20.29	76	1542.04	0.87	
Task 2 Subtotal:					**1.43**	

Steps Needed to Replace Pre-SWANCC USACOE Regulatory Protection for Isolated Waters
PROJECTED PERSONNEL REQUIREMENTS

TASK 3. Adopt a State Wetland Definition and State Analog of 404(b)(1) Guidelines. *(One-time Activity)*.	Conduct technical analyses, develop CEQA and policy documents, provide staff for public review. Unit cost factor based on recent SWRCB experience with rulemaking.	1	9763	9763	5.50	1.5
Task 3 Subtotal:					5.50	1.5
TASK 4. Implement Wetland Permitting Program for "Isolated" Waters	**A.** Pre-application consultation - Assume pre-app consult for 50% of projects = 82 x 0.5 = 41	41	20.3	832.3	0.47	
	B. Application Acceptance as Complete - Assume 82 apps, 75% incomplete and need 2nd review, 33% of these need 3rd review = (82 x 1.75) + (61.5 x 0.33) = 163.79	163.79	10.1	1654.279	0.93	
	C. Application Review - Unit cost factor based on average of Application Review time requirement presented in *Needs Analysis*.	82	143	11726	6.61	
	D. Regulatory Action. Issue WDR or verification of eligibility for general permit. Unit cost factor based on average of Regulatory Action time requirement presented in *Needs Analysis.*	82	15	1230	0.69	
	E. Appeals. Assume one every two years.	0.5	169	84.5	0.05	
	F. Inspections - Assume inspect 50% of projects, 2 visits each = 82 x 0.5 x 2 = 82	82	10.1	828.2	0.47	

	G. Enforcement					
	a. Informal enforcement and follow-up - Assume 50% of 41 inspected projects out of compliance = 41 x 0.5 = 20.5	20.5	11.9	243.95	0.14	
	b. Statute 13267 letters and follow-up - Assume 50% of 20.5 out-of-compliance projects do not respond to informal enforcement = 20.5 x 0.5=10.25	10.25	17	174.25	0.10	
	c. Administrative Civil Liability (Simple) and follow-up - Assume ACL (Simple) issued for 25% of Statute 13267 letters = 10.25 x 0.25 = 2.6	2.6	74	192.4	0.11	
	d. Administrative Civil Liability (Complex) and follow-up - Assume ACL (Complex) issued for 25% of Statute 13267 letters = 10.25 x 0.25 = 2.6	2.6	270	702	0.40	
Task 4 Subtotal:					**9.95**	
GRAND TOTAL:					**16.96**	**1.5**

[1] Except as otherwise noted, workload standards and Unit Cost Factors are based on SWRCB's, "Report to the Legislature as Required by FY 1999/00 Budget Act Supplemental Language - Core Regulatory Program's Needs Analysis" submitted to the Legislature in March 2001.

APPENDIX B

Memorandum from SWRCB's Office of the Chief Counsel regarding "Effect of *SWANCC v. United States* on the 401 Certification Program"

Winston H. Hickox
Secretary for Environmental Protection

State Water Resources Control Board

Office of Chief Counsel
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Gray Davis
Governor

TO: State Board Members
Regional Board Executive Officers

[Signed]

FROM: Craig M. Wilson
Chief Counsel
OFFICE OF CHIEF COUNSEL

DATE: January 25, 2001

SUBJECT: EFFECT OF *SWANCC V. UNITED STATES* ON THE 401 CERTIFICATION PROGRAM

This memorandum has been prepared to explain the effect of the recent US Supreme Court decision of *Solid Waste Association of Northern Cook Counties v. United States Corps of Engineers* (hereinafter "SWANCC"), which was issued on January 9th. The memo is intended to address the impact of the decision on the 401 program (33 U.S.C. § 1341), and to indicate alternative regulatory avenues available to the Regional Boards for waters that are no longer covered by section 404/401 jurisdiction.

I. Facts of the *SWANCC* decision and holding

SWANCC is a consortium of suburban Chicago cities and villages looking to develop a solid waste disposal site. It located a 533-acre parcel that was a gravel-mining pit until about 1960. The pit has reverted into a successional stage forest with seasonal and permanent ponds, but it was not a delineated wetland. SWANCC purchased the site and applied for a § 404 permit. In furtherance thereof, it sought certification from the state of Illinois.

The Clean Water Act (CWA) only regulates what it refers to as "navigable waters." The CWA defines navigable waters as "waters of the United States." In the past, the agencies responsible for implementing the Clean Water Act interpreted the term "waters of the United States" broadly. They determined that it reflected Congress' intention to regulate all waters that the Congress could constitutionally regulate under its commerce power. (See Art. I, Section 8 of the U.S. Constitution, generally known as the Commerce Clause.) Specifically, if the water had any possible connection to interstate commerce, it fell within the scope of the CWA. Since 1986 the Army Corps of Engineers' (COE) regulations reflected this determination. They stated that "waters of the United States" includes, among other things, intrastate waters:

(a) That are or would be used as habitat by birds protected by migratory bird treaties; or

(b) That are or would be used as habitat by other migratory birds that cross state lines; or

(c) That are or would be used as habitat for endangered species; or

(d) That are or would be used to irrigate crops sold in interstate commerce.

This has been dubbed "The Migratory Bird Rule."

Although the SWANCC site was not a "wetland" according to the COE's wetland delineation manual, the COE found that approximately 121 bird species dependent on aquatic environments were observed at the site, and thus found the site to be a water of the United States. Accordingly the COE asserted jurisdiction over the site. The state of Illinois granted 401 certification, but the COE denied the 404 permit on traditional grounds.[1]

SWANCC sued to challenge the COE's jurisdiction over the site, claiming that the COE could not regulate non-navigable, isolated, intrastate waters based on the presence of migratory birds, and that Congress lacked authority under the Commerce Clause to grant the COE such jurisdiction in any event. Although the COE prevailed in the trial and appellate courts, the US Supreme Court reversed, and invalidated the Migratory Bird Rule. It held that the rule is not a fairly supported interpretation of the term "waters of the United States," and the COE exceeded its jurisdiction by interpreting the CWA's reach to include isolated, inland, non-navigable waters. The Court held or implied that the CWA might fairly extend to:

"(a) [t]hose waters of the United States which are subject to the ebb and flow of the tide, and/or are presently, or have been in the past, or may be in the future susceptible for use for purposes of interstate or foreign commerce;

"(b) waters that were or had been navigable in fact or which could reasonably be so made;

"(c) non-navigable wetlands adjacent to open waters;

"(d) wetlands [that are] 'inseparably bound up with the waters of the United States; and

"(e) water bodies [capable] of use by the public for purposes of transportation or commerce."

[1] The COE found (1) that SWANCC had not established that the proposal was the least harmful practicable alternative; (2) that SWANCC's failure to set aside funds for leak remediation was unacceptable risk to public drinking water supplies; and (3) that the impact to the waters was unmitigable because a landfill cannot be redeveloped into forested habitat.

The Supreme Court questioned the constitutionality of any amendment to the CWA, if Congress was so inclined, that would purport to assert federal jurisdiction over isolated, inland waters. In other words, if Congress tried to adopt the "migratory bird rule," a majority of the Court indicated its belief that it would exceed the power granted to Congress under the U.S. Constitution.

II. *SWANCC's* effect upon the 401 certification program will not be wholly determined until the COE issues guidance implementing the decision.

California's right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the COE, or another application for a federal license or permit. Thus if the Corps determines that the water body in question is not subject to regulation under the COE's 404 program, for instance, no application for 401 certification will be required. Accordingly, the COE's interpretation of the *SWANCC* decision will determine *SWANCC's* impact upon a major portion of California's 401 program. The COE has yet to issue guidance setting forth how the *SWANCC* decision will be implemented. Clearly, however, the Migratory Bird Rule will not determine the scope of the COE's authority over isolated waters. Isolated non-navigable waters (including most non-tidal wetlands) appear to be outside the purview of section 404 of the Clean Water Act.

III. The *SWANCC* decision does not affect the Porter-Cologne authorities to regulate discharges to isolated, non-navigable waters of the state.

If anything definitive can be said about the *SWANCC* decision, it is that the Supreme Court believes regulating inland waters, including isolated wetlands, vernal pools, etc., are the primary (and probably now the exclusive) province of the state. California has numerous authorities that require these waters to be protected. None of those state authorities are affected by the U.S. Supreme Court's decision. Accordingly, the *SWANCC* decision has no impact upon the Regional Board's authority to act under state law. Some major relevant provisions are set forth below.

Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the *waters of the state* to file a report of discharge (an application for waste discharge requirements)." (Water Code § 13260(a)(1) (emphasis added).) The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code § 13050(e).) The U.S. Supreme Court's ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the COE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g.,

vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions from issuing WDRs (or waivers of WDRs) in the absence of a request for 401 certification.

Under state law, the duty to file a report of waste discharge is mandatory:

> All of the following persons *shall* file with the appropriate regional board a report of the discharge. (Water Code § 13260(a).)

Furthermore, the Regional Board is required to issue or waive WDRs whenever it receives a report of discharge:

> The regional board, after any necessary hearing, *shall* prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge… with relation to the conditions existing in the disposal area or receiving waters upon, or into which the discharge is made or proposed. The requirements *shall* implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose [etc.] (Water Code § 13263(a).)

Notably, every person is precluded from initiating new discharges or making material changes to discharges prior to filing the report of waste discharge described in section 13260, and for 120 days thereafter unless they have received WDRs (or appropriate waivers). (Water Code § 13264(a).) Given the state's interest in protecting wetlands, it is incumbent upon staff to act within the 120 days. A fill thereafter may be lawful. If, however, it appears that the Regional Board is unable to meet and consider WDRs (or a waiver thereof) within the statutory time allotted, the Regional Board could issue a cleanup and abatement order under section 13304 against anyone who, through a discharge to waters of the state, has created or threatens to create a condition of pollution. "Pollution" is defined as an alteration of the quality of the waters of the state, which unreasonably affects its beneficial uses. (Water Code § 13050(l).) Wildlife is a beneficial use, and thus filling or threatening to fill wetlands would provide grounds to issue an appropriate order under 13304.

The California Environmental Quality Act (CEQA) also provides a requirement for the Regional Boards to exercise their authorities to require minimization and mitigation of impacts to waters of the state. Whenever a Regional Board is a responsible agency under CEQA, and the Lead Agency has prepared an EIR, the Regional Board must not only review the CEQA document, but it must reach its own conclusions on whether and how to approve the project involved. (14 CCR § 15096(a).) Moreover, the Regional Board must mitigate or avoid the direct or indirect environmental effects of the parts of the project it approves, and it is prohibited from approving a project if there is a feasible alternative or feasible mitigation measures that would

lessen or avoid significant impacts. (14 CCR § 15096(g)(1) and (g)(2).) Furthermore, as a responsible agency the Regional Board must make specific findings relating to the feasibility of avoidance, minimization, or mitigation of the adverse effects. (14 CCR §§ 15096(h), 15091, 15093.) Feasible changes or alterations within the control of the Regional Board must be articulated in the WDRs.

Notably, since 1993 and continuing through the present, the official policy of the United States and the State of California respecting wetlands has and continues to be one of "no net loss." Accordingly, the charge to protect the state's wetlands has already been articulated. In areas where the COE determines it no longer has jurisdiction, it would be consistent with present federal and state policy for the Regional Boards to fill the gap. This may require contacting the applicable COE divisions for assistance in identifying pending 404 permit applications, or conducting outreach to the local development interests to remind them that, irrespective of the COE's authority or the 404 program, they still must comply with applicable state requirements for discharges.

IV. Conclusion

While the *SWANCC* decision will no doubt have repercussions for the state's 401 certification program, the reach of the decision will not be clear until the COE issues guidance indicating how it intends to implement the holding. The 404 program may be dramatically scaled back or the COE could read the decision narrowly, as merely invalidating the Migratory Bird Rule. Irrespective, the state retains its independent authority under Porter-Cologne and other statutes, to regulate discharges of waste to all waters of the state, including those waters that are no longer considered waters of the United States. The thrust of the *SWANCC* decision is that regulation of inland, isolated waters is and should be under the primary authority of the state rather than the federal government. Given the state and federal "no net loss" of wetlands policy, the Regional Board's should consider that regulating any discharges of waste to waters that may no longer be subject to COE jurisdiction is both authorized and justified.

If you have any questions about this memo, please contact Michael Levy, Staff Counsel at (916) 341-5193.

cc: Edward C. Anton, EXEC
Stan Martinson, DWQ
RWQCB Attorneys, OCC

APPENDIX C

RIPARIAN AREAS -
FUNCTIONS AND VALUES

APPENDIX C

RIPARIAN AREAS - FUNCTIONS AND VALUES

A. Definitions of Riparian

Riparian areas are the areas along stream and river systems with fertile bank soils and supplied with water for at least some portion of the year (Warner and Hendrix, 1985). Riparian areas are complex systems and difficult to structurally characterize (Katibah, 1985). Below are examples of riparian definitions developed from 1993 to 2002.

> "Riparian areas are vegetated ecosystems along a waterbody through which energy, materials, and water pass. Riparian areas characteristically have a high water table and are subject to periodic flooding and influence from the adjacent waterbody. These systems encompass wetland, uplands, or some combination of these two land forms. They will not in all cases have the characteristic necessary for them to be classified as wetlands" (United States Environmental Protection Agency Office of Water, 1993).

> "The riparian zone is the border or banks of a river or stream, or the area influenced by that river or stream. Riparian zones support diverse and abundant terrestrial wildlife species, protect stream banks and adjacent land from erosion, and contribute significantly to aquatic communities by providing shade, cover from predators, nutrients, and buffer from nearby land use activities, and a filter for overland soil erosion." (California Resources Agency, 1994).

> "Riparian areas are transitional between terrestrial and aquatic ecosystems and are distinguished by gradients in biophysical conditions, ecological process, and biota. They are areas through which surface and subsurface hydrology connect waterbodies with their adjacent uplands. They include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e., a zone of influence). Riparian areas are adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines." (National Academy of Sciences, 2002).

B. Riparian Functions and Values

The 1988 Proceedings of the California Riparian Systems Conference" identified the following riparian values:

- Protect banks from erosion
- Help to reduce the impact of flooding
- Provide quality living conditions for fish and wildlife

- Create corridors for fish and wildlife migration
- Harbor threatened and endangered species
- Produce timber and other wood products
- Provide recreation sites
- Contribute to the natural beauty of an area

USEPA guidance highlights the importance of wetland and riparian systems as areas that:

> "... play a critical role in reducing NPS pollution, by intercepting surface runoff, subsurface flow, and certain ground-water flows. Their role in water quality improvement includes processing, removing, transforming, and storing such pollutants as sediment, nitrogen, phosphorus, and certain heavy metals. Thus, wetlands and riparian areas buffer receiving waters from the effects of pollutants, or they prevent the entry of pollutants into receiving waters.
>
> The functions of wetlands and riparian areas include water quality improvement, aquatic habitat, stream shading, flood attenuation, shoreline stabilization, and ground-water exchange. Wetlands and riparian areas typically occur as natural buffers between uplands and adjacent water bodies. Loss of these systems allows for a more direct contribution of NPS pollutants to receiving waters. The pollutant removal functions associated with wetlands and riparian area vegetation and soils combine the physical process of filtering and the biological processes of nutrient uptake and denitrification .... Riparian forests, for example, have been found to contribute to the quality of aquatic habitat by providing cover, bank stability, and a source of organic carbon for microbial process such as denitrification. Riparian forests have also been found to be effective in reducing instream pollution during flood flows ...." (United States Environmental Protection Agency, 1993).

Riparian systems are particularly critical in maintaining the biological processes and pollutant removal characteristics of small headwater stream. These smaller streams have special importance in maintaining water quality within a watershed. One nationwide study of streams found:

> ".... the most rapid uptake and transformation of inorganic nitrogen occurred in the smallest streams .... headwater streams typically export downstream less than half of the input of dissolved inorganic nitrogen from their watersheds .... Small streams may be the most important in regulating water chemistry in large drainages because their large surface-to-volume ratios favor rapid N uptake and processing. Yet small streams are endangered because they are the most vulnerable to human disturbance such as diversion, channelization, and elimination in agricultural and urban environments. Restoration and preservation of small stream ecosystems should be a central focus of management strategies to ensure maximum N processing in watersheds, which in turn will improve the quality of water delivered to downstream lakes, estuaries, and oceans." (Peterson, 2001).

The California Department of Fish and Game report describes the functions and values of riparian habitats as:

> "Riparian vegetation provides bank stability, shade, vegetative material, sediment trapping capabilities and large woody debris to the stream. In addition, it provides habitat for many terrestrial or semi-aquatic species that contribute to the food web of

the stream ecosystem .... The riparian and aquatic habitats are among the richest in biological diversity in the State. Riparian areas depend on the stream courses and flow regimes to maintain healthy ecosystems. Riparian areas support aquatic life. In addition they provide shade and water to many non-aquatic species. Thus riparian areas are essential habitat for many terrestrial invertebrates, amphibians, reptiles and other vertebrate species as well as their aquatic counterparts. In the Central Valley, the State has lost 95 percent of historic salmon habitat because of dams, migration blockages, or severe degradation which makes the areas uninhabitable .... Riparian and aquatic areas are major attractions to humans. Use in these areas consists of both consumptive and non-consumptive activities, which include fishing, hunting, rafting, swimming, wading, wildlife watching, water consumption, boating, timber harvest, and mining." (California Department of Fish and Game, 1994).

The value of riparian habitat and its intrinsic relationship to the dynamic hydrology characteristic of riparian areas is summarized in a recent study which demonstrated that avian and vegetative biodiversity are directly related to natural hydrologic regimes:

"Riparian or bottomland forests provide particularly important habitat for birds. From humid to arid regions, bottomland forests typically support higher bird densities than adjacent uplands. It is generally recognized that the biological diversity associated with such landscape features is in part a function of vegetation patch dynamics, driven by specific disturbance regimes. Riparian forests are structured by the distinctive fluvial geomorphic processes and hydrologic conditions found on bottomlands." (Scott, 2003)

C. Riparian Areas as Habitats for Rare, Endangered, and Threatened Species

Riparian area, especially in the arid and semiarid West are extremely important to maintaining both aquatic and terrestrial biodiversity. The National Academy of Sciences (2002) states that In the Pacific Coast ecoregion a considerable proportion of wildlife species are riparian "obligates" requiring access to riparian habitat to complete all or a portion of their life cycle, i.e., 60 percent of amphibians, 16 percent of reptiles, 34 percent of birds, and 12 percent of mammals. In the drier and arid southwest, 70% of threatened and endangered vertebrate species are in fact riparian obligates. At the same time, in California 50 percent of our fish are at risk, 49 percent of our amphibians, 16 percent of our mammals, and 16 percent of our reptiles (Stein, 2002). Similarly, the California Department of Fish and Game (1994, *op. cit.*) notes that, "...Statewide the Department's list of State and Federal Threatened and Endangered Species (revised in January 1993) includes 20 species of fish. Of the 113 native fish species, 6 percent [of the native taxa] are extinct, 12 percent are officially listed as threatened or endangered, 6 percent deserve immediate listing, 17 percent may need listing soon, 22 percent show declining populations...."

Amphibians are noted as highly dependent on riparian areas, with 40 of the 47 species known to occur in California utilizing them. Thirty-eight percent of reptile species utilize riparian areas at some time in their life cycle. The importance of riparian habitat to birds is exhibited in that "46 percent of land bird species listed as endangered, threatened or of special concern in California require riparian habitat ... [and] over 135 species of California birds depend completely upon riparian systems or use them preferentially at some stage of their life histories." One hundred thirty-three native taxa of mammals are

"limited to or largely dependent on riparian wetlands ... [and].... 21 species and subspecies are particularly vulnerable to loss of habitat."

D. Level of Protection

Since most riparian areas are not jurisdictional wetlands, they are afforded a lower level of regulatory protection under CWA section 404, even though their value to wildlife may be higher than wetland systems (Sudol, 1996).

The National Academy of Sciences' (NAS, 2002) states that, "In sum, existing legal and management protection of the ecological functions and values of riparian areas is inadequate. Even on federal lands, uses of riparian areas are not singled out for special consideration by statute or regulation. Uses of riparian areas on private lands are addressed, if at all, as a matter of local land-use regulation or through a mix of incentive programs. In the absence of making such legal and regulatory changes, it is unlikely that the degradation of riparian areas will be halted or even slowed."

To strengthening the legal framework protecting riparian areas NAS recommends:

States consider designating riparian buffer zones adjacent to waterbodies within which certain activities would be excluded and others would be managed.

Increasing federal and state funding to encourage private riparian landowners to restore and protect riparian areas.

Federal land management agencies promulgate regulations requiring that riparian under their jurisdiction be restored and protected.

Ideally, Congress should enact legislation that recognizes the values of riparian areas and directs federal land management and regulatory agencies to give priority to protecting them.

- Federal agencies should coordinate riparian management activities to improve efficiency and help ensure that protection of riparian values and function does not vary across jurisdictional boundaries.

State should administer the public trust in water and state-owned submerged lands to protect the public interests in properly functioning and ecologically healthy riparian areas.

Use of Instream flow laws to protect riparian areas; manage if river and stream flows to mimic the natural hydrograph.

Implementation of the "Total Maximum Daily Load" Program [CWA section 303(d)] has the potential to protect existing and restore degraded areas nationwide."

REFERENCES:

California Department of Fish and Game. 1994. *Final Environmental Impact Report, Adoption of Regulations for Suction Dredge Mining*. April, 1994.

California Resources Agency. 1994. California Rivers Assessment. Spring Newsletter.

Katibah, F. E. 1985. A Brief History of Riparian Forest in the Central Valley of California: *In* Warner, R. E. and Hendrix, K. M. (eds.), California Riparian Systems – Ecology, Conservation, and Productive Management, pp. 23-29. University of California Press, Berkeley, CA.

National Academy of Sciences. 2002. *Riparian Areas: Functions and Strategies for Management.* National Academy Press, 2102 Constitution Avenue, N. W., Washington, D. C. 20418.

Peterson, J. P., W. M. Wollheim, P. J. Mulholland, J. R. Webster, J. L. Meyer, J. L. Tank, E. Marti, W. B. Bowdwn, H. M., Valett, A. E. Hershey, W. H. McDowell, W. K. Dodds, S. K. Hamilton, S. Gregory, D. D. Morrall. 2001, April. "Control of Nitrogen Export from Watersheds by Headwater Streams." *Science* 292:April 6, 2001, pp. 86-88.

Scott, Michael L., Susan K. Skagen, and Michael F. Merigliano. February 2003. "Relating Geomorphic Change and Grazing to Avian Communities in Riparian Forests." *Conservation Biology 17:1,* pp.284-296.

Stein, B. A. 2002. *States of the Union: Ranking America's Biodiversity.* Nature Conservancy and NatureServe, Arlington, Virginia. [online] http://nature.org/earthday/work/.

Sudol, M., F. 1996. Success of Riparian Mitigation as Compensation for Impacts due to Permits Issued through Section 404 of the Clean Water Act in Orange County, California. *A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Environmental Science and Engineering, University of California Los Angeles.*

U.S. Department of Agriculture. *Proceedings of the California Riparian Systems Conference, 1989. Protection, Management, and Restoration for the 1990's* (September 22-24, 1988 held at Davis, California). Published by the Pacific Southwest Forest and Range Experiment Station, P. O. Box 245, Berkeley, California 94701.

U. S. Environmental Protection Agency Office of Water. 1993. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters: Issued Under the Authority of Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990.

Warner, R. E. and K. M. Hendrix. 1985 (eds.). California Riparian Systems: Ecology, Conservation, and Productive Management. University of California Press, Berkeley, USA.

APPENDIX D

Wetland and Riparian
Functions, Values, and Beneficial Uses

WETLAND and RIPARIAN
FUNCTIONS, VALUES, and BENEFICIAL USES

The following table provides examples of how wetland and riparian functions and values correlate with the beneficial uses of water within the regulatory purview of the State Water Resources Control Board and the Regional Water Quality Control Boards.

FUNCTION	VALUE	BENEFICIAL USE
WATER STORAGE AND RETENTION	Groundwater recharge	GWR
	Attenuate flood flows, flood damage protection	Multiple; e.g., WARM, WILD, REC-2
	Maintain summer stream flows	Multiple, e.g., WARM, COLD, WILD
	Water supply source	FRSH, MUN
	Shoreline Stabilization	Multiple, e.g., REC-2, WARM, WILD
	Maintain fresh and salt water balance in estuaries	Multiple, e.g., SHELL, MAR, WILD
	Photography, aesthetic appreciation, recreational boating, other recreation, scientific study, education	REC-2
	Livestock watering	AGR
SEDIMENT AND NUTRIENT RETENTION AND CYCLING	Sediment and pollutant removal	Multiple, e.g., FRSH, WARM, REC-1, REC-2
	Ecosystem support, e.g., sequestering C; cycling of N, S, CH_4, CO_2	Multiple, e.g., REC-2, WARM, WILD

FUNCTION	VALUE	BENEFICIAL USE
SUBSTRATE FOR BIOTA	Habitat for fish and other aquatic biota	Multiple, e.g., WARM, COLD, SPAWN
	Habitat for waterfowl and other terrestrial wildlife	WILD
	Shellfish production	SHELL
	Streambank stabilization	Multiple, e.g., REC-2, WARM, WILD
	Support endangered species	RARE
	Spawning and nursery habitat	MAR, SPAWN
	Nature study, birding, hunting and fishing	REC-2

Key to Beneficial Uses

AGR	Agricultural Supply
FRSH	Freshwater Replenishment
GWR	Groundwater Recharge
MAR	Marine Habitat
MUN	Municipal and Domestic Water Supply
RARE	Preservation of Rare and Endangered Species
REC-1	Water Contact Recreation
REC-2	Non-Water Contact Recreation
SHELL	Shellfish Harvesting
SPAWN	Fish Spawning
WARM	Warm Fresh-Water Habitat
WILD	Wildlife Habitat

APPENDIX E

Comparison of F&G Code §1600 et seq. and CWA §401

COMPARISON OF F&G CODE §1600 et seq. AND CWA §401

F&G Code §1600 STREAMBED ALTERATION	CWA §401 WATER QUALITY CERTIFICATION
Applies to streams and lakes.	Applies to all waterbodies (e.g., oceans, wetlands).
Protects fish and wildlife.	Protects all beneficial uses (e.g., recreation, domestic supply, etc.).
Quasi-regulatory: an agreement with binding arbitration.	Regulatory: a permit with appeal to SWRCB, State courts.
Does not apply to federal activities.	Applies to discharges, including federal.
Is preempted by federal law (e.g., hydropower projects).	Is not preempted by federal law.

APPENDIX F

January 1, 2001 - December 31, 2001
Fill and Dredge Totals (Known)

January 1, 2001-December 31, 2001

FILL AND DREDGE TOTALS (KNOWN) [1]

Region	No. of Projects	Pct. Records With Ac/ CY Data [2 3]	Pct. Complete Records [3 4]	Wetland Fill Acres	Riparian Fill Acres	Streambd Fill Acres	Lake Fill Acres	Ocean Fill Acres	Temp Fill Acres [5]	Total Fill Acres	Comp Mitig Acres [6]	Dredge CY x1000
1	77	88	73	20.598	1.066	238.001	0	0.105	47.215	259.770	24.084	1.28
2	196	69	61	72.320	8.469	8.219	0	6.175	16.951	95.183	239.525	967.46
3	95	90	74	0.625	2.187	14.986	4.170	1.692	8.792	23.660	1.064	1331.40
4	88	99	91	23.232	9.281	34.929	0	6.320	32.275	73.762	114.949	1155.05
5F	22	100	86	62.000	0.037	1.591	0.981	0	0.820	64.609	0	5.67
5R	52	94	73	17.041	9.290	119.393	1.290	0	6.564	147.014	22.827	104.82
5S	235	81	63	77.797	5.618	123.179	3.110	0	36.622	209.704	162.086	906.36
6T	16	80	73	24.030	0	0.943	8.783	0	15.020	33.756	0	0
6V	12	92	67	0	17.430	11.459	0.144	0	15.789	29.033	0	0
7	17	59	18	0	0	127.910	0	0	4.150	127.910	0	4.32
8	56	95	84	7.924	5.618	28.085	5.940	0.092	13.879	47.659	134.984	3.53
9	120	91	60	18.416	5.106	12.389	0.290	0.295	6.863	36.496	101.314	2001.30
SB	6	100	100	4.250	0	6.577	0	0	9.967	10.827	2.660	0
Total	992	83	69	328.233	64.102	727.663	24.708	14.679	214.906	1159.386	803.493	6481.20

1. Due to incomplete reporting, actual filled area and dredge volume may be larger; see "Percent Records with Ac/CY Data" column. "Fill" includes permanent fill, temporary construction disturbance ("Temp Fill" column), and excavation. Columns do not include acreage/CY figures for denied projects.

2. "Pct. Records With Ac/CY Data" is the percent of RWQCB 401 actions which specify a fill acreage or dredge volume. "Percent Records With Ac/CY Data" does not include Notifications submitted directly to the SWRCB.

3. With large data sets, rounding errors may cause apparent discrepencies between (1) the sum of the number of records calculated by applying the displayed percentages to the "No. of Projects" for each region and (2) the displayed column total.

4. "Percent Complete Records" is the percent of 401 actions which include information specified in SWRCB guidance: (1) receiving water name, (2) applicant name, (3) Corps permit type, (4) receiving water category (wetland, riparian, streambed, lake, or ocean), (5) fill acres (permanent and temporary) or dredge volume, and (6) type and acreage of compensatory mitigation. Actions on general permits are noted as "complete" even if they lack specific water body or acre/CY data.

5. "Temp Fill Acres" is the sum of filled acres on which impacts have been determined to be temporary; they are also included in columns to the left and in "Total Fill Acres".

6. "Comp Mitig Acres" are acres created, restored or preserved as mitigation for fill projects; they are not included in "Total Fill Acres". Mitigation is not necessarily in-kind.

APPENDIX G

January 1, 2002 - December 31, 2002
"Isolated" Waters - Fill and Dredge Totals
(Known)

January 1, 2002-December 31, 2002

"ISOLATED" WATERS - FILL AND DREDGE TOTALS[1] (KNOWN)

Region	No. of Projects	Pct. Records With Ac/ CY Data[2 3]	Pct. Complete Records[3 4]	Wetland Fill Acres	Riparian Fill Acres	Streambd Fill Acres	Lake Fill Acres	Ocean Fill Acres	Temp Fill Acres[5]	Total Fill Acres	Comp Mitig Acres[6]	Dredge CY x1000
1	7	71	14	1.240	0	0	0	0	0	0	0	0
2	16	56	19	2.750	0	0	0.620	0	0	0	0	0
3	1	100	0	0.200	0	0	0	0	0	0	0	0
4	7	100	0	150.100	54.210	0.100	0	0	0	0	0	0
5F	9	78	0	11.231	0.717	0.123	0	0	0	0	0	0
5R	0	-	-	0	0	0	0	0	0	0	0	0
5S	31	94	10	27.916	0.005	11.650	1.590	0	0	0	0	0
6T	0	-	-	0	0	0	0	0	0	0	0	0
6V	5	60	0	0.002	6.000	0	45.000	0	0	0	0	0
7	3	33	0	0	0	0	0.300	0	0	0	0	0
8	1	100	0	0	0.020	0	0	0	0	0	0	0
9	2	50	0	0.120	0	0	0	0	0	0	0	0
SB	0	-	-	0	0	0	0	0	0	0	0	0
Total	82	78	59	193.559	60.952	11.873	47.510					

1. Due to incomplete reporting, actual filled area and dredge volume may be larger; see "Percent Records with Ac/CY Data" column. "Fill" includes permanent fill, temporary construction disturbance ("Temp Fill" column), and excavation. Columns do not include acreage/CY figures for denied projects.

2. "Pct. Records With Ac/CY Data" is the percent of RWQCB 401 actions which specify a fill acreage or dredge volume. "Percent Records With Ac/CY Data" does not include Notifications submitted directly to the SWRCB.

3. With large data sets, rounding errors may cause apparent discrepencies between (1) the sum of the number of records calculated by applying the displayed percentages to the "No. of Projects" for each region and (2) the displayed column total.

4. "Percent Complete Records" is the percent of 401 actions which include information specified in SWRCB guidance: (1) receiving water name, (2) applicant name, (3) Corps permit type, (4) receiving water category (wetland, riparian, streambed, lake, or ocean), (5) fill acres (permanent and temporary) or dredge volume, and (6) type and acreage of compensatory mitigation. Actions on general permits are noted as "complete" even if they lack specific water body or acre/CY data.

5. "Temp Fill Acres" is the sum of filled acres on which impacts have been determined to be temporary; they are also included in columns to the left and in "Total Fill Acres".

6. "Comp Mitig Acres" are acres created, restored or preserved as mitigation for fill projects; they are not included in "Total Fill Acres". Mitigation is not necessarily in-kind.

APPENDIX H

State Water Resources Control Board

CWA §401 Water Quality Certification Program

§401 Program Scope and Strategy

State Water Resources Control Board

CWA §401 Water Quality Certification Program

§401 PROGRAM SCOPE AND STRATEGY

December 19, 2002

The State's Water Quality Certification (WQC) Program was formally initiated in 1990 in response to the requirements of Clean Water Act (CWA) §401. Issuing WQC for discharges requiring U.S. Army Corps of Engineers' permits for fill and dredge discharges remains a core responsibility. But the Program has evolved into also being the State's *de facto* wetland protection and hydromodification regulation program.

This document clarifies the Program's scope, presents State and Regional Board staff's collective vision for a more effective Program, and articulates program goals and objectives. It directly guides the activities of the State Water Resource Control Board's (State Board's) WQC Unit and indirectly affects the programs of the Regional Water Quality Control Boards (Regional Boards).

The *Scope and Strategy* was reviewed and approved by the State/Regional Board Water Quality Certification Program Coordinating Committee (Corcom) at its August 1, 2001, November 7, 2001, and October 30, 2002 meetings and by the Regional Board Assistant Executive Officers at their November 18, 2002 meeting.

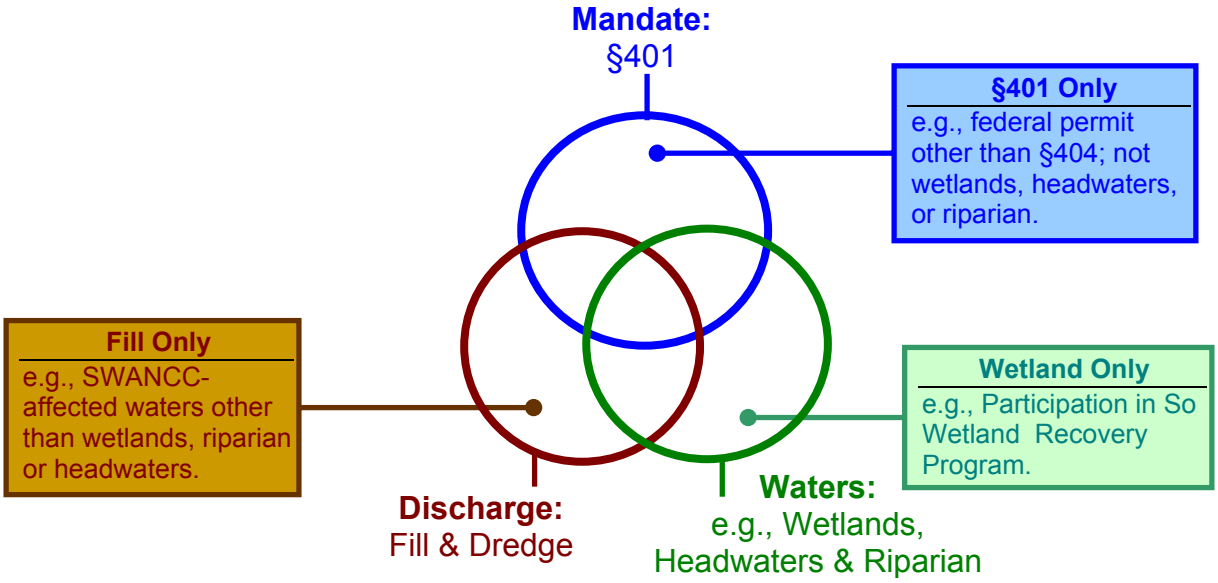
PROGRAM SCOPE

The scope of the WQC Program is defined by the mandates, discharge types, and receiving waters for which it has responsibility. These are listed below:

- Mandates
  - CWA §401
  - Porter-Cologne Water Quality Control Act
  - the State and federal "No Net Loss" Policies for wetland,
- Discharge types - Fill and dredged material
- Waters - All waters of the State, including wetlands, headwaters, and riparian areas.

There is substantial, but not complete, overlap among these responsibilities. Some program activities involve only one or two of them as diagrammed below:

WQC Program Scope



The three overlapping circles represent overlapping areas of Program responsibility. Some Program activities involve only **ONE** of these responsibilities, as described in the text boxes above.

SPECIAL RESPONSIBILITIES

The WQC Program protects all the waters within its regulatory jurisdiction. However, the Program has special responsibilities in regard to some waterbody types and discharge impacts which are not systematically addressed by other State and Regional Board programs. These include:

Wetlands, Riparian Areas, and Headwaters

The WQC Program's jurisdiction over fill discharges puts it in the front line of protection for wetlands, riparian areas, and headwater streams. Regulatory attention to these waterbodies is necessitated by:

- the State and federal "No Net Loss" Policies for wetlands,
- the vulnerability of these waters to future impacts from projected population growth and land development in California[1],
- the high habitat value of these waters,

[1] I.e., 15 percent population growth by 2010, 31 percent by 2020, 69 percent by 2040. State of California, Department of Finance, *County Population Projections with Age, Sex, and Race/Ethnic Detail*, December 1998

- the basin-wide value of these waters for pollutant removal, floodwater retention, channel stability, and habitat connectivity,
- the high number of special-status species associated with these waters and their associated habitats,
- the high level of public and legislative interest in these waters,
- the high percentage of historic losses of these waters in California,
- the absence of any other State or Regional Board program focusing on these waters.

Special-Status Species

The WQC Program's protection of wetlands, headwater streams, and riparian areas frequently involves protection of federal and/or State-listed special-status species (the RARE beneficial use), because many such species depend, directly and indirectly, on these waterbody types.

Hydromodification

The WQC Program's regulation of in-stream fill and excavation projects[2] frequently requires attention to project-induced changes to channel form, flow regime, and sediment supply. The interaction among these three fundamental fluvial parameters creates the physical conditions which support habitat-dependent and other beneficial uses. Many projects affect these characteristics, resulting in flooding, bank erosion, and other adverse impacts to beneficial uses[3] up- and down-stream. A frequent result are attempts to protect property through more such projects, eventually culminating in a nearly total loss of natural stream functions and beneficial uses ("the L.A. River syndrome"). In addition to in-stream projects, Regional Boards use WQC to regulate the hydromodification impacts of increased stormwater flows from upland developments.

Watershed-Level Impacts

In perhaps no other program is the need for basin-level analysis and protection so apparent. Project-specific regulation is essential, but cannot by itself assure the integrity of wetlands, riparian areas, and headwater streams[4], especially given the population growth projected for California. Moreover, since these waters are disproportionately important in maintaining basin-wide beneficial uses[5], project-specific regulation alone will not achieve the goals of the State Board's *Strategic Plan*. The WQC Program is often operating at the expanding margin of the available skills and tools for managing watershed-level impacts.

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[2] E.g., channel reconfiguration, levees, bank hardening, abutments and piers, road and utility crossings, gravel mining, flood control excavation.

[3] E.g., WARM, COLD, MIGR, SPAWN, WILD, RARE.

[4] See for example, National Academy of Sciences, *Compensating for Wetland Losses Under the Clean Water Act*, Summer 2001.

[5] See for example, Peterson et al, "Control of Nitrogen Export from Watersheds by Headwater Streams", *Science,* 292:86, April 6, 2001.

PROGRAM GOALS AND OBJECTIVES

The State Board's WQC Unit will pursue the three following goals as discussed below :

Goals:

1. Support the Regions' existing programs
2. Strengthen our watershed perspective
3. Improve the Program.

1. Support the Region's Existing Programs

Supporting and enhancing the Regions' programs is the paramount job of the WQC Unit. The Unit, with support from Office of Chief Counsel, will continue doing this through:

- Training - CEQA, wetland delineation, regulating specific types of discharges, functions and values of specific waterbody types, etc.,
- Guidance - compensatory mitigation standards, enforcement, evaluation protocols for specific project types, etc.,
- Consultation - responding to technical, legal, and administrative queries from the Regions,
- Management - overall coordination, budget augmentation proposals, contract management, program tracking and reporting.

In setting task priorities, the WQC Unit will consider (1) the Regions' preferences, (2) the feasibility of successfully completing the work with available resources, (3) the mandated activities specified for contract funds, and (4) the level of State Board management support.

The WQC Unit may also propose new or revised policy or regulation in response to changing circumstances (e.g., SWANCC).

2. Strengthen our Watershed Perspective

The current approach of the WQC Program is to protect waters on a project-by-project basis. As discussed above, strengthening our watershed perspective is also necessary. We will pursue the following objectives:

Objectives:

- develop ways to protect the basin-level functions of wetlands, headwater streams, and riparian areas, including pollutant removal, flood storage, and habitat-connectivity,
- systematically address the potential channel destabilizing effects of proposed projects,
- encourage low-impact project designs through complying with our CEQA responsibilities and otherwise outreaching to stakeholders,
- address cumulative impacts through complying with our CEQA responsibilities and by explore basin-level assessment methodologies,
- coordinate with other State and Regional Board programs, and with other agencies and stakeholders, in support of explicit watershed-level goals.

The WQC Unit will support the above elements by focusing training, guidance, technical support, consultation, and management support for the Regions' programs; through its direct regulation of multi-region projects; and by cultivating partnerships with related programs and external stakeholders.

3. Improve the Program

State and Regional Board staffs envision the following improvements to the WQC Program[6] and have identified related objectives:

Objectives:

1. Programmatic:
   a. increase staff resources,
   b. improve monitoring and enforcement,
   c. promote regulatory streamlining (e.g., through general permits and certifications),
   d. improve inter-program communication[7]
   e. improve inter-agency coordination[8].

2. Technical:

   Develop ability to systematically analyze and appropriately regulate the water quality impacts of:

   a. hydromodification,
   b. cumulative impacts,
   c. watershed-level impacts.

3. Regulatory:

   More effectively:

   a. protect habitat, including in-stream, riparian, and corridor,
   b. protect recreation values,
   c. require, monitor, and enforce compensatory mitigation to achieve State no net loss/net gain goals,
   d. coordinate and integrate treatment and natural wetlands.

4. Outreach:

   Conduct outreach to:

[6] These ideas were developed and refined at the August 1, 2001 and November 7, 2001 meetings of the State/Regional Board Corcom.

[7] Key programs include Stormwater, Nonpoint Source, Watershed Initiative, and (in some cases) TMDLs.

[8] Key agencies are the Department of Fish and Game, Southern California Wetland Recovery Project, Bay Area Wetland Recovery Program, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service.

a. achieve community awareness of watershed/water quality issues,
b. encourage low-impact development designs, e.g., through the CEQA process.

IMPLEMENTATION

The principles presented in this document will inform our programmatic and project-specific decisions, including selection of contract projects, identification of needed training and technical support, and development of guidance. We will review this document annually and recommend changes as needed.