

Part IV

Agricultural Waters Task Force Report

AGRICULTURAL WATERS TASK FORCE

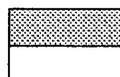
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AGRICULTURAL WATERS TASK FORCE ATTENDANCE ROSTER

NAME	Interest Category	M/A	April 25	May 31	June 27	July 25	Aug 22	Sept 26
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Stephanie Rose	SWRCB	A						
Don Nelson	POTW	A						
Julio Guerra	POTW	M						
Dennis Huff	Stormwater	M						
Stephen Murril	Industry	M						
*Michael Kiado	Public Health	M						
Maria Rea	USEPA	M						
Alyoda Mangelsdorf	USEPA	M						
Randall Stocker	Water Supply	M						
Steve Knell	Water Supply	M						
Steve Shaffer	C.D.F.A.	M						
Joe McGahan	Agriculture	M						
Michael Morse	Fish & Wildlife	A						
Brian Finlayson	Fish & Wildlife	M						
Kenneth Coulter	RWQCB	A						
Jeanne Chilcott	RWQCB	M						
Kati Buehler	Agriculture	A						
Jeff Jaraczski	Water Supply	A						
Marshall Lee	C.D.P.R.	M						
Nancy Reichard (Facilitator)		M						
Arthur Whipp	Environmental	A						
Deborah Donovan	Industry	A						
Gene R. Anderson	Stormwater	A						
Gail Linck	SWRCB	A						
Elston Grubaugh								
**Dave Smith	USEPA	M						
Mario Menesini	Environmental							
Al Vargas	RWQCB							
Jerry Troyan								
David Cohen								
Dave Kennedy								
Kathie Keber								
Gene R. Anderson								
Elizabeth Watson								
Markus Meier								
Dick Marshall								
Glen Bardzel								

M = Member

A = Alternate



= Present

= Absent

* M.Kiado resigned in June, Terry Young also resigned.

**Dave Smith substituted for A. Mangelsdorf.

**REPORT OF THE
AGRICULTURAL WATERS TASK FORCE
FOR CONSIDERATION
OF ISSUES RELATED TO THE
INLAND SURFACE WATERS PLAN**

October 1995

AGRICULTURAL WATERS TASK FORCE REPORT

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EXECUTIVE SUMMARY

The Agricultural Waters Task Force (AWTF) was formed by the State Water Resources Control Board (SWRCB) to make recommendations on how to best implement water quality standards in agricultural waters. The recommendations will be used by the SWRCB during the development of the Inland Surface Waters Plan (ISWP). Agricultural waters include natural water bodies dominated by agricultural drainage or management, natural water bodies which have been modified for the purpose of agricultural water management, and water bodies constructed for conveyance of agricultural water supply and/or drainage.

Throughout the course of its meetings, the AWTF agreed that agricultural water bodies are unique and may not support full beneficial uses traditionally associated with perennial, natural streams. The recommendations in this report attempt to address the limitations in the current regulatory framework for water quality control in agricultural waters. The hydrology of agricultural regions of the arid West is composed of managed flows and man-made channels which create limitations to fully supporting beneficial uses associated with perennial streams in natural hydrologic regimes.

Task force members initially identified a draft series of issues pertinent to agricultural waters (Appendix B). Due to time constraints, all the issues could not be addressed. However, most were discussed to a limited degree within one of the final issue categories presented in this document: policy; definitions; exemptions; categorization of water bodies; beneficial uses; objectives; and implementation.

The AWTF did reach consensus on a number of recommendations, which are summarized below. In addition, various options (nonconsensus), the reasoning behind most of the recommendations, as well as the reasoning and concerns with each option are included in the body of the report to provide background to the State Water Board when reviewing this document.

DEFINITIONS

The AWTF believes it is important to define the terminology used when discussing agricultural waters in the Inland Surface Waters Plan. The terms defined in the body of the report are intended to be used as working definitions, not as recommendations.

EXEMPTIONS FROM WATER QUALITY OBJECTIVES

The AWTF recognized the need to clearly indicate what water bodies and activities do not fall under regulation of the federal Clean Water Act or the Porter-Cologne Water Quality Control Act and therefore do not require the implementation of water quality objectives. The AWTF achieved consensus on the following three recommendations, and presented additional options on which consensus was not reached.

Recommendation #1: Exemption for Water in Agricultural Fields and On-Farm Ancillary Structures

Objectives set forth in the ISWP do not apply to water in agricultural fields, including but not limited to furrows, beds, and checks, nor to on-farm ancillary structures which

generally include ditches, sumps, and ponds contained on lands associated with agricultural operations. The determination of these agricultural production areas and what constitutes an ancillary structure shall be made by the Regional Boards.

Objectives do not apply to agricultural evaporation ponds or lagoons designed to meet requirements of the federal Clean Water Act or the Porter-Cologne Water Quality Control Act.

Recommendation #2: Guidance Document for Ancillary Structures

The SWRCB should prepare a guidance document concerning what may be considered an ancillary structure. This document would include a basic definition and criteria with examples, so Regional Boards can more easily and consistently make exemption determinations.

Recommendation #3: Exemption for Individual Closed Recirculating Systems

Objectives do not apply to closed recirculating systems (tail water recovery or closed irrigation systems) that service individual farms. It is, however, recognized that discharges to surface waters from such systems are subject to the ISWP. The State Water Board needs to provide guidance on what constitutes an individual farm for purposes of this exemption.

CATEGORIZATION OF WATER BODIES

Due to the unique hydrologic characteristics of agricultural waters, the AWTF developed three recommendations and five flow chart options for categorizing agricultural water bodies.

Recommendation #1: Water Body Categorization Framework

The AWTF supports a water body categorization framework similar to the one proposed by the SWRCB in the 1991 Inland Surface Waters Plan and recommends that, at a minimum, the Plan present a logical decision tree which would identify natural, agriculturally dominated natural, reconstructed natural, and constructed agricultural water bodies. This decision tree should be used as guidance by the Regional Boards, with the final category designations adopted through a public hearing process.

Recommendation #2: Flow Charts to Aid Categorization

The five flow chart options presented in the report should be evaluated and used to the maximum extent practicable as State Board staff prepares a water body categorization decision tree.

Recommendation #3: Reliance on Water Management Agencies for Categorization

Regional Boards would rely on the water management agencies to initially categorize the water bodies within their jurisdiction. Any water bodies not characterized would default to

the natural water body category for the purpose of assigning appropriate Beneficial Uses and numeric objectives. If there is disagreement with the categorization of a water body, it will be resolved through a Regional Board public hearing process. Regional Boards would then adopt the final categorization and submit it to the State Board for final adoption.

BENEFICIAL USE DESIGNATIONS

The AWTF agreed that water bodies dominated by agricultural drainage are unique waters which may not have all of the hydrologic, ecological and water quality characteristics necessary for the full attainment of the beneficial uses normally associated with perennial streams. The State at this time does not recognize that these water bodies have distinct beneficial uses. Therefore, the AWTF reviewed the characteristics and developed recommendations that address beneficial uses for these unique types of agricultural water bodies.

Recommendation #1: Recognition that Agricultural Waters are Unique

The State should recognize that water bodies dominated by agricultural drainage are unique waters which may not have all of the hydrologic and ecological characteristics and water quality necessary for the full attainment of the beneficial uses normally associated with perennial streams.

Recommendation #2: Ancillary Structures and Individual Closed Recirculating Systems do not Require Beneficial Use Designations

Exempted ancillary agricultural structures and individual closed recirculating systems do not require the designation of beneficial uses.

Recommendation #3: Need for New or Limited Beneficial Uses

The State Board should evaluate whether new or limited beneficial use categories would be more appropriate for agricultural dominated natural water bodies and constructed water bodies than the use categories currently recognized.

Recommendation #4: Protection of "Existing" Uses

Beneficial uses should be designated which, at a minimum, protect existing uses. Definition of existing uses should be clarified (see Policy Issue #3 in "Other Policy Issues" section).

WATER QUALITY OBJECTIVES

In the AWTF's limited time, it was not possible to develop and assign actual limits and levels of constituents to protect designated beneficial uses. The task force believed its responsibility was to provide guidance and input to the State Water Board in setting the appropriate limits and levels for water quality objectives for agricultural waters.

The Regional Boards are at varying levels in the process of designating or assigning beneficial uses to water bodies in their regions. Given these differences, objectives may need to be assigned in some water bodies to protect downstream resources even if beneficial uses are not yet designated.

The AWTF reviewed both narrative and numeric objectives. Consensus was achieved on one recommendation and several nonconsensus options were developed, as well.

Recommendation #1: Narrative Toxicity Objective for All Non-Exempted Inland Surface Waters

Upon adoption of the ISWP, a narrative toxicity objective should apply to all non-exempted inland surface waters. This narrative objective will be considered a permanent baseline.

Potential language: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life" (from Region 5 Basin Plan). For agricultural dominated and constructed water bodies, the State Board should recognize that aquatic habitat is likely to exist and be the most limiting use. The narrative objective should be implemented as follows:

<u>Water Body</u>	<u>Objective</u>
Agricultural dominated natural water bodies	No acute or chronic toxicity
Constructed agricultural water bodies	No acute toxicity

Flexibility is needed for objectives that would apply on a seasonal basis and during extremely high and low flow years.

IMPLEMENTATION

Recommendation #1: Goals

The Task Force recommends that implementation follow a logical sequence that allows for consistency while being flexible; prioritizes water quality problems while allowing realistic timelines; and allocates appropriate funding while avoiding duplication of effort. Implementation actions should consider a watershed philosophy where appropriate with the Regional Boards forming the initial watershed boundaries. The Regional Boards should identify watershed boundaries within their regions with the help of local stakeholders, to help prioritize areas of impairment and also determine if the watershed approach is the most effective mechanism for mitigating a beneficial use impairment. The steps in the implementation process should include: designation of area boundaries; initial assessment; prioritization of water quality concerns; development of a management plan; evaluation of the program; and as needed, refinement of the management plan, assessment/reassessment of beneficial uses and objectives, and further regulatory actions. Beneficial use impairments will be regulated through provisions of the State Nonpoint Source Management Plan (the three tiered process).

Recommendation #2: Hierarchy For Regulation

The following hierarchy should be followed when implementing the ISWP in agriculturally dominated systems:

- 1) Protection of downstream beneficial uses in natural water bodies.
- 2) Protection of beneficial uses to the extent to which they occur in agriculturally dominated natural streams.
- 3) Protection of beneficial uses to the extent to which they occur in constructed facilities.

The State should recognize that agricultural water management may provide net ecological benefits with incidental beneficial uses which would not otherwise be available. It is a goal of the ISWP to provide protection of incidental uses through reasonable management activities. Therefore, the hierarchy should be used to prioritize implementation activities, recognizing that not all beneficial uses and objectives will be attained in the short-run.

Recommendation #3: Process

The Task Force recommends that the overall implementation of the ISWP occur in two phases. The initial phase would consist of the planning process during which time water bodies are categorized; sub basins are developed within Regional Board boundaries to facilitate assessment; assessments are conducted; and areas as well as water bodies of concern are prioritized. The second phase would consist of actions taken based on the findings of the initial planning and assessment phase. The table below summarizes the two-phase process.

Table 1. Overall Inland Surface Water Plan Implementation in Agriculturally Dominated Water Bodies.

I. Planning

- A. Categorization of water bodies
- B. Development of sub basins for assessment
- C. Assessment
- D. Prioritization of areas and water bodies of concern

II. Response to Findings from the Planning Phase

- A. Area and/or water body not impaired or threatened
 1. Watershed management group formation encouraged
- B. Area and/or water body prioritized
 1. Activation of relevant interagency agreements
 2. Where action by Regional Board and State Board necessary
 - a. Actions as defined through the NPSMP
 - b. Actions as defined through a watershed management program

Recommendation #4: Guidance On A Draft Implementation Plan

The SWRCB should consider using the draft Implementation Plan found in Appendix D for guidance as it develops the ISWP. All the reasoning supporting the draft Implementation Plan is included in the appendix.

OTHER POLICY ISSUES

The AWTF discussed a number of issues that did not fit neatly into the sections of this report but were considered too important to simply drop. While some of these issues are being more fully addressed by other task forces, these points are meant to focus the agricultural waters perspective on those issues.

Recommendation #1: Incorporation of Basin Plans' Existing Site Specific Objectives into the ISWP

Site specific objectives currently adopted into Basin Plans should be incorporated into the ISWP as site specific objectives for those water bodies.

Recommendation #2: Water Conservation Clause

The State Water Board needs to identify if and how water conservation will be achieved in areas where water conservation measures result in decreased water quality, reduced groundwater recharge, and potential loss of wildlife habitat.

Recommendation #3: Clarification of Term "Existing"

The Task Force recommends the State Water Board move to clearly define the term "existing" as it is used in the context of both aquatic life and beneficial uses.

Recommendation #4: Net Environmental Benefit

"Net Environmental Benefit" is a concept that deserves additional consideration and should be reviewed and defined by the State Water Board in terms of meeting water quality objectives.

Recommendation #5: Further Investigation of Protocols for Toxicity Monitoring

Methodologies and species used for determining acute and chronic toxicity must be scientifically defensible and approvable by the regulatory agencies. Further investigation of protocols may be warranted for agricultural water systems.

Recommendation #6: Economic Considerations

Economic considerations must be factored into the development of the ISWP as required by the Porter-Cologne Water Quality Control Act. The State Water Board should develop clear guidelines for how economics will be evaluated in agricultural waters. The guidelines should be designed to meet the requirements of both State and federal laws.

INTRODUCTION

The Agricultural Waters Task Force (AWTF) was formed by the State Water Resources Control Board (SWRCB) to make recommendations on how to best implement water quality standards in agricultural waters. Agricultural discharges are recognized as a significant source of impairment in inland surface waters. The recommendations will be used by the SWRCB during the development of the Inland Surface Waters Plan (ISWP). Agricultural waters include natural water bodies dominated by agricultural drainage or management, natural water bodies which have been modified for the purpose of agricultural water management, and water bodies constructed for conveyance of agricultural water supply and/or drainage.

Federal water quality regulations do not make provisions for the uniqueness of the hydrology of agricultural regions of the arid West. These areas are characterized by large scale water projects for flood control and water distribution. In some cases, these projects cause the disruption of the natural hydrology which may eliminate, reduce, or perhaps augment flow in natural streams. In addition, these projects have created a network of constructed channels for the conveyance of agricultural water supply and drainage. The managed hydrology may not fully support beneficial uses normally associated with perennial streams due to low and intermittent flow, lack of appropriate habitat, and water quality limitations. The recommendations in this report attempt to address some of the limitations in the current regulatory framework.

The AWTF used an interest-based approach in developing its recommendations. The AWTF was comprised of a broad range of interests, with representatives from the following groups:

- Agriculture
- Environmental concerns
- Fish and wildlife
- Industry
- Public health
- Publicly owned treatment works
- Regional Water Quality Control Boards
- State Water Resources Control Board
- Storm water
- U.S. Environmental Protection Agency
- Water supply

Representatives of the California Department of Food and Agriculture and the California Department of Pesticide Regulation were also included on the Task Force due to their direct knowledge and involvement with issues pertaining to agricultural waters. AWTF members and the interest group they represent are listed in Appendix A.

Task force members initially identified a draft series of issues pertinent to agricultural waters which are summarized in Appendix B. Due to time constraints, all the issues could not be addressed. However, most were discussed to a limited degree within one of the final issue categories presented in this document: policy; definitions; exemptions; categorization of water bodies; beneficial uses; objectives; and implementation.

Throughout the course of its meetings, the AWTF agreed that agricultural water bodies are unique and that they may not support full beneficial uses traditionally associated with perennial, natural streams.

The goal of the AWTF, as identified by its members, was to:

Develop recommendations for the SWRCB regarding how to provide reasonable protection for beneficial uses of agricultural waters. Throughout the process of developing recommendations, the Task Force will consider economics, consistency vs. flexibility, and the interface with issues being addressed by the other task forces.

Bringing such diverse interest groups to consensus on the specific details necessary to meet the goal was difficult. Therefore, in addition to consensus recommendations with accompanying reasoning, various options (non-consensus) for reaching the ultimate goal have been presented for each major issue identified. The reasoning for the options as well as any concerns (non-consensus) with those options have been included to provide background to the SWRCB when reviewing this document.

DEFINITIONS

The terms defined below are used throughout this document. They are intended to be used as working definitions only. The Task Force did not have adequate time to discuss the full ramifications of the exact wording for each defined term, so these definitions are not to be considered recommendations.

Agricultural (ag) dominated water body: Greater than 50 percent of the flow comes from agricultural discharges during a significant portion of the irrigation season.

Agricultural drain: Constructed channel or reconstructed natural waterway that either conveys agricultural drainage or agricultural supply water and agricultural drainage.

Agricultural supply channel: Constructed channel or reconstructed natural waterway that only conveys agricultural supply water.

Ancillary structures: Structures that generally include ditches, sumps and ponds contained on land associated with agricultural operations, with final determinations to be made by the Regional Boards.

Beneficial uses: As defined in the Porter-Cologne Water Quality Control Act, "(they) may be protected against quality degradation (and) include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; and preservation of fish, wildlife, and other aquatic resources or preserves."

Closed recirculating systems: Constructed conveyance, storage and other facilities used to contain agricultural water to a specifically defined area under coordinated management for the purposes of promoting efficient water use, energy savings, and/or agricultural chemical management. Closed recycling systems, closed irrigation systems, and tail water recovery systems are all included.

Dominated: Greater than 50 percent of the flow in a waterway.

Incidental use: A use that occurs as a direct result of the presence and management of agricultural water, and has no direct relationship to the intended use of the water (irrigation, crop and soil management).

Interim objective: an objective that is fully effective with respect to all current regulatory programs; however, it is not to be considered a permanent or final objective that would be subject to antidegradation or other downgrading restrictions.

Irrigation season: The period of time when agricultural water is applied to or removed from agricultural land for the purpose of producing a crop.

Limited beneficial use: A Beneficial Use that recognizes the adaptation of aquatic and other organisms to the habitat resulting from local hydrology.

Maintenance and operation activities: Routine activities necessary for the upkeep of facilities in order to provide for their efficient, economical, extended usefulness, and safe conveyance of water.

Natural waterway: Denoted as a stream, creek, or slough by the USGS on its maps; by the local water management agency; or by the Regional Board subject to a public hearing process, with final approval by the SWRCB.

Reconstructed natural water body: Extensively realigned and modified so that it no longer has the appearance and alignment of a natural waterway.

Significant portion: Refers to the amount of time a waterway is dominated by agricultural discharges, and is based on normal year flows and historical cropping patterns.

Totally dependent: Greater than 95 percent of the flow in a waterway.

Watershed management approach: A geographic-based planning and implementation process based on local stakeholder participation to provide water resource protection, enhancement and restoration while balancing economic and environmental impacts.

EXEMPTIONS FROM WATER QUALITY OBJECTIVES

The AWTF recognized the need to clearly indicate what water bodies and activities do not fall under regulation of the federal Clean Water Act or the Porter-Cologne Water Quality Control Act and therefore do not require the implementation of water quality objectives. The AWTF achieved consensus on the following three recommendations, and presented additional options on which consensus was not reached.

RECOMMENDATION #1: EXEMPTION FOR AGRICULTURAL FIELDS AND ON-FARM ANCILLARY STRUCTURES

Objectives set forth in the ISWP do not apply to water in agricultural fields, including but not limited to furrows, beds, and checks, nor to on-farm ancillary structures which generally include ditches, sumps, and ponds contained on lands associated with agricultural operations. The determination of these agricultural production areas and what constitutes an ancillary structure shall be made by the Regional Boards.

Objectives do not apply to agricultural evaporation ponds or lagoons designed to meet requirements of the federal Clean Water Act or the Porter-Cologne Water Quality Control Act.

RECOMMENDATION #2: GUIDANCE DOCUMENT FOR ANCILLARY STRUCTURES

The SWRCB should prepare a guidance document concerning what may be considered an ancillary structure. This document would include a basic definition and criteria with examples, so Regional Boards can more easily and consistently make exemption determinations.

RECOMMENDATION #3: EXEMPTION FOR INDIVIDUAL CLOSED RECIRCULATING SYSTEMS

Objectives do not apply to closed recirculating systems (tail water recovery or closed irrigation systems) that service individual farms. It is, however, recognized that discharges to surface waters from such systems are subject to the ISWP. The State Water Board needs to provide guidance on what constitutes an individual farm for purposes of this exemption.

Concern

The Task Force members were unable to agree on what comprises an individual farm.

Option 1

Nothing in the ISWP shall prevent reasonable routine maintenance of constructed and reconstructed canals and drains provided these activities do not cause violations of the Plan in other waters of the State. Maintenance includes dewatering, lining, dredging, and the physical, biological, or chemical control of weeds, algae, rodents and other pests.

Reasoning

The federal Clean Water Act specifically exempts maintenance activities in agricultural drains from NPDES permitting under sec. 1344 (f) (1) (C), which states:

“The discharge of dredged or fill material (C) for the purpose of construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance of drainage ditches, is not prohibited by or otherwise subject to regulation under this section or section 1311 (a) or 1342 of this title.”

Organisms and habitat only exist because the facilities exist and are incidental to the primary purpose, which is to convey agricultural water.

Option 2

Maintenance activities that have been determined to be satisfactory for the locality are exempt from the objectives in the ISWP. Satisfactory agricultural practices must be approved by the Regional Boards.

Reasoning

Some members of the AWTF would like to ensure that Best Management Practices are implemented to assure protection of existing organisms and habitat associated with these facilities. Others contend that it is these very organisms and habitat that obstruct the flow of water which necessitates the required maintenance activities. These organisms and habitat only exist because the facilities exist, and are incidental to the primary purpose which is to convey agricultural water. Exemptions for maintenance are specifically detailed in the Clean Water Act under sec. 1344 (f)(1) (C), as referenced above in Option 1.

Option 3

Objectives in the ISWP do not apply to constructed closed recirculating systems (tail water recovery or closed irrigation systems) that service multiple farms operating under coordinated management. It is, however, recognized that discharges to surface waters from such systems are subject to the ISWP.

Reasoning

In response to Clean Water Act requirements, some water districts have constructed “closed irrigation systems” which allow for more effective water management, reduced water use and reduced pesticide loading into streams and rivers. During critical periods of the irrigation cycle, closed systems temporarily block return flows from entering streams and rivers until pesticide residues have reached predetermined levels. These systems allow water to be recirculated through the district, thus reducing the amount of water initially diverted from the stream or river.

Concerns

There were some concerns expressed regarding such a broad exemption. Is a size limit needed? What types of water bodies would be included in the exemption? And what is the nature of those water bodies?

Option 4

Objectives in the ISWP do not apply to constructed closed recirculating systems (tail water recovery or closed irrigation systems) that service multiple farms operating under coordinated management. It is, however, recognized that discharges to surface waters from such systems are subject to the ISWP. These systems would be regulated as a waste treatment system under waste discharge requirements.

Reasoning

Although recirculating systems may need special considerations, exempting all such systems without individual review is inappropriate. As described in Option 3 above, some systems could be extremely large and contain a wide variety of water body types with existing beneficial uses. If the system is regulated as a waste treatment system, a Waste Discharge Requirement (WDR) requiring CEQA review would be necessary, thereby ensuring that environmental impacts are avoided or mitigated. The WDR may require a watershed management plan to ensure coordinated management.

CATEGORIZATION OF WATER BODIES

Due to their unique hydrologic characteristics, the AWTF developed various rationales for categorizing agricultural water bodies. Recommendations and five options in the form of flowcharts follow.

RECOMMENDATION #1: WATER BODY CATEGORIZATION FRAMEWORK

The AWTF supports a water body categorization framework similar to the one proposed by the SWRCB in the 1991 Inland Surface Waters Plan and recommends that, at a minimum, the Plan present a logical decision tree which would identify natural, agriculturally dominated natural, reconstructed natural, and constructed agricultural water bodies. This decision tree should be used as guidance by the Regional Boards, with the final category designations adopted through a public hearing process.

RECOMMENDATION #2: FLOW CHARTS TO AID CATEGORIZATION

The five flow chart options presented should be evaluated and used to the maximum extent practicable as State Board staff prepares a water body categorization decision tree.

RECOMMENDATION #3: RELIANCE ON WATER MANAGEMENT AGENCIES FOR CATEGORIZATION

Regional Boards would rely on the water management agencies to initially categorize the water bodies within their jurisdiction. Any water bodies not characterized would default to the natural water body category for the purpose of assigning appropriate Beneficial Uses and numeric objectives. If there is disagreement with the categorization of a water body, it will be resolved through a Regional Board public hearing process. Regional Boards would then adopt the final categorization and submit it to the State Board for final adoption.

Reasoning

The purpose of categorizing agricultural water bodies is to identify those water bodies which may not have the full beneficial uses typically associated with perennial natural streams. Categorization may help determine if new appropriate Beneficial Use designations--including limited or new Beneficial Uses--must be developed. Then, appropriate water quality objectives may be applied. The categorization process may also be used as a method of prioritizing water quality concerns and associated activities to mitigate impacts.

The AWTF generally supports the approach used by the SWRCB to categorize water bodies in the original 1991 Inland Surface Waters Plan. This approach separately

categorized both natural channels dominated by ag drainage and constructed ag drains. The Task Force recognizes that the US EPA did not approve the categorical deferrals and exemptions provisions of that plan. In its message to the SWRCB, the US EPA disapproved the use of performance goals rather than final numeric objectives for broadly defined water body categories which in its view could have exempted waters of the U.S. from objectives for toxics.

The US EPA did support development of generic numeric objectives for different categories of drains, seasonal objectives, and the use of Site Specific Objectives (SSOs), Use Attainability Analyses (UAAs), Total Maximum Daily Loads (TMDLs), etc. It seems clear from the US EPA comments that some Constructed Agricultural Drains are considered waters of the U.S., while others are not. The questions remain as to how and where to draw the distinction. The AWTF discussed this issue at length, but could not achieve full consensus.

It is the intent of the AWTF that the process to categorize agricultural water bodies be done in the context of a stakeholder-based planning process. It requires strong participation and cooperation on the part of the water management agencies within the area under evaluation.

It must be strongly emphasized that these processes (flow charts) be used as guidance and cannot substitute for the needed field work necessary to accurately categorize water bodies. The categorization process cannot rely solely on USGS maps--which may be outdated by 40 years or more--and on water management agency identification methods. Field verification by the Regional Boards must be part of the process.

Flow Chart Options

The Task Force did not have time to adequately discuss the following five flowcharts for the purpose of achieving consensus. Each flowchart is presented as an option, with each option further detailing the categorization process. A brief rationale is presented for each of the flowchart options.

Option 1

The first option has the least amount of detail. It separates water bodies into four categories: natural; agriculturally dominated natural; reconstructed natural; and constructed agricultural water bodies. Reconstructed natural water bodies were included to recognize that a number of natural waterways in California have been modified to the extent they no longer have the appearance and alignment consistent with a natural water body. In many cases, the reconstruction occurred prior to 1975 in response to flood control and irrigation needs, and resulted in water bodies which may no longer have the hydrologic characteristics traditionally associated with natural perennial streams.

Note that beginning with Option 2, separate categories for water bodies carrying agricultural drainage vs. supply water have been identified. The distinction was made to assist in future determinations of appropriate beneficial uses and objectives based on probable water quality. This level of detail could be provided by water management agencies during their initial categorization process, thus saving time and an additional report at a later date.

Option 2

This option separates water bodies into six categories, including Natural, Agricultural Drainage Dominated Natural (B1), Agricultural Supply Dominated Natural (B2), Constructed Agricultural Drain (C1), Constructed Agricultural Supply (C2), and Reconstructed Natural (C3).

Option 3

Same as Option 2, but also includes Category B3, Totally Dependent Agricultural Water Body. The idea here is to obtain limited or incidental Beneficial Use designations, exemption as an ancillary structure, or exemption from classification as a "water of the U.S."

Option 4

Same as Option 3, but includes a new Category C4, Closed Recycling System, shown at the beginning of the flowchart. The purpose is to exempt constructed closed systems from having Beneficial Uses assigned, or allowing limited or incidental Beneficial Uses to be designated. The idea here is to obtain limited or incidental Beneficial Use designations, exemption as an ancillary structure, or exemption from classification as a "water of the U.S."

Reasoning

The purpose in creating a new category for constructed closed recycling systems is to recognize their limited, incidental beneficial use, and to recognize the benefits to clean water and efficient water management associated with these systems.

Option 5

The constructed closed recycling system (C4) identified in Option 4 is exempted from water quality objectives.

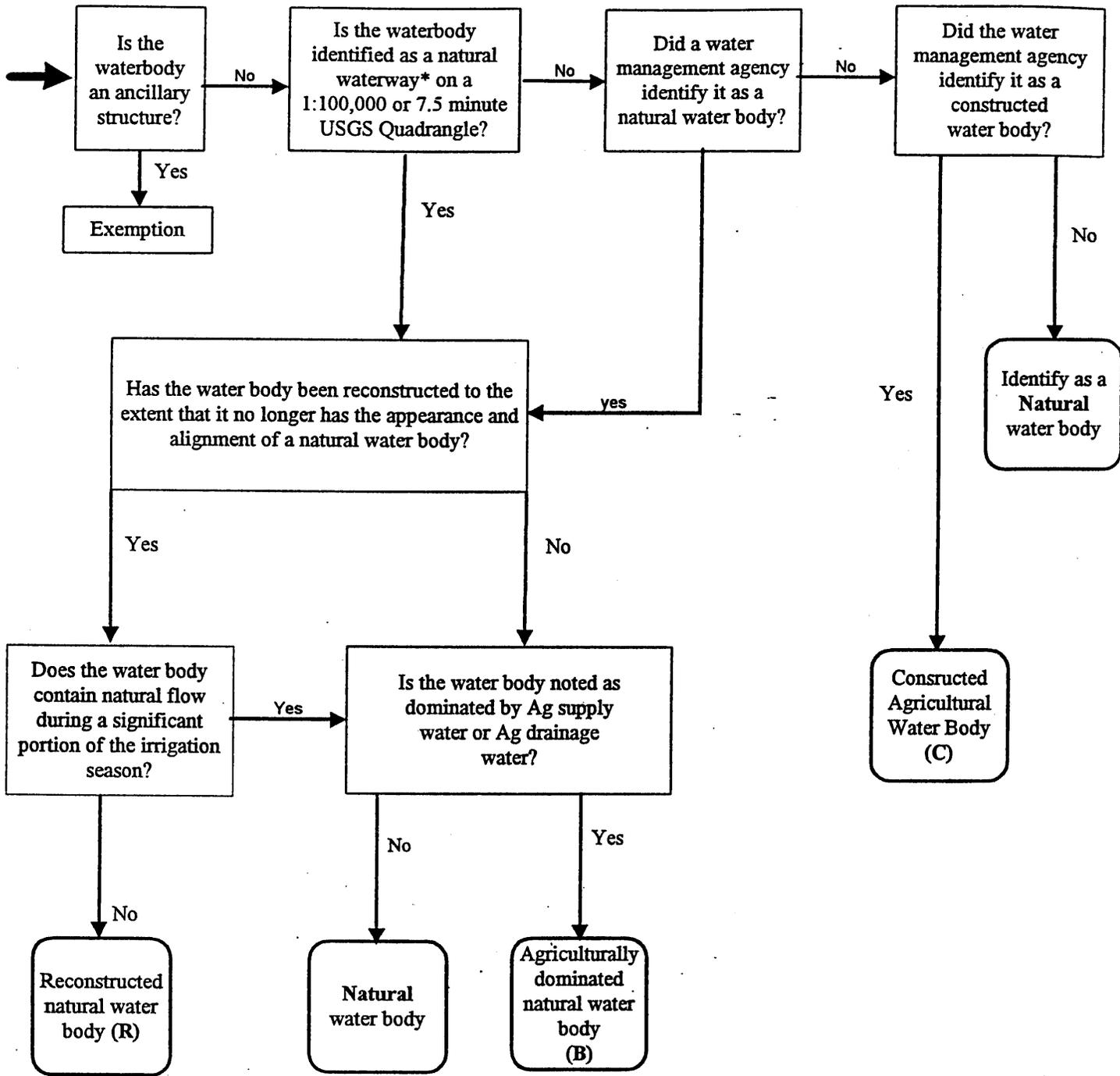
Reasoning

The purpose in creating a new category for closed recycling systems is to recognize their limited, incidental beneficial use, and to recognize the benefits to clean water and efficient water management associated with these systems.

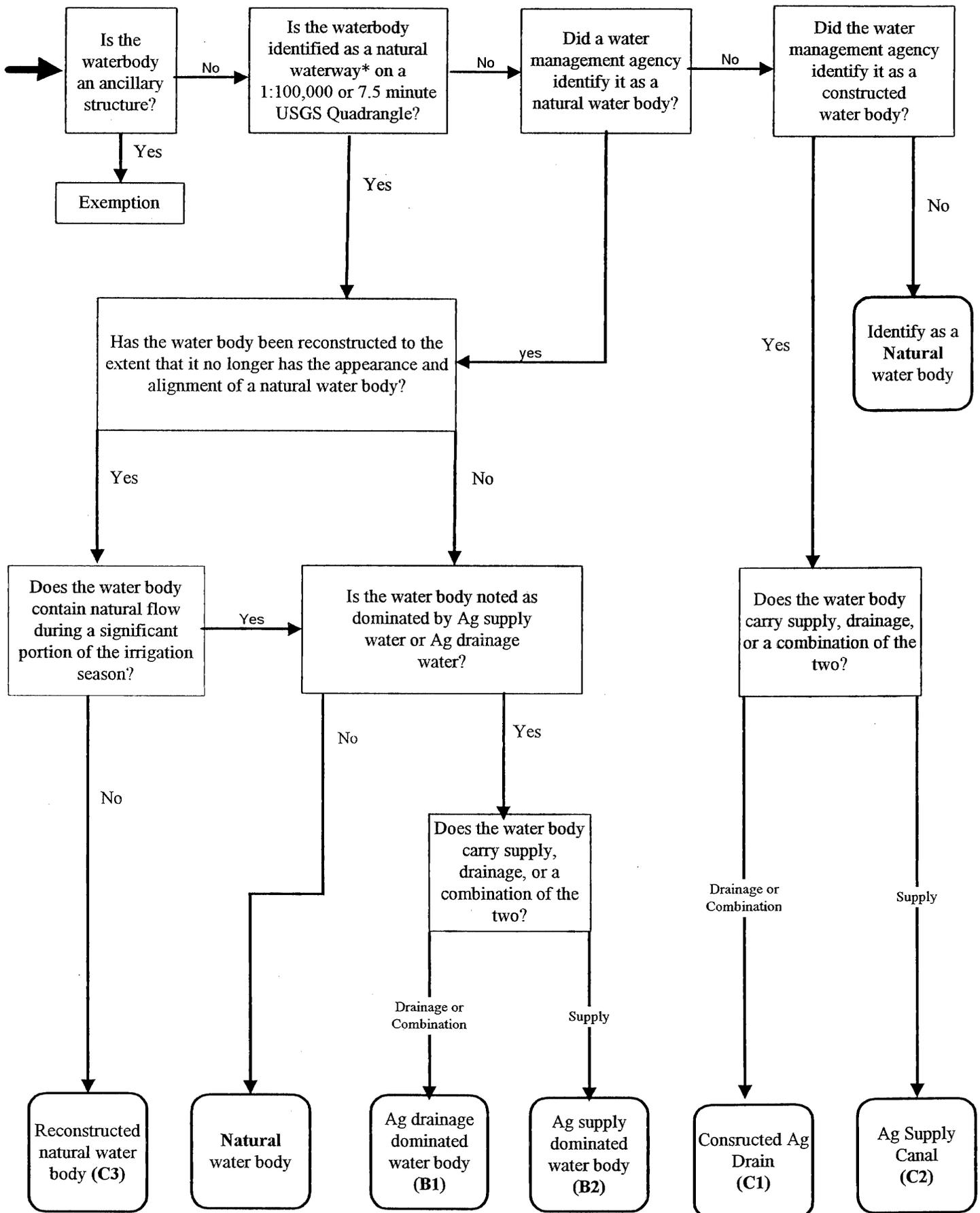
Concern

There is concern that some of the larger constructed recycling systems may contain within their boundaries natural water bodies and agriculturally dominated natural water bodies which need to be categorized. If recycling systems are excluded from the decision tree, these systems should be addressed separately in a process which includes a mechanism for identifying water bodies and the highest reasonable level of water quality that can be maintained within the system. This process may include the development of a watershed management plan which serves as an agreement between the Regional Board and the recycling entity.

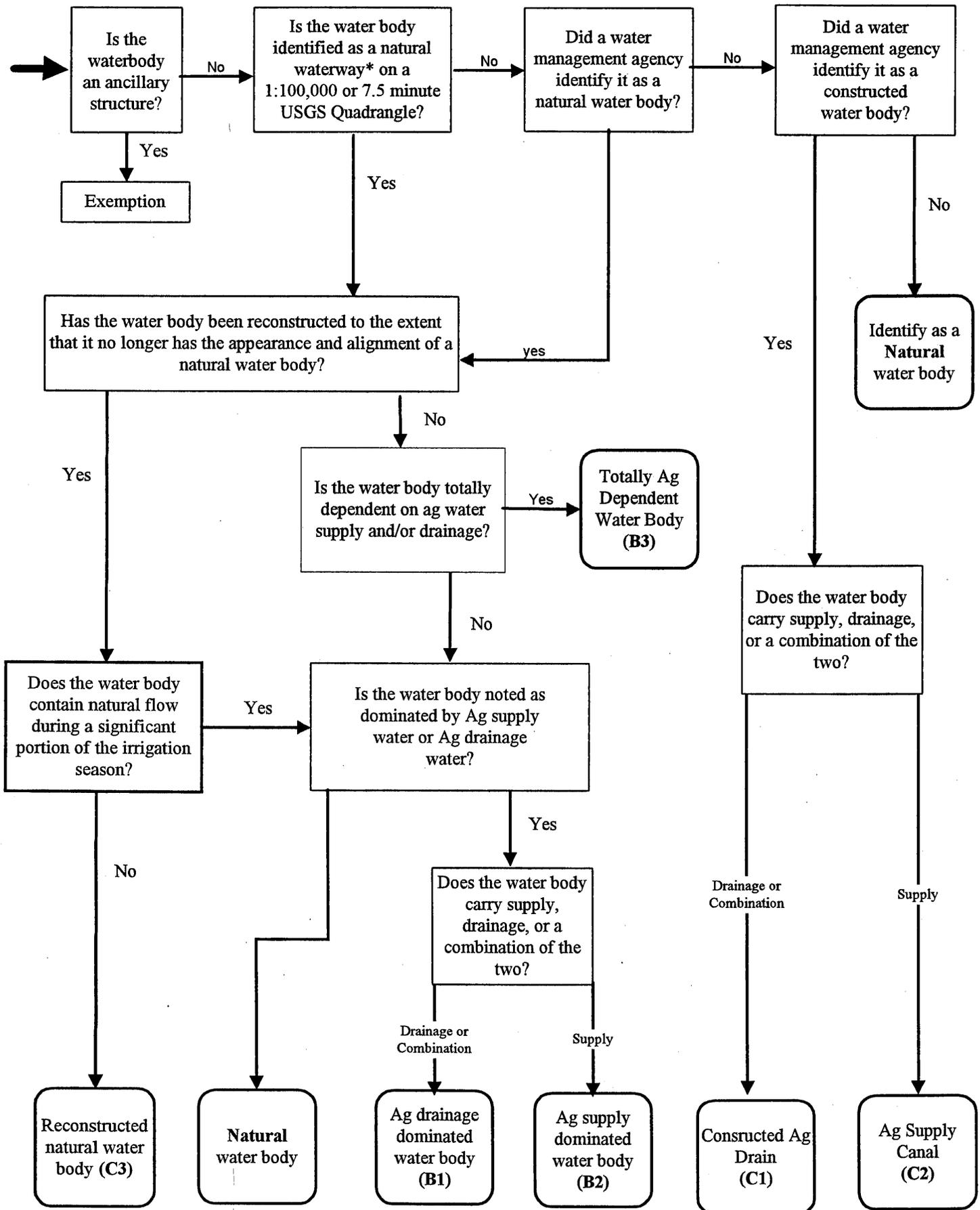
**Option 1.
Flowchart for Categorization of Water Bodies**



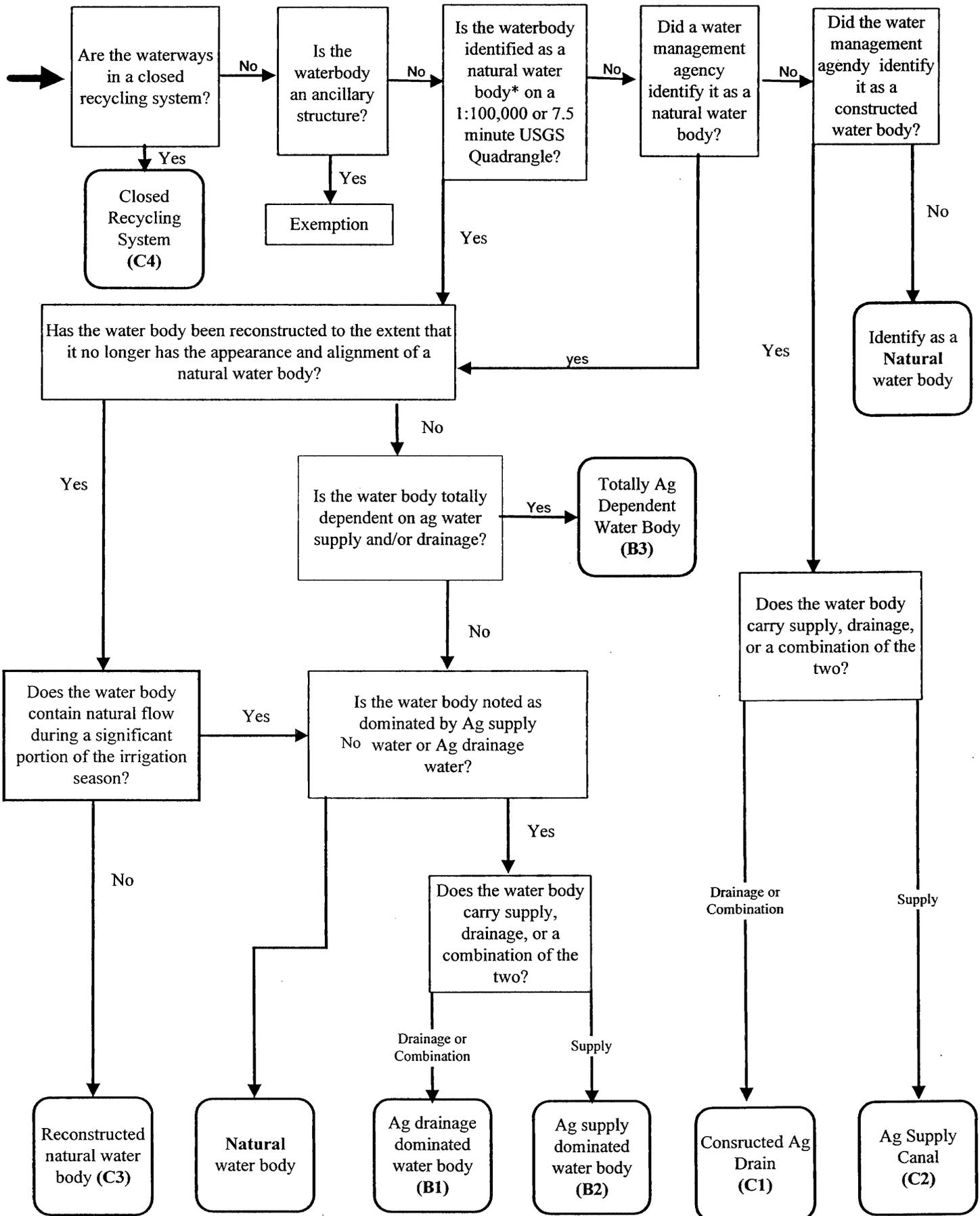
Option 2. Flowchart for Categorization of Water Bodies



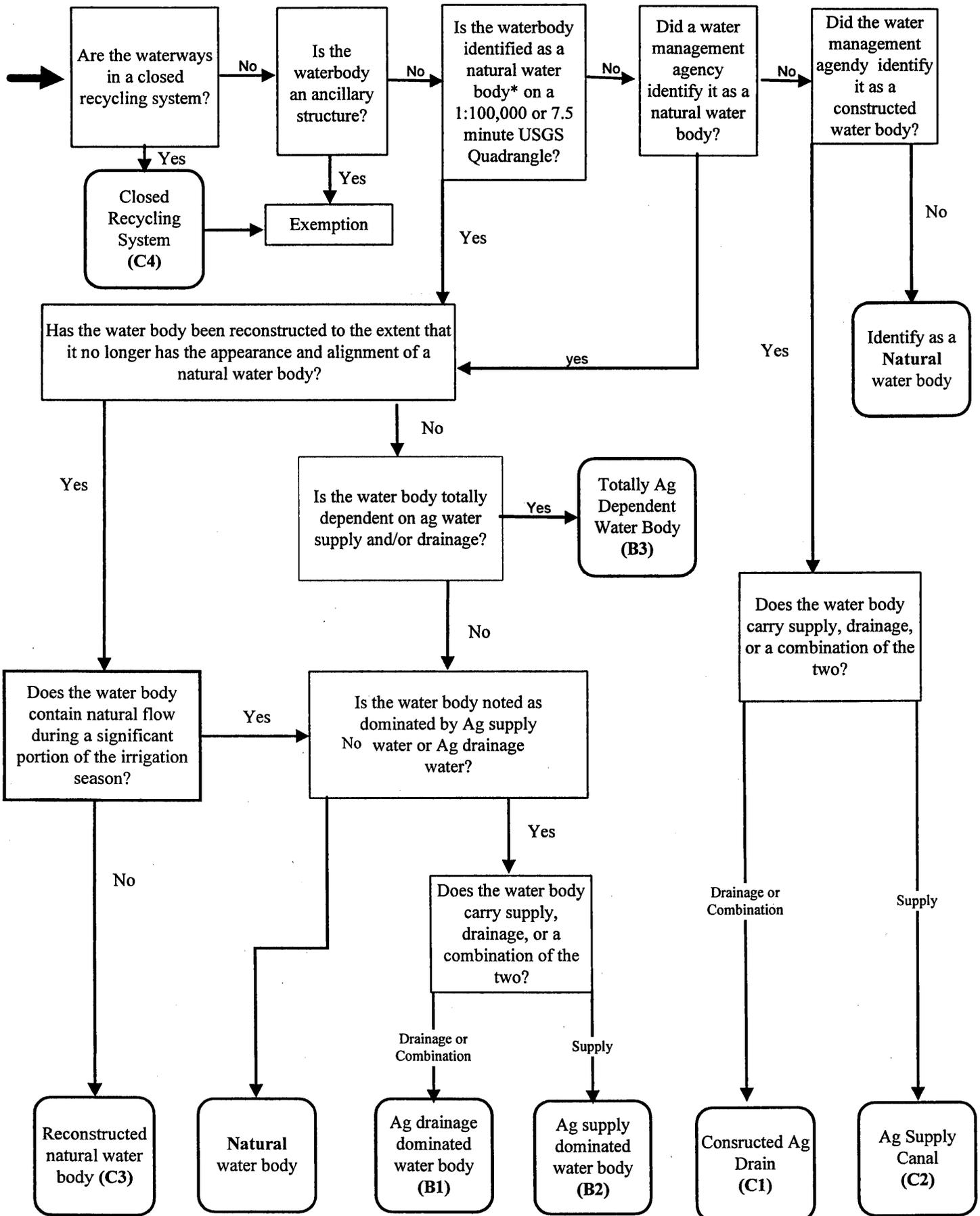
Option 3. Flowchart for Categorization of Water Bodies



Option 4. Flowchart for Categorization of Water Bodies



Option 5. Flowchart for Categorization of Water Bodies



BENEFICIAL USE DESIGNATIONS

The AWTF agreed that water bodies dominated by agricultural drainage are unique waters which may not have all of the hydrologic and ecological characteristics and water quality necessary for the full attainment of the beneficial uses normally associated with perennial streams. The State at this time does not recognize that these water bodies have distinct beneficial uses. Therefore, the AWTF reviewed the characteristics and developed recommendations and options that address beneficial uses for these unique types of agricultural water bodies.

RECOMMENDATION #1: RECOGNITION THAT AGRICULTURAL WATERS ARE UNIQUE

The State should recognize that water bodies dominated by agricultural drainage are unique waters which may not have all of the hydrologic and ecological characteristics and water quality necessary for the full attainment of the beneficial uses normally associated with perennial streams.

RECOMMENDATION #2: ANCILLARY STRUCTURES AND INDIVIDUAL CLOSED RECIRCULATING SYSTEMS DO NOT REQUIRE BENEFICIAL USE DESIGNATIONS.

Exempted ancillary agricultural structures and constructed individual closed recirculating systems, as specified in the Exemptions section of the report, do not require the designation of beneficial uses.

RECOMMENDATION #3: NEED FOR NEW OR LIMITED BENEFICIAL USES

The State Board should evaluate whether new or limited beneficial uses would be more appropriate for agricultural dominated natural water bodies and constructed water bodies than uses currently recognized.

RECOMMENDATION #4: PROTECTION OF "EXISTING" USES

Beneficial uses should be designated which, at a minimum, protect existing uses. Definition of existing uses should be clarified (see Policy Issue #3 in the "Other Policy Issues" section).

Option 1

Aquatic life uses of constructed agricultural water bodies can be viewed as incidental to the intended purpose of the facilities.

Reasoning

To prevent flooding or water logging of the land, agriculture has developed a network of artificial drains that carry surface runoff and deep seepage back to the main river system. In addition, irrigated agriculture in California has also developed a series of channels to supply over 30 million acre-feet of water to various crops. These water bodies, by their presence in water-short areas, provide wildlife and aquatic habitat during long, dry summer periods where no water would otherwise be available. Therefore, any wildlife or aquatic life beneficial use should be considered incidental to the original intended purpose of the channel when it was constructed. This concept will aid in the development of beneficial uses, water quality objectives and an implementation process, which are appropriate for these systems and which do not undermine the intended use.

Concerns

The concern with the "incidental use" concept expressed by some members of the AWTF is that it implies that a lower level of protection is appropriate for such uses because they are not planned. Calling a use "incidental" implies that a use is of lower value according to a hierarchy of beneficial use values. This idea is contrary to the basic thrust of water quality standards construction--that existing uses must be protected regardless of the human values ascribed to them.

Furthermore, the "incidental use" concept is unnecessary. There is adequate flexibility to designate uses for agricultural waters which reflect the unique physical, biological, management characteristics, and resulting limited aquatic life uses of these waters such as constructed drains. Through this flexible process, appropriate objectives and implementation procedures can be developed which facilitate appropriate management activities while protecting designated uses.

BENEFICIAL USE CATEGORIES

The AWTF agreed on having different categories of agricultural dominated water bodies, but was not able to agree on the appropriate method of assigning beneficial uses to them. Five options are outlined on the following pages.

Option 1

Identify categories of agricultural dominated waters and designate, as part of the ISWP, limited or new beneficial uses which generally correspond to such categories. Provide adequate flexibility to the Regional Boards to designate site-specific beneficial uses for those water bodies for which the statewide categorical beneficial uses do not appear to be appropriate. This option is meant to provide greater flexibility for limited use water bodies.

Option 1. Beneficial Uses to be Protected in Ag Dominated Water Bodies.

Beneficial Use	Natural Water Body	Ag Water Body Types		
		Ag Dominated Natural WB	Reconstructed Natural WB	Constructed Water Body
MUN	X	?		
IND				
--full	X	X	X	
--limited				X
REC-1				
--full	X	X	X	
--limited				X
Aquatic Life				
Full				
--COLD	X			
--WARM	X	X		
Limited				
--COLD		X	X	
--WARM			X	X
WILD	X	X	X	X
AGR				
--full	X	X	X	
--limited				X

Beneficial use definitions are listed in Appendix C.

- * "Full" and "limited" uses need to be defined based on the expected characteristics of each of the water body types and the expected current uses in each water body type. This option does not attempt to define these terms.
- * Scientific justification would have to be provided to support such a scheme for the statewide plan, as well as for site specific modification of the scheme.

Natural water body: For the purpose of this Plan, natural water bodies are those which: have not been significantly modified (except by dams or other diversions); have or could have a natural riparian zone; generally follow in a natural course; and have or could have in-stream characteristics suitable to allow aquatic life to thrive (e.g., appropriate substrate, pools and riffles, etc.). These waters should be evaluated for all of the beneficial uses normally associated with perennial streams.

Agricultural dominated natural water body: For the purpose of this Plan, agricultural dominated natural water bodies are those which generally contain the

characteristics outlined above, but greater than 50 percent of whose flow is comprised of agricultural drainage during a significant portion of the irrigation season.

These water bodies should be protected for: industrial and agricultural uses; full-body recreation and fishing; full warm water fisheries, including spawning and migration; cold water fisheries where cold water species are historically present; and full wildlife. These water bodies should drain water to downstream water bodies which is of sufficient quality to protect downstream municipal water supplies and full cold water fisheries, where appropriate.

Reconstructed agricultural dominated water body: This category should only apply to once natural water bodies which have been modified for use as a drain or supply canal and are now operated as an agricultural drain or supply canal. It should not apply to streams which were once modified but are no longer exclusively used as drains or supply canals (i.e., streams which are in the process, or with restoration could be in the process, of reverting back to a natural condition).

Reconstructed agricultural dominated water bodies should be protected for: industrial and agricultural use, limited aquatic life (warm and cold, if appropriate), full public health, and full wildlife uses. These water bodies should drain water to downstream water bodies which is of sufficient quality to protect downstream municipal water supplies and cold water fisheries, where appropriate.

Constructed agricultural water body: For the purposes of this Plan, constructed agricultural water bodies are purely man-made facilities, lined or unlined, which have been specifically built for the purpose of conveying agricultural drainage or supply water.

Constructed drains should be protected for: limited irrigation (recirculation/reuse), limited aquatic life (warm water fisheries only), limited public health (incidental swimming and fishing), and full wildlife beneficial uses. These water bodies should not be protected for municipal or industrial use, full recreation or full public health, or full aquatic life uses unless site-specific conditions suggest otherwise.

Concern

This option requires the protection of a large number of beneficial uses immediately upon adoption of the ISWP. Many of these uses are unlikely to be found in a majority of water bodies. For example, due to the nature of irrigation during the summer months, the water temperature in agricultural dominated water bodies is such that few, if any, would be able to sustain a cold freshwater habitat. Industrial use would also be severely limited in almost all cases due to high dissolved solids concentrations. To go back to these water bodies at a later date to remove the inappropriate uses would require a Use Attainability Analysis (UAA), which is a resource intensive process.

Rather than initially protecting these categories of water bodies for a large suite of beneficial uses, it would be more appropriate to start by focusing on the use which would be the most limiting--likely, aquatic life. Upon adoption, the Plan could require the protection of various levels of aquatic life (e.g. WARM, limited WARM, restricted WARM, etc.) until the water body can be surveyed and assessed for the full suite of appropriate beneficial uses, thereby sharply reducing the need for UAAs.

Option 2

Define agricultural dominated water bodies as one category, establish a narrative requirement prohibiting the degradation of current uses, and establish a priority scheme by which the Regional Boards will conduct site-specific evaluations to adopt beneficial uses for each individual agricultural drainage dominated water body in the region, or for subcategories of waters, if more appropriate.

Concern

Agricultural dominated water bodies cover both natural water bodies and constructed facilities. These water bodies may or may not have similar hydrologic or physical characteristics. Only one beneficial use to cover all combinations seems too limiting as the objectives associated with this use may be too restrictive in some cases and too lenient in others. Based on the discussions on objectives, only a narrative toxicity objective prohibiting acute toxicity would apply to this use which would not protect agricultural dominated natural water bodies from chronic toxicity.

Option 3

Define minimum beneficial uses to be considered by the Regional Board for agricultural dominated water bodies according to the following chart and associated definitions. (This option is similar to option 1 in other respects.)

Option 3. Minimum Beneficial Uses to be Considered for Ag Dominated Water Bodies.

Beneficial Use	Natural Water Body	Ag Water Body Types		
		Ag Dominated Natural WB	Reconstructed Natural WB	Constructed Water Body
COLD*	X			
WARM*	X			
WARM 1		X		
WARM 2			X	X
WILD*	X	X		
WILD 1			X	X
AGR*	X	X	X	X

*Defined in Appendix B

Limited Freshwater Habitat (WARM 1) - provides a warm water habitat to sustain a limited diversity of indigenous aquatic resources due to ambient conditions associated with the water resources. Limiting factors could include flow, temperature, turbidity, and water quality.

Restricted Warm Freshwater Habitat (WARM 2) - provides a warm water habitat that is not expected to provide a diversified aquatic system. Such a system is only capable of sustaining a small transitory population of very tolerant forage or fish and macro invertebrates due to source flow, water quality, and habitat deficiencies.

Limited Wildlife Habitat (WILD 1) - provides a temporary or short-term water supply and/or vegetative habitat for sustaining wildlife.

Reasoning

The separate categories of water bodies each have characteristics which affect their existing beneficial uses. Due to the nature of irrigation during the summer months, the water temperature of water bodies dominated by agricultural drainage is such that none of them could sustain a cold freshwater habitat. Some water bodies used for agricultural supply may be able to support cold water habitat but it should not be required as a minimum use for all agricultural dominated water bodies.

All three categories of agricultural dominated water bodies include waters that are subject to irregular or intermittent flows and/or water quality or maintenance operations that affect development of wildlife habitat. These waters are also subject to variable factors that limit the diversity of the indigenous aquatic resources. Agricultural dominated natural water bodies, whether or not they are under control of an individual or water management agency, are subject to limited maintenance activities that disrupt wildlife habitat. In contrast, constructed water bodies are subject to extensive flow, water quality and habitat deficiencies. These facilities include man-made drains and water bodies that are under the control of a public agency, farmer or other identifiable entity and are waters that may not support any permanent indigenous aquatic life.

Option 4

Create a new Beneficial Use category for **Agricultural Drainage**, which includes crop and flood drainage, and all other uses in support of farming and ranching operations.

Concern

Some AWTF members believe this category is in conflict with Federal law.

WATER QUALITY OBJECTIVES

The State Water Code states that water quality objectives are “limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” (Water Code, sec. 13050, subd. (h)). In the AWTF’s limited time, it was not possible to develop and assign actual limits and levels of constituents to protect designated beneficial uses. The task force believed its responsibility was to provide guidance and input to the State Board in setting the appropriate limits and levels for water quality objectives for agricultural waters.

The state’s Regional Water Quality Control Boards are at varying levels in the process of designating or assigning beneficial uses to water bodies in their regions. As an example, Region 5 has not designated beneficial uses for all of its agricultural waters, while Region 7 has designated beneficial uses and associated numeric objectives for its agricultural waters. Region 5 estimates it will take their staff many years to assess the waters in their region and assign beneficial uses to them. The issue, then, is that objectives may need to be assigned in some water bodies to protect downstream resources even if beneficial uses are not yet designated.

The AWTF reviewed both narrative and numeric objectives. One recommendation and several nonconsensus options were developed and are listed below.

Narrative Water Quality Objectives

RECOMMENDATION #1: NARRATIVE TOXICITY OBJECTIVE FOR ALL NON-EXEMPTED INLAND SURFACE WATERS

Upon adoption of the ISWP, a narrative toxicity objective should apply to all non-exempted inland surface waters. This narrative objective will be considered a permanent baseline.

Potential language: “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life” (from Region 5 Basin Plan). For agricultural dominated and constructed water bodies, the State Board should recognize that aquatic habitat is likely to exist and be the most limiting use. The narrative objective should be implemented as follows:

<u>Water Body</u>	<u>Objective</u>
Agricultural dominated natural water bodies	No acute or chronic toxicity
Constructed agricultural water bodies	No acute toxicity

Flexibility is needed for objectives that would apply on a seasonal basis and during extremely high and low flow years.

Reasoning

“States may adopt seasonal uses as an alternative to reclassifying a water body or segment thereof to uses requiring less stringent water quality criteria. If seasonal uses are adopted, water quality criteria should be adjusted to reflect the seasonal uses, however, such criteria shall not preclude the attainment and maintenance of a more protective use in another season.” (40 CFI, sec. 131.10 (f)).

The AWTF did not specifically identify reconstructed water bodies since it could not come to consensus on which narrative toxicity objective should apply to that category of water body.

Narrative and Numeric Water Quality Objectives

Option 1

Of the potential beneficial uses outlined in Option 3 of the Beneficial Uses section, the most sensitive is likely to be the protection of aquatic life. Based on this approach, the following narrative water quality objectives are recommended for adoption as a minimum for three levels of WARM beneficial uses:

- 1) WARM
 - a. All water shall be maintained free of substances which produce acute or chronic toxicity.
 - b. All water shall be maintained free of substances which through bioaccumulation would produce detrimental physiological responses in human, plant, animal, aquatic life, or wildlife.
 - c. Numeric objectives will be determined on a region by region basis (as needed) to reflect habitats unique to various areas in the state.
- 2) WARM I
 - a. All water shall be maintained free of substances which produce acute or chronic toxicity.
 - b. All water shall be maintained free of substances which through bioaccumulation would produce detrimental physiological responses in human, plant, animal, aquatic life, or wildlife.
- 3) WARM II
 - a. All water shall be maintained free of substances which produce acute toxicity.

Numeric Objectives

Option 1

Agricultural Dominated Natural Water Bodies

Two years after the adoption of the Plan, numeric objectives will apply as interim objectives on agricultural dominated natural water bodies whose beneficial uses have not

been formally identified through the process of a survey or assessment, if that water body is contained within a watershed management area (WMA) recognized by the Regional Board. The numeric objectives will continue to apply as interim objectives during the period of assessment and prioritization. If the water body is not contained in a WMA, the interim status will not apply and the numeric objectives will be considered final objectives.

Once a WMA is identified by the RWQCB as a priority watershed, the numeric objectives will continue to apply as interim for a period of eight years (or a time period specified by the RWQCB) if the local stakeholders develop and implement a watershed management plan (WMP) which includes: hydrologic boundaries; BMPs (or other actions such as pollutant trading) to control impairment; a monitoring and assessment program; and an implementation schedule both for the installation of BMPs as well as the determination of appropriate beneficial uses, if necessary.

By the end of the eight year process (or time period specified by the RWQCB), appropriate beneficial uses will be designated, if necessary, and the associated numeric objectives will be reviewed by local stakeholders and the RWQCB to determine if the objectives should remain interim while site specific objectives (SSOs) are developed, become final, or become final with the option of a variance if the WMP is continued. If the option to develop SSOs is pursued, the RWQCB with the input from local stakeholders will develop a timetable for the adoption of SSOs. If the local stakeholders do not provide adequate technical information within the specified time period to justify SSOs and an extension is not granted, the interim objectives will apply as final objectives.

For agricultural dominated natural water bodies with formally designated full aquatic or human health beneficial uses, the numeric objectives will apply as final objectives unless a variance is granted or site-specific objectives are adopted.

The following general timeline is proposed for adoption of numeric objectives on agricultural water bodies:

- Within 2 years: Categorization of water bodies;
 Formation of WMAs.
 Numeric objectives apply as interim objectives on all ag
 dominated natural water bodies contained within a WMA.
 Numeric objectives apply as final objectives on all ag
 dominated natural water bodies not contained within a WMA
 or formally designated with full aquatic or human health
 beneficial uses.
- Within 4 years: Assessment of water quality.
- Within 5 years: RWQCB prioritizes WMAs.
- After WMA listed as a priority:
 - within 1 year: WMP proposed and finalized.
 - within 4 years: WMP implemented.
 - within 8 years: Appropriate beneficial uses designated, if necessary;
 numeric objectives reviewed.
- End of 10 years (or time period specified by the Regional Board):
 Final numeric objectives adopted.

Reasoning

Agricultural dominated natural water bodies are unique systems which may not support full fishable/swimmable beneficial uses. Where full fishable/swimmable beneficial uses have not been designated through a survey or assessment, the current numeric objectives may not be appropriate. (This is assuming that the current numeric objectives will be linked to full Aquatic Life and Human Health beneficial uses.)

The initial two-year lag time allows the Regional Board and local entities to identify ag dominated water bodies and WMAs and thereby determine which objectives should apply. By initially applying "interim numeric objectives" to ag dominated natural water bodies and carefully defining an "interim numeric objective" as a number which would be fully effective with respect to all current regulatory programs yet not a final objective which would be subject to anti-backsliding provisions, the initial numeric objectives can become useful tools during the assessment stages to help focus the BMPs in a WMA rather than an impediment to protecting appropriate beneficial uses on a priority basis. Final numeric objectives for the appropriate beneficial uses may then be developed as necessary. The goal is to assure that limited resources are directed at installing BMPs to improve water quality rather than at creating paperwork to either justify or revise a number.

Since this would be a new program involving a great number of agricultural water management agencies throughout the state, an extended timeline is justified. The Regional Board retains the option for lengthening or shortening the timelines as appropriate (which may be due to lack of funding for the overall program).

Definitions for "interim," "recognized," "listed," and "adequate technical information" are critical. In the process outlined above, "interim" means that the objective may not be the appropriate final objective for the water body, and is not subject to anti-backsliding regulations. This recognition allows the development of appropriate beneficial uses using a limited beneficial uses assessment that provides "adequate technical information."

The minimum requirements for a limited beneficial uses assessment should be outlined so they are consistent statewide. If necessary, numeric objectives can then be developed which are appropriate for the water body (a cross cutting issue with the Site Specific Objectives Task Force. The term "recognized" may be inappropriate. The idea is that a WMA and WMP must be formally "recognized" or perhaps listed or adopted and prioritized by RWQCBs if water quality concerns are involved.

The idea of equity for those systems which already have fishable/swimmable beneficial uses specifically designated is more difficult to address. The appropriateness of a beneficial use is evaluated through a public hearing process prior to the designation. It would be inappropriate to remove that use without another public hearing; therefore, if the objectives are linked to beneficial uses, they must apply upon adoption of the Plan.

An alternative may be to include an initial five year variance upon adoption of the Plan during which time the numeric objectives would be used for assessment purposes only. After five years, local stakeholders in a WMA could request a continuation of the variance if they have a WMP under development. Another option may be to provide equity through the implementation process (i.e. use of the NPS Management Plan 3 tiered process).

Option 2

The State Water Board should, at a minimum, develop a separate set of numeric objectives for COLD and WARM aquatic life beneficial use protection.

Reasoning

Criteria developed for cold water species may not be appropriate for warm water species. The availability of appropriate objectives for subcategories of water bodies would minimize the need for the development of many more site specific water quality objectives.

Option 3

Mixing zones should be used, as appropriate, to determine compliance of nonpoint source discharges with objectives.

Reasoning

“States may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances. Such policies are subject to EPA review and approval.” (40 CDF, s. 131.13)

Option 4

The State Water Board should develop and adopt statewide numeric objectives for each beneficial use and subcategory of agricultural water as part of the statewide plans. Recalculated acute and chronic criteria could be adopted for warm waters, acute numeric for reconstructed agricultural waters, and narrative only for constructed agricultural waters.

The Regional Board will then list specific water bodies which shall be included in each category within one year of Plan adoption.

The Regional Board may, at any time, determine that objectives shall be reviewed and/or considered “interim” if it designates the water body as part of a watershed management area. (After this point, Option 1 is incorporated.)

Reasoning

This option is based on the idea that Regional Boards may not receive funding to develop the new program in Option 1. This option addresses many stakeholder concerns and provides some immediate certainty for the regulated community. This option still allows local flexibility and provides incentives for watershed management.

Option 5

Same as option 1, except that the time schedule is revised to have the State Board adopt interim numeric objectives for all agricultural waters as part of the plans.

IMPLEMENTATION

RECOMMENDATION #1: GOALS

The Task Force recommends that implementation follow a logical sequence that allows for consistency while being flexible; prioritizes water quality problems while allowing realistic timelines; and allocates appropriate funding while avoiding duplication of effort. Implementation actions should consider a watershed philosophy where appropriate with the Regional Boards forming the initial watershed boundaries. The Regional Boards should identify watershed boundaries within their regions with the help of local stakeholders, to help prioritize areas of impairment and also determine if the watershed approach is the most effective mechanism for mitigating a beneficial use impairment. The steps in the implementation process should include: designation of area boundaries; initial assessment; prioritization of water quality concerns; development of a management plan; evaluation of the program; and as needed, refinement of the management plan, assessment/reassessment of beneficial uses and objectives, and further regulatory actions. Beneficial use impairments will be regulated through provisions of the State Nonpoint Source Management Plan (the three tiered process).

Reasoning

The effectiveness of any policy or plan for protecting inland surface waters will depend on the implementation of that plan. Statewide consistency was recognized as an essential component to ensuring equitable regulation. However, the task force also recognized that California is comprised of a series of diverse ecoregions and that sufficient flexibility must be available to deal with specific situations. Since the State and Regional Water Boards are in the process of integrating a watershed approach into the Board's programs, incorporating the watershed concept into the implementation program appears to be the most logical method for dealing with areas dependent on local water management. Utilizing Regional Board boundaries as the first watershed boundary recognizes the diversity of the state and allows local entities to determine area priorities. Regional Boards may determine that the watershed approach is not appropriate for a particular impairment, and that some water quality impacts occur statewide (e.g. elevated pesticide concentrations during storm runoff) and may need to be addressed on a larger scale than local watersheds.

RECOMMENDATION #2: HIERARCHY FOR REGULATION

The following hierarchy should be followed when implementing the ISWP in agricultural dominated systems.

- 1) Protection of downstream beneficial uses in natural water bodies.
- 2) Protection of beneficial uses to the extent to which they occur in agricultural dominated natural streams.
- 3) Protection of beneficial uses to the extent to which they occur in constructed facilities.

The State should recognize that agricultural water management may provide net ecological benefits with incidental beneficial uses which would not otherwise be available. It is a goal of this Plan to provide protection of incidental uses through reasonable management activities. Therefore, the hierarchy should be used to prioritize implementation activities, recognizing that not all beneficial uses and objectives will be attained in the short-run.

Reasoning

California is an arid environment. As such, many natural water bodies within the state are dependent either seasonally or entirely on water management to provide flow and associated beneficial uses. In addition, agriculture has developed a network of artificial channels that carry supply water, surface runoff, and deep seepage back to main river systems. These channels were constructed for flood control and to enhance agricultural production and have become an essential component of irrigated agriculture in California. Water within agricultural systems is different from normal stream flow by virtue of its origin and management on the farm. Besides the seasonal nature of the irrigation, most channels are subject to large fluctuations in flow due to the intensity of irrigation in the area. The non-point source nature of return flow also results in elevated water temperature and other water quality parameters. These flow and water quality factors will be most pronounced in drains closest to the fields; however, a dampening effect may occur as this water combines with water from other areas and moves downstream toward the receiving water. In constructed facilities and in natural stream channels which historically would have been dry during the irrigation season, flows are dependent on water management. Beneficial uses associated with these flows should be considered incidental.

Based on the dependence of many beneficial uses in agricultural dominated channels on water management within a given region, the AWTF determined that a hierarchy should be followed which phases implementation activities to first protect downstream beneficial uses in natural water bodies. Once the downstream uses are protected, efforts will continue upstream to next protect agricultural dominated water bodies followed by constructed facilities. This priority system recognizes that natural water bodies will likely have the highest level of beneficial uses and that regulation of water quality in agricultural systems must balance the amount of available resources, the level of beneficial uses, and the needs of agriculture.

Concerns

In some areas, water management to improve water quality and thereby protect beneficial uses in the majority of water bodies within a watershed, may result in no change or perhaps degradation of water quality in selected water bodies for a period of time. Even though the overall result would be considered a net environmental benefit, there is concern that using this hierarchy on a water body by water body basis may limit the ability to improve the overall watershed by requiring that all downstream water bodies be fully protected before moving upstream. Using this hierarchy as a guideline for prioritization on a watershed basis rather than water body by water body insures that the maximum net environmental benefit can be derived within an entire area dependent on water management.

The second concern is that the ultimate goal of improving water quality to the maximum extent practicable is not overlooked. Improvement is a phased process and is not necessarily complete after the first level of net environmental benefit is achieved.

RECOMMENDATION #3: PROCESS

The Task Force recommends that the overall implementation of the ISWP occur in two phases. The initial phase would consist of the planning process during which time water bodies are categorized; sub basins are developed within Regional Board boundaries to facilitate assessment; assessments are conducted; and areas as well as water bodies of concern are prioritized. The second phase would consist of actions taken based on the findings of the initial planning and assessment phase. The table below summarizes the two-phase process.

Table 1. Overall Inland Surface Water Plan Implementation in Agricultural Dominated Water Bodies.

I. Planning

- A. Categorization of water bodies**
- B. Development of sub basins for assessment**
- C. Assessment**
- D. Prioritization of areas and water bodies of concern**

II. Response to Findings from the Planning Phase

- A. Area and/or water body not impaired or threatened**
 - 1. Watershed management group formation encouraged**
- B. Area and/or water body prioritized**
 - 1. Activation of relevant interagency agreements**
 - 2. Where action by Regional Board and State Board necessary**
 - a. Actions as defined through the NPSMP**
 - b. Actions as defined through a watershed management program**

RECOMMENDATION #4: GUIDANCE ON A DRAFT IMPLEMENTATION PLAN

The SWRCB should consider using the draft Implementation Plan found in Appendix D for guidance as it develops the ISWP. All the reasoning supporting the draft Implementation Plan is included in the appendix.

OTHER POLICY ISSUES

The AWTF discussed a number of issues that did not fit neatly into the sections of this report but were considered too important to simply drop. While some of these issues are being more fully addressed by other task forces, these points are meant to focus the agricultural waters perspective on those issues.

RECOMMENDATION #1: INCORPORATION OF BASIN PLANS' EXISTING SITE SPECIFIC OBJECTIVES INTO THE ISWP

Site specific objectives currently adopted into Basin Plans should be incorporated into the ISWP as site specific objectives for those water bodies.

Reasoning

In many areas of California, time and resources have already been invested in developing appropriate site specific objectives and regulatory programs for water bodies of concern. It should not be the intent of the ISWP to supersede these efforts with a blanket adoption of statewide water quality objectives. A more appropriate approach would be to list previously adopted site specific objectives in an ISWP appendix and recognize that the listed site specific objectives supersede the general ISWP objectives. The appendix can be updated following Basin Plan triennial reviews.

RECOMMENDATION #2: WATER CONSERVATION CLAUSE

The State Water Board needs to identify if and how water conservation will be achieved in areas where water conservation measures result in decreased water quality, reduced groundwater recharge, and potential loss of wildlife habitat.

Option

Some members of the Task Force recommend a "water conservation clause" to help water agencies in attaining a water conservation goal without risk of violating water quality standards and criteria, since there are areas of the state in which water conservation can cause degraded water quality, reduced groundwater recharge, and potential loss of wildlife habitat.

Reasoning

Water conservation is a policy issue that is beyond the scope of resolution of this Task Force. The ramifications of such a policy, however, would have an effect on the guidelines currently being prepared by all the task forces.

In areas dependent on water management for stream flow, water conservation efforts have a direct effect on the local water quality. In agricultural areas, conservation generally occurs for high quality supply water and includes a reduction and/or recirculation of relatively high

quality tail water. This reduction may result in decreased dilution and increased constituent concentrations in drainage. Therefore, the relationship of water quality with water conservation needs to be addressed.

In addition, California is dependent upon its supply of fresh water to satisfy the ever increasing urban demand, to maintain this nation's largest agricultural industry, and to provide habitat for fish and wildlife. Currently the State promotes through legislative policy the use of water marketing and water transfers between agricultural and urban municipalities to satisfy a portion of the state's water shortfalls.

RECOMMENDATION #3: CLARIFICATION OF TERM "EXISTING"

The Task Force recommends the State Water Board move to clearly define the term "existing" as it is used in the context of both aquatic life and beneficial uses.

Concerns

In discussions regarding the protection of "existing" aquatic life and other wildlife, it is not clear whether it is intended to mean only indigenous species, all species that exist in a water body as of a certain date, or species including introduced and exotic species.

A concern expressed was that "existing" beneficial uses should include those found appropriate for the water body by the California Department of Fish and Game, the trustee agency of fish and wildlife in the state.

Another concern expressed was that "existing" should be defined as those uses occurring on or after 28 November 1975; however, further clarification is needed.

RECOMMENDATION #4: NET ENVIRONMENTAL BENEFIT

"Net Environmental Benefit" is a concept that deserves additional consideration and should be reviewed and defined by the State Water Board in terms of meeting water quality objectives.

Reasoning

In the watershed approach to solving water quality problems the concept of "net environmental benefit" has been briefly discussed. The concept centers on the overall health of a watershed as compared to a segment by segment analysis of the waters within that watershed. More discussion needs to be held on this issue, as the concept may have potential for use in establishing appropriate objectives for watersheds.

RECOMMENDATION #5: FURTHER INVESTIGATION OF PROTOCOLS FOR TOXICITY MONITORING

Methodologies and species used for determining acute and chronic toxicity must be scientifically defensible and approvable by the regulatory agencies. Further investigation of protocols may be warranted for agricultural water systems.

Option

Consideration should be given to selection for testing of those indigenous species which would be appropriate indicators of the health of the particular types of aquatic organisms protected by the beneficial use designations which apply in a given situation.

Reasoning

Most stakeholders participating in the Toxicity Task Force agreed that the SWRCB should allow for the development of additional test protocols that meet acceptable criteria for toxicity monitoring, and the AWTF generally concurred with that thinking. New protocols should consider at least the following factors: arid conditions; appropriate species for the water body under evaluation; cost-effectiveness; availability of test organisms; test reproducibility; and relative sensitivity of tests and test organisms.

RECOMMENDATION #6: ECONOMIC CONSIDERATIONS

Economic considerations must be factored into the development of the ISWP as required by the Porter-Cologne Water Quality Control Act. The State Water Board should develop clear guidelines for how economics will be evaluated in agricultural waters. The guidelines should be designed to meet the requirements of both State and federal laws.

Reasoning

Due to time constraints, the Task Force did not discuss in length the issue of economic considerations in establishing objectives and implementation strategies, but recognized they have potential to cause the greatest impacts upon the regulated community. The Plan's economic impacts must be considered in the Functional Equivalent Document in order to comply with the Porter-Cologne Water Quality Control Act.

Concern

A concern expressed in discussions about economic considerations was that growers of agricultural crops cannot pass incurred operational expenses onto their buyers, as is typical of other industries. This single point should be remembered in the process of establishing protective measures or compliance criteria that may be economically burdensome.

APPENDICES

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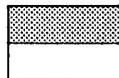
APPENDIX A

**AGRICULTURAL WATERS TASK FORCE
ATTENDANCE ROSTER**

NAME	Interest Category	M/A	April 25	May 31	June 27	July 25	Aug 22	Sept 26
Syed Khasimuddin	SWRCB	M						
Stephanie Rose	SWRCB	A						
Don Nelson	POTW	A						
Julio Guerra	POTW	M						
Dennis Huff	Stormwater	M						
Stephen Murril	Industry	M						
*Michael Kiado	Public Health	M						
Maria Rea	USEPA	M						
Alyoda Mangelsdorf	USEPA	M						
Randall Stocker	Water Supply	M						
Steve Knell	Water Supply	M						
Steve Shaffer	C.D.F.A.	M						
Joe McGahan	Agriculture	M						
Michael Morse	Fish & Wildlife	A						
Brian Finlayson	Fish & Wildlife	M						
Kenneth Coulter	RWQCB	A						
Jeanne Chilcott	RWQCB	M						
Kati Buehler	Agriculture	A						
Jeff Jaraczski	Water Supply	A						
Marshall Lee	C.D.P.R.	M						
Nancy Reichard (Facilitator)		M						
Arthur Whipp	Environmental	A						
Deborah Donovan	Industry	A						
Gene R. Anderson	Stormwater	A						
Gail Linck	SWRCB	A						
Elston Grubaugh								
**Dave Smith	USEPA	M						
Mario Menesini	Environmental							
Al Vargas	RWQCB							
Jerry Troyan								
David Cohen								
Dave Kennedy								
Kathie Keber								
Gene R. Anderson								
Elizabeth Watson								
Markus Meier								
Dick Marshall								
Glen Bardzel								

M = Member

A = Alternate



= Present

= Absent

* M.Kiado resigned in June, Terry Young also resigned.

**Dave Smith substituted for A. Mangelsdorf.

APPENDIX B
Initial List of Issues to be Addressed
by the Agricultural Waters Task Force

- I. Legal Constraints
 - Porter Cologne vs. Clean Water Act
 - Exemptions for constructed agricultural drains
 - US EPA requirements/constraints
 - Other law interfaces
 - Prop 65
 - Endangered Species Act
 - CZARA
 - What has US EPA done to implement 1987 amendments in adjacent states?

- II. Other Water Policies
 - Reclaimed wastewater
 - Water conservation strategies
 - Sources of Drinking Water
 - Anti-degradation
 - Non Point Source Management Plan

- III. Definition of Agricultural Waters
 - Navigable waters
 - Baselines
 - Waters of the State
 - Waters of the U.S.
 - Mirages
 - Types of water bodies
 - Ancillary structures
 - Confined basins
 - Use designations spelled out

- IV. Beneficial Uses/Biological
 - Competing uses/different uses/seasonality
 - Beneficial uses and users
 - Hierarchy of beneficial uses
 - Ultimate goal: prioritization
 - Protection of public health
 - (fishing from ag drains)
 - Fish & ESA & wildlife
 - Created ecosystems
 - Net environmental benefit
 - Bioaccumulation of toxicity
 - (surface water, sediment, natural metals)
 - Evaluating eco-life in drains; biota
 - Bio-criteria
 - Responses to toxicity monitoring

- V. Objective and Criteria
 - New objectives for Ag Drains
 - Exposure times
 - Mass emissions vs. concentration
 - Drought vs. wet years

Appendix B continued:

- Objective-setting process
- WQO's and Mixtures
- Numerical standards for drinking water
- Bacterial standards for Ag waters
- Applicability of toxicity tests to Ag runoff
- narrative vs. numerical objectives
- Flexible standards--evolving science & technology/evergreen

VI. Implementation

- A. Allocation of Responsibility
 - Implementation - responsibility
 - Who will pay to implement plan
 - Available resources
- B. Application of Standards
 - Point of application
 - Mixing zones
 - Three-tiered process (Nonpoint Source Management Plan)
 - Compliance monitoring
 - nonpoint vs.. point sources
 - surrogate parameters monitoring
 - cumulative effects monitoring
 - Variances and exception (e.g. vector control)
- C. Watershed Management
 - Drainage district organization
 - (including all contributors)
 - Pollutant trading; TMDLs; intake credits
 - BMPs
 - Incentives/voluntary approach
- D. Enforcement
- E. Implementation Scheduling

VII. Economics

APPENDIX C. EXISTING AND POTENTIAL BENEFICIAL USES

The beneficial uses and abbreviations listed below are standard designations as listed in *The Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Third Edition 1994, The Sacramento River Basin and the San Joaquin River Basin*.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.

Aquaculture (AQUA) - Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Preservation of Biological Habitats of Special Significance (BIOL) - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Commercial and Sport Fishing (COMM) - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Estuarine Habitat (EST) - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Freshwater Replenishment (FRSH) - Uses of water for natural or artificial maintenance of surface water quantity or quality.

Ground Water Recharge (GWR) - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Industrial Service Supply (IND) - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

Migration of Aquatic Organisms (MIGR) - Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW) - Uses of water for hydropower generation.

Industrial Process Supply (PRO) – Uses of water for industrial activities that depend primarily on water quality.

Rare, Threatened, or Endangered Species (RARE) - Uses of water that support aquatic habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beach combing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Shellfish Harvesting (SHELL) - Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Warm Freshwater Habitat (WARM) - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Wildlife Habitat (WILD) - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

APPENDIX D Draft Implementation Plan

It is anticipated that the overall implementation of the Inland Surface Waters Plan will occur in two phases. The initial phase would consist of the planning process during which time, water bodies are categorized; sub basins are developed within Regional Board boundaries to facilitate assessment; assessments are conducted; dischargers identified; and areas as well as water bodies of concern are prioritized. The second phase would consist of the actions based on the findings of the planning and assessment phase. If an area or water body's beneficial uses are not impaired or threatened and it is not a priority of the Regional Board, formation of watershed management groups are encouraged to help focus future efforts and maintain water quality. Once an area or water body's beneficial uses are impaired or threatened and it becomes a priority of the Regional Board, any relevant agreements between cooperating agencies would be activated. If further action is required by the Regional Board, two approaches would be available: 1) direct application of the state nonpoint source pollution management plan (NPSMP) or 2) development of a watershed management plan which incorporates the NPSMP (Table D-1).

Table D-1. Inland Surface Waters Plan Implementation in
Agricultural Dominated Water Bodies.

- I. Planning
 - A. Categorization of water bodies
 - B. Development of sub basins for assessment
 - C. Assessment
 - D. Prioritization of areas and water bodies of concern

- II. Response to Findings from the Planning Phase
 - A. Area and/or water body not impaired or threatened
 - 1. Local stakeholder watershed management group formation encouraged
 - B. Area and/or water body prioritized
 - 1. Activation of relevant interagency agreements
 - 2. Where action by Regional Board and State Board necessary
 - a. Actions as defined through the NPSMP
 - b. Actions as defined through a watershed management program

“Actions” would include: development of a management plan; evaluation of the program; and, as needed, refinement of the management plan, assessment/reassessment of beneficial uses and objectives, and further regulatory actions.

Details of the planning phase and a potential watershed approach are outlined in the following sections.

Phase I: Planning

A. Categorization of water bodies

- Agricultural water management agencies will identify and determine categories of water bodies within their boundaries and submit the list to the Regional Board for adoption.
- If a water body is not submitted for listing, it will be assumed to be a natural water body rather than constructed or ag dominated.
- Using the agency lists, the Regional Boards will adopt a list of categorized water bodies through a public hearing process.

B. Development of sub basins for assessment

- With the assistance of agricultural water management agencies and other interested parties, the Regional Boards will designate sub watershed basins as appropriate within their boundaries.
- During this process, individual water management agencies are encouraged to consolidate into watershed management areas.
- Sub basins will be adopted by the Regional Board through a public hearing process.

C. Assessment

- The initial assessment will include a review of historical data and focus any additional monitoring on seasonal acute and chronic toxicity to determine the overall health of the system.
- Initial monitoring will include discharge from the sub basin and may include selected upstream sites.
- Water management agencies may combine within Regional Board approved watershed management area boundaries to assess the cumulative impacts of their discharges on downstream beneficial uses.

Option 1. Water agencies and other dischargers conduct initial assessment.

Option 2. Regional Boards conduct initial assessment.

Option 3. Assessment conducted jointly.

--If the assessment is not conducted by the water agencies:

Option 1. The area or water body under concern becomes a Regional Board priority.

Option 2. Assume no impact so designate beneficial uses and associated objectives in all non exempt upstream water bodies based on the first downstream water body with beneficial uses listed in the Basin Plan.

Option 3. Areas without assessment information would not be eligible for 319(h) grant funding.

Option 4. If regulatory actions result in issuance of Waste Discharge Requirements (Tier III under the NPSMP), any assessment costs incurred by the Regional Board will be recaptured through fees.

--If the assessment is not conducted by the Regional Boards:

Option 1. No penalties will be incurred by water management agencies.

D. Prioritization of areas and water bodies of concern

- Using the assessment information and other available data, the Regional Boards will prioritize areas and individual water bodies of concern and begin response activities.
- Prioritization will follow the hierarchy outlined earlier.
- After the initial assessment, the monitoring program may be reduced or eliminated based on results.

Anticipated Timeline for Planning Phase:

<u>Timeline</u>	<u>Action</u>
Adoption of Plan Within 1 year	Ground Zero. Hydrologic boundaries identified by Regional Boards.
Within 1.5 years	List of water bodies and categories submitted by water agencies to the Regional Boards.
Within 2 years	Boundaries and water body listings adopted by Regional Boards.
Within 4 years	Initial water quality assessment complete.
Within 5 years	Sub watersheds and selected water bodies prioritized.
Every 5 years	Sub watersheds and water bodies reevaluated for priority status.

(Timeline will depend on staff and resources allocated to the Regional Boards)

Reasoning

Categorization of water bodies will initially rely on input from local water management agencies since these agencies would know if water bodies within their boundaries are natural and dominated by agricultural water management or constructed facilities. The agencies would then provide the information to the Regional Boards. Public review prior to adoption by the Regional Board would allow input from local stakeholders and other interested agencies. If the water management agency does not supply information on a water body, the water body will be designated as a natural channel by default for purposes of setting objectives and determining potential impacts to beneficial uses.

In order to effectively evaluate threatened beneficial use impairment within the diverse ecosystems encompassed by each Regional Board boundary, the regions need to be divided into sub basins. The initial division will be developed jointly between agricultural water management agencies and the Regional Board. The boundaries for the sub basins will then be subject to the public review process through adoption by the Regional Board. During the development of these sub basins, individual water management agencies are encouraged to consolidate into logical watershed management area (WMAs) to reduce the total number of sub basins which would require monitoring during assessment.

The initial water quality assessment is critical in order to allow the Regional Boards to prioritize areas on which to focus resources. The first phase of the assessment would include the review of any existing data. Additional work would focus on the overall health of the system by using acute and chronic toxicity objectives rather than numeric objectives since the cost of analyzing all constituents with numeric objectives could be prohibitive

(over \$5,000 per sample). Even if specific constituents are not analyzed, the cost of a statewide program could be substantial. Whether the total cost is borne by the water agencies or Regional Boards or somehow shared between the two is under debate. A preferred option is for both groups to be responsible: the agricultural community monitoring selected discharges within the WMA and the Regional Board monitoring the main river systems downstream. Overall monitoring costs within a WMA may be mitigated if individual water agencies combine into a watershed group and if NPDES dischargers are involved in the overall program.

Since the initial assessment will result in the prioritization of areas and water bodies of concern, a default is needed which would encourage the completion of the program. Many options are presented since time was too limited to attempt to develop consensus. The main concern with the options is that they may result in undue hardship at a time when resources are severely limited.

The prioritization of WMAs will govern future allocation of resources; therefore, the process must be public to include input from various agencies such as the Department of Fish and Game and the U.S. Fish and Wildlife Service as well as other interest groups. To insure a public process, the listing of priority WMAs may require inclusion in Basin Plans.

Concern

Concern has been expressed that depending only on local water management agencies for the initial evaluation of water body categories would preclude some stakeholders, particularly POTWs (Publicly Owned Treatment Works) and other NPDES (National Pollutant Discharge Elimination System) dischargers, from sharing valuable information during this critical stage.

Point source dischargers are subject to regulation under the NPDES program, which, in addition to mandating compliance with water quality standards in treated effluent, also holds them directly responsible for impact on receiving water quality. Throughout California agricultural waters share drainage courses with NPDES discharges. Wherever such a situation exists, water body characterization (and consequent Beneficial Use classifications) would be crucial in determining level of treatment requirements. These types of determinations would, of necessity, have the potential for major ramifications in the areas of resource requirements and compliance implications for NPDES dischargers.

The NPDES program now requires completion of comprehensive "Receiving Waters Studies" by "Major Dischargers" (those facilities discharging >1 Million Gallons Per Day). In many cases, these studies are underway and some have been completed. The studies include characterizing water quality and documenting beneficial uses in receiving waters. To complete these studies it is essential to catalogue upstream and downstream influences on the receiving waters. In this process, information as to water body types and other contributors is gathered. Such a data base would clearly be helpful in the water body characterization process. Thus, coordination with NPDES dischargers early in the characterization phase should be considered as an option.

Phase II: Response to Findings from the Planning Phase

After the planning phase, an area and/or water body will either be prioritized or not by the Regional Board. (Prioritization would occur if the area and/or water body is determined to be impaired or threatened through either the assessment process or historical information.)

If an area and/or water body is not prioritized, local stakeholders are encouraged to be proactive and form watershed management groups to assess and plan future activities within their areas if they so desire. If an area and/or water body is prioritized, the first step is to activate any relevant interagency agreements since many such agreements already exist which provide guidance for response to water quality concerns. The next step is taken if further action is required by the Regional Board. Further action can follow two paths: 1) actions defined through the NPSMP and 2) actions defined through a watershed management program which incorporates the concept of net environmental benefit and utilizes the NPSMP. At a minimum, these "actions" should include:

- Development of a management plan;
 - Evaluation of the program;
- And, as needed:
- Refinement of the management plan;
 - Assessment/reassessment of beneficial uses and objectives;
 - Further regulatory actions.

The management plan would incorporate the hierarchy for regulation outlined in the Implementation section of this document..

Although traditional regulation of agricultural discharges through the NPSMP has occurred since 1988, regulation through watershed management is in its fledgling stages. Time constraints limited the amount of time that the task force could spend on the watershed concept; however, it was determined that a watershed approach may be the most logical regulatory mechanism to provide net environmental benefit with increasingly shrinking resources in priority areas of concern.

Watershed Approach

The following guideline presents a logical sequence of events if regulation of agricultural dominated water bodies in priority sub basins is approached through a watershed process.

WATERSHED REGULATORY PROGRAM FOR AGRICULTURAL WATER

- I. Formation of Responsible Watershed Entities
- II. Development of Watershed Management Plans (WMPs)
 - A. Transmittal of RB/SB guidance on WMPs to priority watershed entities
 - B. Development of WMPs by entities
 - C. Public notice and comment on WMPs
 - D. Approval of WMPs by RBs
 - E. Periodic update of WMPs by entities with RB approval
- III. Implementation of WMPs
 - A. Begin detailed monitoring program
 - B. Best Management Practices (BMP) development and testing
 - C. Implementation of BMPs
 - D. Assessment of water quality and time schedule compliance
 - E. Public outreach and technology transfer
- IV. Enforcement of noncompliance (by RBs)

Note that watershed management programs should not require the development of statistics identifying total maximum daily loads (TMDLs) and resultant waste load allocations (WLAs). Current background information is insufficient to accurately establish implementable TMDLs or WLAs or to insure equity and capability in the assignment of responsibilities. Instead, TMDLs should be viewed as a potential tool to mitigate water quality impacts in cases where other tools have been ineffective.

Due to time constraints, agreement could not be met on the specific tasks which should be performed within each of the three main components of the watershed regulatory program outlined above. Various options are listed below.

Option 1

Each Regional Board will develop its own agricultural watershed management program based on the above outline.

Option 2

I. Formation of responsible watershed management entities.

II. Development of Watershed Management Plans (WMPs):

A. Transmittal of RB/SB guidance on WMPs to priority watershed entities

- At a minimum, the WMP must contain the following components:

- identification of funding sources, stakeholders and discharges;

- a program of pollution prevention and control using Best Management Practices (BMPs);

- the benefits of control measures that are being used and the steps that will be taken to protect, to the extent practicable, aquatic life throughout the watershed based on the regulatory hierarchy outlined previously;

- a monitoring and compliance program which would document the success of the program and verify that receiving water is not impacted;

- a time schedule for meeting applicable water quality objectives.

- The WMP should also include a timetable for the designation/redesignation of beneficial uses and appropriate objectives, if needed.

- The WMP must be consistent with the state's NPSMP.

- Total Maximum Daily Loads (TMDLs) as defined by the State Board may be a tool used through a WMP to improve water quality and beneficial uses.

B. Development of WMPs by entities

- Once a watershed has been prioritized as a high priority WMA, local stakeholders will have one year (or a time period specified by the Regional Board) to develop a WMP.

C. Public notice and comment on WMPs

D. Approval of WMPs by RBs

E. Periodic updates of WMPs by entities with RB approval

- WMPs will be reviewed every five years.

III. Implementation of Watershed Management Plans:

- Implementation will occur as a phased and priority based process utilizing the following schedule once the area has been listed as a priority:

<u>Timeline</u>	<u>Action</u>
w/in 1 year	WMP proposed and finalized.
w/in 4 years	Begin detailed monitoring program. Develop and test best management practices (BMPs) Implement BMPs. Assess water quality and time schedule compliance. Public outreach and technology transfer.
Every 5 years (or time period specified by the Regional Board)	WMPs reviewed.
End of 10 years (or time period specified by the Regional Board)	Appropriate beneficial uses designated and numeric objectives reviewed. Plan revised or further regulatory action as appropriate.
Every 5 years	WMAs reevaluated for priority status.

(The time period will depend on staff and resources allocated to the Regional Boards.)

IV. Enforcement of Noncompliance:

- Enforcement activities will focus on priority watersheds and specific water bodies identified by the Regional Boards.
- Beneficial use impairments will be regulated through provisions of the State Nonpoint Source Management Plan (the three tiered process).
- Implementation of BMPs, in accordance with an approved watershed management plan and schedule, constitutes compliance with the State NPSMP and with requirements to achieve water quality standards.
- If the provisions of a watershed management plan are not implemented on schedule, Regional Boards may revert to traditional enforcement mechanisms.

Reasoning

At this time, the Regional Boards do not have the authority to require that local stake holders manage area wide issues. Incentives must be provided to encourage the formation of responsible entities. Financial incentives include limiting the amount of monitoring required during assessment. Rather than each district at a minimum monitoring its own discharge, two to four monitoring points may suffice for the entire watershed. Regulatory incentives include the option of continuing to apply any interim objectives as interim and/or continuing a variance if the water body is contained within a approved WMA. An additional regulatory incentive is the concept that if a group submits a WMP and it is approved by the Regional Board, that group is considered in compliance with the ISWP as long as the provisions of the WMP are followed.

The minimum requirements of the WMP are to insure that the goals of the Plan are clearly defined, the steps being taken are reasonable and logical, there is some measurement for the

success of the program, and that an endpoint is determined. Any plan for controlling agricultural discharges must be consistent with the nonpoint source implementation strategy outlined in the NPSMP.

Watershed management programs should not require the development of statistics identifying total maximum daily loads (TMDLs) and resultant waste load allocations (WLAs). Current background information is insufficient to accurately establish implementable TMDLs or WLAs or to insure equity and capability in the assignment of responsibilities. Instead, TMDLs should be viewed as a potential tool to mitigate water quality impacts in cases where other tools have been ineffective. The definition of a TMDL or phased TMDL as a "quantifiable target" should be used as is consistent with the State Board's CWA 303(d) process (dated July 1992). The quantifiable target can be mass loading, water concentration, percent reduction or improvement (e.g., 80% of implementation of management practices), or any other target that can be measured.

It would be preferred to schedule goals for completion of activities; however, any actions conducted are limited by consistent and adequate funding. Therefore, the anticipated timeline may vary depending on adequate resources.

In general, regulatory action will be triggered when a beneficial use is threatened or impaired and the area and/or water body is prioritized by the Regional Board. During the initial assessment, this trigger would be either acute or chronic toxicity, depending on the category of water body assessed in addition to historical information.

In order to best utilize limited resources, regulatory activities will focus on priority WMAs although selected individual water bodies of high priority (e.g., the Delta Mendota Canal and California Aqueduct or water bodies listed with endangered species) will not be excluded. This redirection of resources highlights the critical nature of the initial assessment and the prioritization of WMAs.

Part V

Effluent-Dependent Water Bodies Task Force Report

REPORT OF THE
EFFLUENT-DEPENDENT WATERS
TASK FORCE

FOR CONSIDERATION
OF ISSUES RELATED TO THE
INLAND SURFACE WATERS PLAN

October 1995

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EFFLUENT DEPENDENT TASK FORCE ATTENDANCE ROSTER

Name	Interest Category	M/A	April 26/27	May 18	June 22	July 27	Aug 24	Sept 28
Nancy Reichard (Facilitator)								
Syed Khasimuddin	SWRCB	M						
Gail Linck	SWRCB	A						
David Phillips	Industry	M						
Robert Hultquist	Public Health	M						
Terry Oda	USEPA	A						
David Smith	USEPA	M						
Randal Orton	POTW	A						
David Talcott	Stormwater	A						
Bill DePoto	Stormwater	M						
Greig Peters	RWQCB	M						
Daniel Diehr	Water Supply	A						
Mary Ellen Harris	Water Supply	M						
Dorothy Green	Environmental	M						
Nita Davidson**	C.D.P.R.	M						
Robert Robinson	Agriculture	M						
Brad Hagemann	RWQCB	A						
Sam Furuta	POTW	M						
Michael Kiado	Public Health	A						
Jaque Forrest*	Environmental	M						
John Sanford	Environmental	A						
Jack D. Linn	Fish & Wildlife	M						
Larry Walker								
John Behjan								
Michael Mitsch								
Gerald Bowes								
Dave Cohen								
Sharon Green								
Ron Gauthier								
Surendra Thakral								
Kathie Keber								
Glen Birdzel								

M = Member

A = Alternate

* = Jaque Forrest substituted Dorothy Green.

** = Nita Davidson decided to pull out after the April meeting.



= Present

= Absent

EFFLUENT-DEPENDENT WATER BODIES TASK FORCE REPORT

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Appendix 1: Pima County Proposal re: data and implementation needs in relation to developing water quality objectives.

Appendix 2: Response of the Chemical-Specific Objectives Task Force re: feasibility, applicability, and legality of methods to develop water quality objectives.

Appendix 3: Copies of letters to fish and wildlife agencies sent by the Task Force.

EFFLUENT-DEPENDENT WATER BODIES TASK FORCE REPORT

1.0 INTRODUCTION

The Effluent-Dependent Water Bodies Task Force met six times from April 1995 to September 1995 and for two mid-course meetings on June 1 and August 1, 1995. Task Force members and other participants discussed a number of issues pertaining to the unique effluent-dependent water bodies in the State. The outcome of discussions is presented in this report. The report is organized so that content reached by consensus is presented as regular text. Areas of disagreement or alternative language are presented as options or *italics* within the regular text.

1.1 GOAL STATEMENT

The goal of the effluent-dependent water bodies task force is to develop recommendations for the State Water Resources Control Board regarding how to provide reasonable protection for appropriate beneficial uses of effluent-dependent water bodies.

1.2 BACKGROUND

Previous Efforts to Adopt Water Quality Regulations for Effluent-Dependent Water Bodies

The now rescinded Inland Surface Waters Plan (ISWP) and Enclosed Bays and Estuaries Plan (EBEP) identified some new categories of water bodies. "Category (a)" water bodies were considered to be:

"Water bodies, or segments thereof, that are not naturally perennial and, as of the date of adoption of this plan, support, or are planned to support within six years of plan adoption, aquatic habitat beneficial uses during the dry season as a result of the discharge of reclaimed water."

The plans included specific provisions for addressing these waters. The statewide chemical-specific water quality objectives were to be applied as performance goals to waters designated as Category (a) for purposes of regulating reclaimed water and non-point source discharges. Site-specific objectives were to be developed within six years for any constituents in these discharges for which the statewide water quality objectives were inappropriate. At the end of the six year period, if site-specific numerical water quality objectives had not been adopted, the statewide objectives applied. In addition, point source discharges which were not reclaimed water had to meet the statewide objectives upon plan adoption. The U.S. Environmental Protection Agency (USEPA) formal action on the plans included disapproval of the definition and performance goal approach for Category (a) water bodies.

Some recognition of these water bodies was made through the publication of "Guidance for Modifying Water Quality Standards and Protecting Effluent Dependent Ecosystems" (USEPA, Region 9, 6/92). This guidance described the possible application of four methods for modifying water quality standards: Total Maximum Daily Load (TMDL) analysis, Alternate Water Quality Criteria development, Ecological Benefit Comparison (Use Attainability Analysis), and Economic Feasibility Analysis (Use Attainability Analysis). The overall premise was that standards should be revised for such water bodies in order to help preserve or create in-stream flows that support desirable ecosystems.

Water Reclamation and Effluent-Dependent Water Bodies

As water supplies become more scarce and wastewater quality improves, use of reclaimed water as a source of water has increased, particularly in southern California. The contribution of reclaimed water to the water supply provides a variety of economic and environmental benefits, both locally and elsewhere in the state. For instance, the use of reclaimed water reduces reliance on imported water supplies from northern California and the Colorado River basin. By easing demand for imported water, water reclamation may result in ecological benefits where these distant water supplies are located.

However, with the application of more stringent regulations to wastewater discharges, including those of unused reclaimed water, the costs of treatment could increase. These higher treatment costs may pose either an incentive or a disincentive to reclamation, depending on the specific circumstances (such as the feasibility of 100 percent reclamation with no discharge, the costs of the treatment deemed necessary to meet water quality objectives, and the cost of potable water relative to reclaimed water). Presently, for water reclamation to be viable, most projects require some discharge to a local water body during the "build-out" phase, seasonally or in other times of low demand. Discharge of reclaimed water to naturally ephemeral and intermittent streams, *and in some cases to perennial streams*, have resulted in the creation of perennial or interrupted water bodies with riparian habitat that would not exist in the absence of the discharge *or perennial water bodies with changed habitat*. *New or changed* habitats may be beneficial to various types of species.

1.3 PROBLEM STATEMENT

Effluent-dependent water bodies are not currently addressed by statewide water quality objectives and beneficial use categories. In the new statewide water quality control plans, therefore, the task force supports defining these water bodies, determining the appropriate beneficial uses, and describing how water quality objectives can be derived to protect the beneficial uses. The task force proposes an approach different from that described in the previous plans, as the previous approach was unacceptable to USEPA. Additionally, the proposed approach includes beneficial uses in addition to aquatic habitat.

1.4 DEFINITIONS

Ephemeral Stream: a stream, or reach of stream, that flows briefly only in response to precipitation or snow melt in the immediate locality and whose channel is above the region's water table.

Intermittent Stream: a stream, or reach of stream, that flows only at certain times of the year as when it receives flow from springs, melted snow, localized precipitation, or a controlled source such as a dam or water treatment plant.

OPTION 1:

Effluent-Dependent Water Body: a water body, or segments thereof, in which the non-storm flow is primarily attributable (more than 50%) to discharges from anthropogenic sources excluding reservoir releases.

OPTION 2:

Treated Effluent-Dependent Water Body: a water body, or segments thereof, in which the non-storm flow is primarily attributable (more than 50%) to treated discharges from anthropogenic sources excluding reservoir releases.

OPTION 3:

Treated Wastewater-Dependent Water Body: a water body, or segments thereof, (1) for which the non-storm flow is primarily attributable to treated discharge; and (2) that, in the absence of a discharge referred in (1) and other primarily anthropogenic surface or subsurface flows, would be considered an ephemeral or intermittent water body.

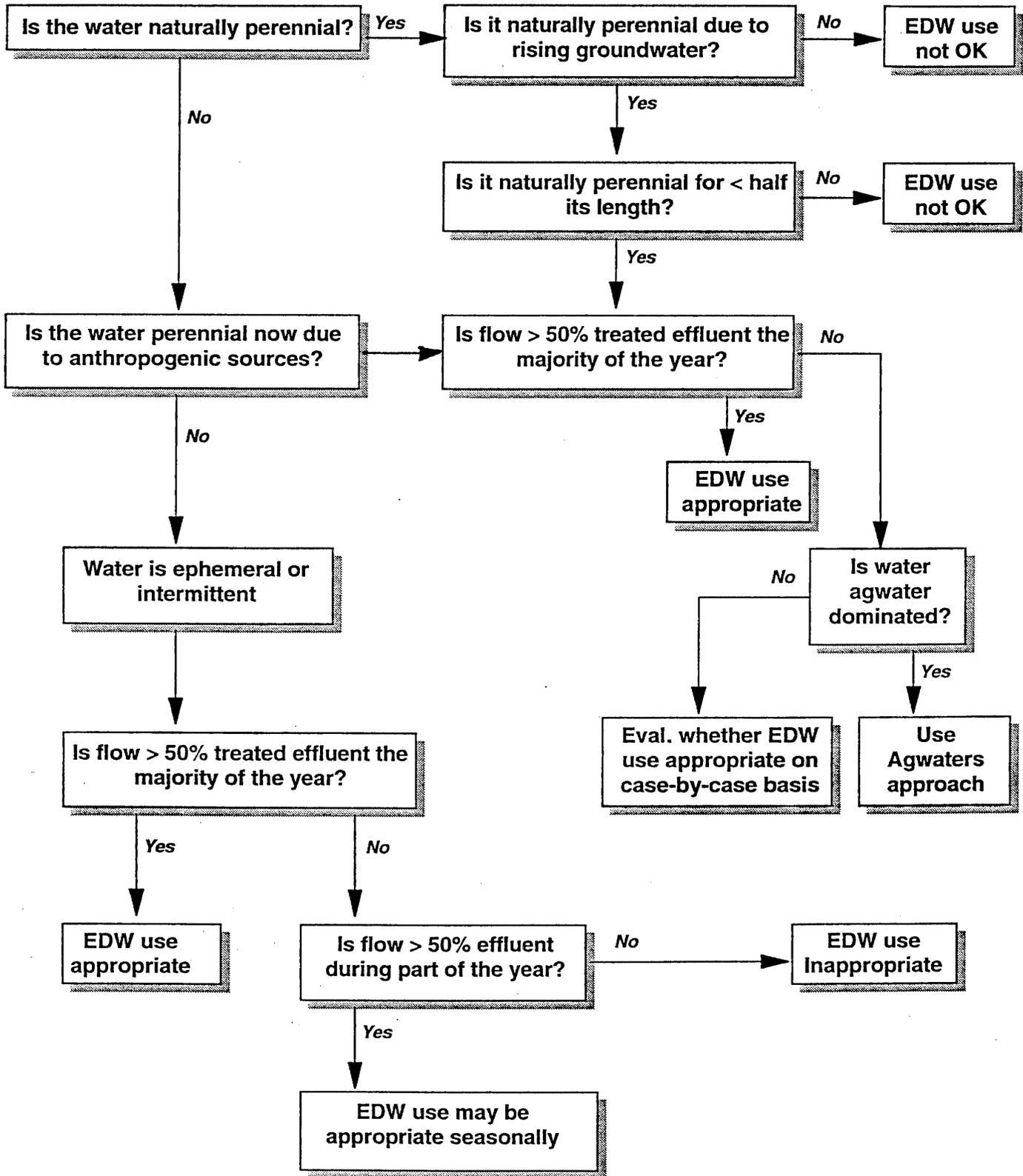
Untreated Discharge-Dependent Water Body: a water body, or segments thereof, (1) for which the non-storm flow is primarily attributable to untreated discharge; and (2) that, in the absence of a discharge referred in (1) and other primarily anthropogenic surface or subsurface flows, would be considered an ephemeral or intermittent water body.

OPTION 4:

Effluent-Dependent Water: a water body, or segments thereof, for which (1) the non-storm flow is primarily attributable to treated discharge, and (2) that, in the absence of a discharge referred to in (1), other primarily anthropogenic surface or subsurface flows, or surface or subsurface flows affecting less than half its length caused by naturally occurring rising groundwater, would be considered an ephemeral or intermittent water body (see Figure 1-1, Flowchart for Evaluating Applicability of EDW Aquatic Life Use subcategories).

FIGURE 1-1

Flowchart For Evaluating Applicability of EDW Aquatic Life Use Subcategories



1.5 RELATIONSHIP TO AGRICULTURAL WATERS TASK FORCE

The SWRCB established two task forces to consider special types of water bodies, the Effluent-Dependent Water Bodies Task Force and the Agricultural Waters Task Force. These two task forces have been meeting independently, although there is some overlap in attendees and membership. The intent of the task forces is to address issues unique to, and establish categories for, effluent-dependent water bodies in the ISWP.

There also is overlap in the definitions considered by the two task forces. This overlap may cause some concern because similar issues may have been addressed differently by the two task forces; however, the overlapping attendees have somewhat alleviated this situation. The state should minimize the differences in the promulgation of the ISWP. Finally, any remaining gray area will be resolved when a specific water body is designated into a special category.

2.0 LIST OF TASK FORCE MEMBERS AND ALTERNATES

The following is a list of Task Force members and alternates who participated in the development of the report and represented interest groups.

Nancy Reichard (Facilitator)	Center for Resolution of Environmental Disputes
Syed Khasimuddin	SWRCB
Gail Linck	SWRCB
David Phillips	U.C. Davis
Bob Hultquist	CA. Dept. of Health Services
Terry Oda	USEPA
Dave Smith	USEPA
Randal Orton	Las Virgenes Municipal Water District
Dave Talcott	City of Los Angeles
Bill DePoto	L.A. Co. Dept. of Public Works
Grieg Peters	RWQCB-9
Dan Diehr	San Diego County Water Authority
Mary Ellen Harris	Eastern Municipal Water District
Dorothy Green	Heal the Bay
Nita Davidson	CA Dept. of Pesticide Regulation
Robert Robinson	Coachella Valley
Jack D. Linn	CA. Dept. of Fish & Game
Brad Hagemann	RWQCB-3
John Sanford	Environmental Alliance
Sam Furuta	Los Angeles County Sanitation District
Michael Kiado	CA. Dept. of Health Services
Jaque Forrest	Heal the Bay

3.0 ISSUES ADDRESSED

The following sections present the results of the Task Force discussions regarding beneficial uses, water quality objectives, implementation, policy options, and other issues.

A three-step process is used by the SWRCB to protect and enhance the quality and quantity of the State's inland surface waters. This process consists of:

- (i) The designation of beneficial uses (covered in Section 3.1).
- (ii) The identification of water quality objectives to protect those uses (covered in Section 3.2).
- (iii) The development of programs to implement and ensure compliance with (i) and (ii) (covered in Section 3.3).

The Task Force has agreed in principle that the beneficial uses of effluent-dependent water bodies should be reviewed and revised where necessary to take into account their unique character as created water bodies whose aquatic life depends on both effluent quantity and quality. Assuming the State designates beneficial uses specifically for effluent-dependent water bodies, the next step would be the identification of water quality objectives to protect those uses.

3.1 BENEFICIAL USES

In order to more accurately reflect the variety and character of inland surface water bodies in the State, and to allow for the proper level of protection for all such water bodies, including existing and potential effluent-dependent water bodies, the Task Force believes that it would be desirable to establish several new categories and subcategories for several existing beneficial uses. After an official listing of subcategories is established, the appropriate subcategories which are applicable for each water body or segment thereof could then be identified. Based on the combination of natural conditions, and any existing effluent-dependent condition, each water body would be designated with the proper beneficial use designation.

To satisfy the federal requirement that the State establish numerical objectives for all priority pollutants for which the USEPA has developed water quality criteria, it will be necessary to establish water quality objectives which are appropriate for the new beneficial uses.

The relative sensitivity of the community of aquatic life which becomes established within an effluent-dependent water body may be different from that found in a non-effluent-dependent water body. In the extreme case (where the perennial presence of water in a water body is completely dependent on a discharge of effluent), the existence of most of the aquatic life is also dependent on the effluent. Efforts to develop numerical objectives for such effluent-dependent water bodies should not ignore the fact that the physical presence of the aquatic life is proof of a level of protection for those species.

When determining the proper level of protection for effluent-dependent water bodies, we believe that consideration must be given to the alternative conditions which would exist within the water body in the absence of effluent. In the semi-arid southwest, many streams which were naturally ephemeral or intermittent have developed some perennial flow due to human uses and releases of water within the watersheds of these streams. The presence of this effluent has led to the establishment of aquatic species which would otherwise not occur within the streams. The Task Force believes that the minimum level of protection which is required for such effluent-dependent aquatic species should generally bear a relationship to the quality of the water which created the aquatic habitat. However, in situations where full attainment of beneficial uses could be achieved with better water quality, Regional Boards may wish to pursue additional water quality improvements on a site-specific basis.

New subcategories addressing human health protection were developed. For all of the new uses, exposure scenarios will have to be developed that will result in appropriate human health protective water quality objectives. Those human health-related uses examined were: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Recreation, Fish Consumption, Sport Fishing, and Ground Water Recharge.

The following are examples of beneficial use categories and subcategories which could be developed for different water bodies and the task force's ideas concerning their application to effluent-dependent water bodies.

The creation of new subcategories of beneficial uses is one possible way to provide the proper level of protection for various water bodies of the State. The Task Force has identified, for consideration, use designations that could apply to effluent-dependent water bodies. These uses, including previously designated (current) beneficial uses which the Task Force identifies as potentially applicable to effluent-dependent water bodies, are described below. However, the uses listed may not all be applicable to a given water body, and some will need to be designated on a site-specific basis.

3.1.1 CURRENT BENEFICIAL USE DESIGNATIONS

Agricultural Supply [for Food Sources] (AGR[-1]): Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing. [Note: The language in brackets modifies current AGR use designation.]

Industrial Service Supply (IND): Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

3.1.2 POSSIBLE SUBCATEGORY BENEFICIAL USE DESIGNATIONS

Municipal and Domestic Indirect Supply (MUN-2): Uses of water for community, military, or individual water supply systems after conveyance, storage, blending, and/or treatment.

Municipal and Domestic-Indirect Drinking Water Supply (MUN-2): Indirect uses of surface or ground waters for community, military, or individual drinking water supply systems, assuming additional treatment to become suitable for potable use.

Agricultural Supply for Non-Food Sources (AGR-2): Uses of water, excluding direct use on food crops, for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Groundwater Recharge-Drinking Water Supply (GWR-1): Natural or artificial recharge of groundwater for purposes of future extraction for use as community, military, or individual drinking water supplies, following a residence time of 12 months or less before withdrawal from the aquifer.

Groundwater Recharge-Drinking Water Supply (GWR-2): Natural or artificial recharge of groundwater for purposes of future extraction for use as community, military, or individual drinking water supplies, following a residence time of 12 months or more before withdrawal from the aquifer.

Ground Water Recharge for Non-Drinking Water Supply (GWR-3): Uses of water for recharge of groundwater or halting of saltwater intrusion of freshwater aquifers, where no drinking water consumption occurs.

Ground Water Recharge-Domestic Use (GWR-2): Uses of water for recharge of ground water used as a domestic water supply, where sufficient blending to control the reclaimed water contribution, and reservoir retention occur prior to water extraction. Wellhead treatment may be required.

3.1.3 POSSIBLE NEW BENEFICIAL USE DESIGNATIONS

Effluent-Dependent Warm Freshwater Habitat (EDW): Uses of water that support ecosystems present in water bodies or segments thereof in which the annual average dry weather flow is primarily attributable (more than 50%) to discharges from anthropogenic sources, excluding reservoir releases.

Effluent-Dependent Warm Freshwater Habitat (EDW-1): Uses of water that support warm water ecosystems primarily attributable to treated discharge, including, but not limited to, preservation or enhancement of aquatic and riparian habitats, vegetation, fish, or wildlife including invertebrates.

Untreated Discharge-Dependent Warm Freshwater Habitat (EDW-2): Uses of water that support limited warm water ecosystems due to water quality conditions primarily attributable to untreated discharge, including, but not limited to, preservation or enhancement of aquatic and riparian habitats, vegetation, fish, or wildlife including invertebrates.

Full Body Contact Recreation (REC-1): Uses of water which cause the human body to come into direct contact with water to the point of complete submergence. The use is such that incidental ingestion of the water is likely to occur and certain sensitive body organs such as the eyes, ears, and nose may be exposed to direct contact with the water. [Note: This use would apply to waters which are deep enough in at least some reaches for full body contact to occur.]

Partial Body Contact Recreation (REC-2): Uses of water which cause the human body to come into direct contact with water, but normally not to the point of complete submergence. The use is such that ingestion of the water is not likely to occur, nor will sensitive body organs such as the eyes, ears, and nose normally be exposed to direct contact with the water. [Note: this use would apply to waters which are too shallow for full body contact to occur, and is different from the existing REC-1 and REC-2.]

Noncontact Water Recreation (REC-3): Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water. These uses include, but are not limited to, picnicking, sunbathing, hiking, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Fish Consumption (FC): Uses of water which support game species. Does not include water bodies designated as catch and release fisheries by the Department of Fish and Game.

Fish Consumption (FC-1): Uses of water by humans for harvesting fish or other aquatic organisms for commercial, recreational, and/or subsistence fishing consumption purposes.

Fish Consumption Limited (FC-2): Uses of water by humans for harvesting fish or other aquatic organisms for incidental or occasional recreational and/or consumption purposes, but not for commercial or long-term subsistence purposes.

Sport Fishing, Planted Species (SFH): Uses of water for recreational collection of sport fish or other organisms that are artificially planted in the water body.

3.2 WATER QUALITY OBJECTIVES

This section summarizes the Task Force's discussions on water quality objectives for effluent-dependent water bodies and provides some potentially applicable methods for developing objectives.

3.2.1 OPTIONS

The Task Force identified a number of methods which are potentially useable for developing objectives for effluent-dependent water bodies. Combinations of methods may be appropriate for developing objectives for particular beneficial uses and/or constituents. The methods are briefly described below. Many of the data and implementational needs associated with these

options are addressed in a Pima County proposal (Tables 1-3) (Appendix 1).

The Task Force did not review the feasibility, applicability, or legality of these objective development methods. However, the Task Force asked the Chemical-Specific Objectives Task Force to review a draft version of these methods and provide feedback concerning their feasibility, applicability, and legality with respect to objectives development. The Chemical-Specific Objectives Task Force provided some analysis of these methods on September 11, 1995 (Appendix 2).

3.2.2 DESCRIPTIONS OF POTENTIAL METHODS

1a. EPA Recalculation Method. Toxicity test results for species not found in effluent-dependent waters (EDWs) would be removed from the data set, results for species found in the EDWs would be substituted, and the objectives would be recalculated. This is the EPA preferred recalculation method. This method could facilitate consideration of all resident species or only indigenous species.

1b. Recalculation Method Used By Arizona. Toxicity test results for species not found in EDWs would be removed from the data set and the objectives would be recalculated. This is the method used by Arizona for EDWs and ephemeral aquatic and wildlife uses. This method could facilitate consideration of all resident species or only indigenous species.

2. Recalculate Using Water Effect Ratios or Other Site Specific Methods. EPA's water effect ratio (WER) method is usually used on a site-specific basis. Under this method, good quality "reference" EDWs could be identified, perhaps using biological indicators (poorly understood) or chronic toxicity test results (e.g., < 1TUC). WER method would be applied to recalculate objectives for these reference EDWs. The most protective values obtained through the WER studies for reference EDWs could potentially be applied as objectives for EDWs as a class. Alternative statistical tools for extending WER results to EDWs as a class may exist, but have not been discussed in detail. This method conceivably provides a basis for establishing EDW objectives based on empirical studies of EDW ecosystems and ambient water quality.

In addition to the WER method, EPA has developed other methods for adjusting EPA-recommended national water quality criteria. These include adjustment of the acute-to-chronic ratio and adjustment of the bio-concentration factor.

3a. Develop New Criteria Based On Local Species. Sensitive species resident in reference EDWs would be identified based on field studies. Criteria would be developed for EDWs through normal laboratory criteria development procedures. This method could facilitate consideration of all resident species or only indigenous species.

3b. Develop New Criteria Based On Ambient Conditions. Criteria would be developed for EDWs based on testing of ambient quality. This method could be implemented on a site

specific basis, for EDWs as a class, or for EDW groupings which reflect ecoregion, geographic, or other considerations. This method could include provisions that ambient quality must be sufficient to ensure that there is no ambient toxicity. This method could facilitate consideration of all resident species or only indigenous species.

4. Use Lowest Toxicity Test Results. Use the lowest genus mean acute value from all genera in the EPA data set, rather than statistical predictions of acute toxicity values for untested organisms, to calculate acute and chronic objectives. Arizona used this method to calculate objectives for non-EPA priority pollutants where there were insufficient acute test data to develop national criteria guidance using the EPA methodology.

5. Lower the Protection Level. Adjust EPA criteria for protection of 75% to 90% of all species nationwide rather than all species. It may be possible to justify lower protection levels in EDWs since application of criteria based on the full protection level could result in discharge removal and resulting harm to EDW aquatic ecosystems.

6. Adjust the Averaging Periods. For acute objectives use an averaging period of 2-4 days rather than 1 hour, and for chronic objectives use an averaging period of 30-60 days rather than 4 days. This approach may be more consistent with the testing periods actually used by EPA in developing national criteria for many pollutants.

For human health objectives it may be reasonable to use an averaging period of one year or longer. This approach is consistent with the lifetime exposure assumptions which EPA makes in calculating many of the human health criteria.

7. Adjust the Allowable Frequency of Excursions. Allow an excursion every 6 months to one year, rather than once every three years. Perhaps this could be supported by EDW-specific information concerning ecosystem recovery from excursions.

8. Apply Drinking Water and Fish Consumption Objectives Separately. Where both drinking water and fish consumption are designated uses, develop new objectives which address these uses separately rather than developing an objective based on a combination of exposure routes.

Where drinking water is a designated use, but fish consumption is not, apply only drinking water objectives. Where fish consumption is a designated use, but drinking water is not, apply only the fish consumption objectives.

9. Adjust Cancer Risk Levels. For carcinogens, base objectives on a cancer risk level of 10^{-5} or 10^{-4} .

10. Change Application of State Policies Which Drive Uses and Objectives. Some objectives are driven partly by state policy prescriptions (e.g., Drinking Water Policy, which drives designation of potential MUN uses).

11. Use Dissolved Metals In Lieu of Total Recoverable Metals. Develop new metals objectives based solely on the dissolved metals fraction rather than total recoverable metals.

3.3 IMPLEMENTATION

3.3.1 BACKGROUND

California has two separate levels of decision-making in water quality, which are described in the Porter-Cologne Act. The SWRCB acts on a statewide level, and nine Regional Water Quality Control Boards (RWQCBs) act on a regional "watershed" level. Therefore, the actions desired by the task force could take place in a variety of scenarios.

Table 3-1 describes the alternative regulatory pathways that were considered by the Task Force. In general, these fall into three categories: state level implementation, regional level implementation, or combinations of the two levels.

3.3.2 RECOMMENDATION

The Task Force evaluated several process options ranging from addressing effluent-dependent water body needs entirely in Statewide Plans to addressing these needs primarily in Basin Plans. To the extent feasible, effluent-dependent water body needs should be addressed primarily in statewide plans. The Task Force recognizes that some effluent-dependent water body needs will be addressed at the RWQCB level.

3.3.3 OPTIONS

Due to time constraints, the Task Force was unable to fully consider the many detailed issues that will have to be addressed by the SWRCB in developing its approach to effluent-dependent water bodies. However, some options to address the various elements of the implementation process, followed by explanatory notes, are described below.

IMPLEMENTATION PROCESS OPTIONS

STEP 1:

Recognize and define effluent-dependent water body types.

Implementation process:

SWRCB recognizes and defines effluent-dependent water body types in the Inland Surface Waters Plan and Enclosed Bays and Estuaries Plan (ISWP/EBEP).

ALTERNATIVE REGULATORY PATHWAYS
FOR EFFLUENT DEPENDENT WATERS (EDWs)

#	DESCRIPTION	STATE PLANS	BASIN PLANS
1	EDW-SPECIFIC WQOs ¹		
1A	Address in State Plans	Define EDWs Identify all EDWs in State Adopt EDW-specific WQOs	No action necessary
1B	Address partially in State Plans and partially in Basin Plans	Define EDWs Adopt EDW-specific WQOs	Identify all EDWs in Basin Adopt EDW-specific WQOs from State Plan for each EDW
1C	Address primarily in Basin Plans	Define EDWs Apply statewide WQOs to all waters (including EDWs)	Identify all EDWs in Basin Adopt EDW-specific WQOs
2	EDW-SPECIFIC USES ²		
2A	Address in State Plans	Define EDWs Define EDW use categories Identify and categorize EDWs by use category Adopt WQOs appropriate for each use category and EDW	No action necessary
2B	Address partially in State Plans and partially in Basin Plans	Define EDWs Define EDW-specific use categories Adopt appropriate WQOs for each use category	Identify and categorize EDWs by use category Adopt EDW-specific WQOs from State Plan for each EDW
2C	Address primarily in Basin Plans	Define EDWs Define process for adopting appropriate WQOs for EDWs	Define EDW-specific use categories Identify and categorize EDWs by use category Adopt appropriate WQOs for each use category and EDW pursuant to Plan process
3	SSO PROCESS	Adopt Existing Uses Describe and adopt SSO process	Where appropriate, adopt SSOs for EDWs pursuant to Plan process
4	UAA PROCESS	Adopt Existing Uses Apply Statewide WQOs to all waters (including EDWs)	Where appropriate, revise uses for EDWs pursuant to EPA process and adopt WQOs pursuant to Plan process

¹There may be different EDW-specific WQOs for different types of EDWs.

²There may be different use categories for different types of EDWs.

STEP 2:

Identify water bodies as effluent-dependent waters.

- 2a) Develop technical criteria for determining qualifications.
- 2b) Designate effluent-dependent water bodies meeting criteria.

Implementation process:

SWRCB develops criteria and adopts in ISWP/EBEP; RWQCB apply criteria and adopt lists of qualifying water bodies in Basin Plans, with appeal to SWRCB.

STEP 3:

Adopt new or modified beneficial uses and subcategories appropriate for effluent-dependent water bodies.

- 3a) Develop list of new or modified beneficial use categories and subcategories appropriate for effluent-dependent water body types in ISWP/EBEP.
- 3b) Decide which uses are generally appropriate for effluent-dependent water body types.

Implementation process:

SWRCB adopts new/modified use categories and subcategories and indicates which uses are generally appropriate for effluent-dependent water body types.

STEP 4:

Assign new beneficial use categories and subcategories to specific water bodies.

- 4a) Uses identified as appropriate are assigned categorically to waters designated as effluent-dependent water bodies.
- 4b) Current beneficial use designations that are potential (i.e., not attained since 1975) uses are removed (and replaced with new designations) through a categorical statewide Use Attainability Analysis.

Implementation Process:

Both steps could be carried out by the SWRCB or the RWQCBs.

STEP 5:

Develop water quality objectives appropriate for new beneficial use categories and subcategories of effluent-dependent water bodies.

- 5a) Identify scientifically defensible methods acceptable for recalculating water quality objectives.
- 5b) Recalculate water quality objectives that are applicable to new or modified beneficial use categories and subcategories for effluent-dependent water bodies (create matrix).
- 5c) Conduct attainability analysis to determine most stringent reasonably attainable objectives that are scientifically defensible¹ (include final objectives as separate table in ISWP/EBEP).

¹ For a description of a methodology for doing this analysis, see Larry Walker, "A Practical Approach for Assessing Compliance Costs in the Adoption of Water Quality Objectives," August 24, 1995

Implementation process:

SWRCB develops and adopts water quality objectives for effluent-dependent water bodies, by beneficial use.

STEP 6:

Adopt program of implementation

- 6a) Adopt program elements such as a policy for the use of compliance schedules, procedures and assumptions for translating water quality objectives to permit limits, etc. Provisions appropriate for effluent-dependent water bodies should be included where necessary. The Plans should specify the conditions under which exceptions can be made to designations of effluent-dependent water bodies, and for the use of site-specific objectives when the statewide water quality objectives for effluent-dependent waters are inappropriate. These provisions could be included in the Program of Implementation or in other sections of the Plans, as appropriate.

Implementation process:

SWRCB develops and adopts a program of implementation in the ISWP/EBEP.

STEP 7:

Adoption of water quality objectives for specific water bodies.

- 7a) Statewide water quality objectives applicable for effluent-dependent water bodies are applied categorically to the water bodies assigned to these water body types.
- 7b) Site-specific adjustments are made (through mechanisms such as changes in use designations or the development of site-specific water quality objectives) for specific water bodies where the statewide water quality objectives are found to be inappropriate.

Implementation process:

Option 1-- The SWRCB applies the statewide water quality objectives for effluent-dependent waters categorically to all water bodies assigned to effluent-dependent water body types. RWQCBs make site-specific adjustments.

Option 2-- The RWQCBs apply the statewide water quality objectives to specific water bodies, as well as make site-specific adjustments.

STEP 8:

Implementation of water quality objectives in permits.

- 8a) As existing waste discharge requirements are renewed, or new ones are issued, new water quality objectives will be reflected in effluent limitations in the permit.

Implementation process:

RWQCBs are responsible for issuance of waste discharge requirements.

EXPLANATORY NOTES

1. This description of implementation process options does not include all steps of Basin Plan adoption (for example, adoption of statewide water quality objectives into Basin Plans or approval by SWRCB of Basin Plans).
2. Significantly different amounts of time will be necessary for implementation, depending on the allocation of responsibilities between the SWRCB and the RWQCBs. Specifically, a significantly shorter period of time will be required if Steps 2, 4, and 7 are done on a "categorical" basis at the state level, with the Regional Boards reviewing these and acting only on exceptions. However, if these steps must be carried out on a site-specific basis by the RWQCBs, several years will likely be necessary. Likewise, if currently designated uses can be changed using a "categorical" type of Use Attainability Analysis (UAA), the implementation process will be expedited significantly.
3. During Task Force deliberations, it was proposed that the SWRCB and the USEPA explore the possibility of conducting the UAA required to remove beneficial uses or replace current use designations with less protective uses on a "categorical" basis, meaning that the UAA would apply to all water bodies in a particular category. This would generally replace site-specific UAAs, although site-specific UAAs could be required on a case-by-case basis. The Task Force was unable to pursue this topic further, although the group recognized that this is a critical element of the implementation process.
4. (Note -- The Task Force did not discuss the following suggested recommendations) Regardless of whether the SWRCB or RWQCBs conduct particular steps, SWRCB should develop technical evaluation criteria for Steps 2, 4, 5, and 7. Because the Task Force was unable to develop recommendations at this level of detail, the SWRCB should consider convening a technical advisory committee to address these issues.

3.4 POLICY OPTIONS

The task force identified four major policy options and three possible levels of implementation. Most of the task force effort focused on examining the second approach.

3.4.1 APPROACHES

EDW-Specific Water Quality Objectives

This approach would consist of maintaining the present beneficial use designations, but developing statewide water quality objectives up-front for effluent-dependent water bodies (EDWs). The existing Arizona water quality standards were reviewed as an example of this approach. Arizona has numeric objectives for both "effluent-dominated" and "ephemeral" waters, based on an "aquatic and wildlife" beneficial use. The Arizona standards were developed using lists of aquatic species found in such systems within the state. Toxicity test

results for species not found in EDWs were removed from the data set and the objectives recalculated. Arizona also modified the human health objectives by applying drinking water and fish consumption objectives separately, instead of developing new objectives based on the combination of the exposure routes.

Effluent data were obtained for publicly-owned treatment works (POTWs) and for stormwater in California. Constituents likely to exceed USEPA-recommended aquatic life and human health criteria were examined. These were modified according to the Arizona methods. It was seen that there would not be any significant reduction in attainability problems through these methods, particularly for stormwater. New water quality objectives will have to be developed, but there are other available methods.

The needs for developing this approach would be: to define EDWs in the new state plans, to identify all EDWs in the state, and to adopt EDW-specific water quality objectives statewide.

EDW-Specific Uses (Recommended Approach)

This approach consists of a two-step process. The first step is to modify the present designated beneficial uses such that the designated uses more accurately reflect the actual uses. The second step is to adopt water quality objectives appropriate for each use designation. The twenty-three adopted beneficial use categories existing in California were reviewed. Modifications to some of them were proposed, generally making a "1" and "2" type, it being assumed that the "2" would result in somewhat less stringent water quality standards than the "1". Both human health-based and aquatic life-based beneficial uses were studied.

Under this approach, the list of existing and modified beneficial use categories appropriate to EDWs would be presented to the state, along with a description of a process for developing water quality objectives for those uses. It is unclear in federal regulations if a Use Attainability Analysis (UAA) would be required prior to modifying uses.

The needs for developing this approach would be: to define EDWs in the new state plans, to define EDW-specific use categories, to identify and categorize all EDWs by use categories in the state, and to adopt appropriate water quality objectives for EDWs.

SSO Process

Under this approach, the new state water quality plans would not specifically address EDWs. Rather, any attainability problems would be addressed by the Regional Boards through the development of site-specific objectives (SSOs) pursuant to procedures described in the Water Quality Objectives portion of the plans. There was consensus that this was not a desirable approach, because of the resources required to develop SSOs for all EDWs.

UAA Process

Under this approach, the new state water quality plans would not specifically address EDWs. Rather, any attainability problems would be addressed by the Regional Boards through the Use Attainability Analysis (UAA) process described in the federal regulations to be used when a non-existing use for a water body is unattainable. The national goal of "fishable-swimmable," along with the California policy of all surface waters being "drinkable" (potable water supply), may not apply to EDWs. The state may remove a designated use which is not existing, or establish sub-categories of a use through a UAA. This approach would also rely on the USEPA guidance for modifying water quality objectives for EDWs or some similar process adopted by the state.

The UAA process is generally considered to require significant data and be time-consuming. The acceptability of UAAs is another concern. For these reasons, there was consensus that this was not a desirable approach for EDWs.

3.4.2 LEVELS OF IMPLEMENTATION

California has two separate levels of decision-making in water quality unlike other states, due to the Porter-Cologne Act. The State Water Resources Control Board acts on a statewide level, and there are nine Regional Water Quality Control Boards acting on a regional "watershed" level. Therefore, the actions could take place in a variety of scenarios. The task force supports option 2, addressing effluent-dependent water bodies primarily in the state plans and partially in basin plans.

Option 1. Address entirely in state plans.

Option 2. Address primarily in state plans and partially in basin plans.

Option 3. Address primarily in basin plans.

3.5 OTHER ISSUES

3.5.1 PROTECTED SPECIES

The Effluent-Dependent Water Bodies Task Force expressed concern as a group on the lack of involvement of the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) in this new statewide water quality planning effort. There were no representatives from either state or federal fish and wildlife agencies assigned to the task force. The group drafted letters to these agencies (Appendix 3) at the first meeting and, as a result, obtained one representative from the CDFG.

The concern is that the CDFG might hold up the state plan approval process or associated CEQA review by declaring lack of adequate protection of endangered and threatened species.

This happened recently in the triennial reviews of three Southern California Regional Basin Plans. The task force desires much more active and earlier consultation and resolution of issues related to water quality and protected species in the new state planning process, especially in relation to effluent-dependent water bodies.

One means to this was the development of a memorandum of understanding (MOU) between the State Water Resources Control Board and the CDFG that would describe and formalize some of the coordination efforts between these two agencies. A draft MOU was prepared, but not acted on by the task force. This draft MOU is part of the record.

4.0 ISSUES NOT ADDRESSED

At the April 26-27, 1995 Task Force meeting many issues that needed to be addressed were identified. Other issues were identified at subsequent meetings. Although most of the major issues were considered by the Task Force, others were not, either because the issues should have been addressed by other task forces or the Task Force did not have the resources necessary to address the issue to a reasonable extent. The following list of non-addressed issues may be useful for further consideration by the SWRCB.

- How should ephemeral waters be protected?
- At what level of water quality does the ISWP optimize the balance between the cost of producing reclaimed water and the benefits derived from both instream beneficial uses and water supply beneficial uses?
- Who should pay the cost of producing a beneficial use created by an EDW - the public serviced by the POTW, the beneficiaries, or the general public?
- Should the State's Drinking Water Policy be revised to encourage maximum production of reclaimed water or should POTW discharges be required to meet drinking water standards?
- Should the responsibility and cost of receiving water quality monitoring continue to be borne by the segment of the public served by POTWs or should they be assigned to the general public through reasonable budgets to the RWQCBs?
- Should the State's Antidegradation Policy be revised to provide for the protection of beneficial uses of State waters rather than existing water quality in cases where the existing water quality is better than necessary to protect those uses?
- Should the State's Anti-Backsliding Policy be revised to provide incentives for POTWs to reasonably do more than what is minimally needed to meet water quality standards?

- Should the same formal UAA/SSO process be required to add beneficial uses as is required to delete beneficial uses?
- How should stormwater standards be addressed?
- How should agricultural drainage be addressed?
- Should the UAA/SSO process be standardized and delineated in the ISWP?
- How can the ISWP be coordinated with non-point source programs?
- Should habitat maintenance (minimum/maximum flows) be addressed?
- Should multi-media concerns (i.e., transfer or migration of constituents to other media) be addressed?
- How can background concentrations of inorganics be addressed?
- How can the introduction of exotic species, either purposely or inadvertent, be addressed?
- Should incidental groundwater recharge be addressed separately from planned/deliberate groundwater recharge?
- How should the State's water quality research needs be addressed?
- Can the process to delist beneficial uses be standardized and streamlined?
- How should dilution/mixing zones be used to determine permit requirements?
- How can competing public interests be balanced?
- How are water bodies designated as being impaired?
- How can institutional barriers between various water managers (e.g., POTWs and water purveyors) be overcome?
- Can seasonal standards be utilized to define permit limits?
- How do the Task Force recommendations/options comply with existing federal and State laws and regulations?

Appendices

Appendix 1

POTENTIAL RESEARCH PROGRAMS
for the Water Quality Research Project (WQRP)

TABLE I

CHEMICAL CRITERIA AND STANDARDS

No.	Project/Issue/Description	Proposed By
1.	<ul style="list-style-type: none"> • Identify chemicals and compounds of specific concern for arid West agencies and regulators in ephemeral and effluent-dependent ecosystems, including ammonia, arsenic, cadmium, copper, lead, diazaron, zinc, mercury, molybdenum, phthalates, silver. • All the above plus dissolved oxygen. • All the above plus selenium. • Dissolved oxygen. • Develop data on pollutants and places presenting special compliance problems for dischargers (using existing data to the extent clean chemistry requirements are met). 	<ul style="list-style-type: none"> - PCWWM - State Reg - CO - AZ, Phx, TX - Region IX
2.	<ul style="list-style-type: none"> • Develop criteria for species in ephemeral and effluent-dependent streams in the arid West. • Develop criteria for these chemicals not currently included in national criteria documents (especially metals, pesticides and ammonia). 	<ul style="list-style-type: none"> - PCWWM, AZ - CO
3.	<ul style="list-style-type: none"> • Quantify the influence of hardness, alkalinity, and Total Organic Carbon regarding metals toxicity to aquatic and wildlife species in ephemeral and effluent-dependent ecosystems. • Develop protocols for implementing hardness-dependent metals criteria in waters above 400 mg/l CaCO₃. 	<ul style="list-style-type: none"> - PCWWM - Region IX - CO - Riverside - NV, CO, CA - State Reg
4.	<ul style="list-style-type: none"> • Develop laboratory toxicity data for arid West species for use in expanding the national data base to cover currently unrepresented species and to develop site-specific criteria, use designations and toxicity testing protocols. 	<ul style="list-style-type: none"> - Region IX - State Reg
5.	<ul style="list-style-type: none"> • Demonstrate analytical or other rational approach to apply water quality standards to stormwater flows, especially in the arid and semi-arid West. • Develop alternative methods for managing and regulating stormwater discharges which are sensitive to arid Western settings. 	<ul style="list-style-type: none"> - PCWWM, TX - State/Reg - Region IX
6.	<ul style="list-style-type: none"> • Investigate and quantify problems with dechlorination and the effectiveness of specific dechlorination systems to relieve individual agencies of making such determinations at each facility. • Including chlorine residual compliance. 	<ul style="list-style-type: none"> - CO - CA - Riverside
7.	<ul style="list-style-type: none"> • Quantify the fate and effects of nitrogen transformations that occur at the soil/water interface as surface waters percolate into ground waters. 	<ul style="list-style-type: none"> - CO - Riverside
8.	<ul style="list-style-type: none"> • Define the strength of metal-organic ligands that render metals non-bioavailable and define the conditions under which field release of bound metals into a bioavailable form are likely to occur. 	<ul style="list-style-type: none"> - CO
9.	<ul style="list-style-type: none"> • Develop data necessary to assess public health risks due to subsistence fishing in drains and canals. 	<ul style="list-style-type: none"> - Region IX - Phx
10.	<ul style="list-style-type: none"> • Develop protocols for evaluating flows of ephemeral and effluent-dependent streams for TMDL, mixing zone, and effluent limit development purposes. • Site-specific water quality standards for EDWs. • Mixing Zones 	<ul style="list-style-type: none"> - Region IX - CO - CO
11.	<ul style="list-style-type: none"> • Review fish consumption designated use in canals and waters where use does not currently exist. 	<ul style="list-style-type: none"> - CO, SRP - AZ, CO, Phx

POTENTIAL RESEARCH PROGRAMS
for the Water Quality Research Project (WQRP)

TABLE II

ECOLOGICAL CRITERIA AND STANDARDS

No.	Project/Issue/Description	Proposed By
1.	<ul style="list-style-type: none"> • Develop a list of indicator terrestrial and aquatic species in ephemeral and effluent-dependent streams in the arid West not currently included in national criteria documents. • Develop expanded list of species identified in ephemeral streams and EDWs. 	<ul style="list-style-type: none"> - PCWWM - Utah - Region IX
2.	<ul style="list-style-type: none"> • Evaluate food chains representative of important arid West wildlife species, including threatened and endangered (T&E) species. • Endangered Species Act (ESA) - impact on water quality standards: bioaccumulation: manmade systems implementation 	<ul style="list-style-type: none"> - Region IX - Phx. CO - CO, CA - Riverside
3.	<ul style="list-style-type: none"> • Investigate the net ecological benefit of reuse and recharge programs in ephemeral and effluent-dependent streams in the arid West. 	<ul style="list-style-type: none"> - PCWWM - Region IX
4.	<ul style="list-style-type: none"> • Develop measurable decision criteria for use attainability questions in ephemeral and effluent-dependent ecosystems: what level of use is attainable, what conditions fully protect a use, what data are needed to set site-specific criteria, etc. 	<ul style="list-style-type: none"> - PCWWM - CO
5.	<ul style="list-style-type: none"> • Investigate the issues involved in applying the biological integrity concept to ephemeral and effluent-dependent ecosystems of the arid West. 	<ul style="list-style-type: none"> - PCWWM
6.	<ul style="list-style-type: none"> • Protection of habitats uses through minimum discharge requirements. 	<ul style="list-style-type: none"> - Phx
7.	<ul style="list-style-type: none"> • Investigate the toxicity of metals and ammonia to salt-tolerant plant species important in arid West ecosystems. 	<ul style="list-style-type: none"> - PCWWM - CO
8.	<ul style="list-style-type: none"> • Develop an "Effluent-Created Ecosystem" use definition for ephemeral and effluent-dependent ecosystems in terms of the physical, biological, and chemical characteristics found in these environments in the arid West. • Develop protocols for developing criteria appropriate for ephemeral and effluent-dependent waters (EDWs). • Develop arid West-sensitive protocols for evaluating economic impacts of standards implementation for use in use attainability analyses. 	<ul style="list-style-type: none"> - PCWWM - CO - Region IX - Region IX
9.	<ul style="list-style-type: none"> • Review reuse criteria and standards for arid West ecosystems. • Develop data necessary to promote beneficial reuse of treated wastewater to protect and enhance aquatic ecosystems (e.g., to develop protocols for evaluating "net environmental benefits"). • Review effluent reuse, water rights/ownership issues. • Determine best use of effluent as a water resource. 	<ul style="list-style-type: none"> - PCWWM - Region IX - CA - Riverside - PCWWM
10.	<ul style="list-style-type: none"> • Analyze impact of tribal water quality standards. 	<ul style="list-style-type: none"> - Phx
11.	<ul style="list-style-type: none"> • Evaluate tissue concentrations in aquatic life and wildlife for mercury, selenium and other bioaccumulative pollutants. 	<ul style="list-style-type: none"> - Region IX
12.	<ul style="list-style-type: none"> • Review toxics standards guidelines - numeric/narrative including effluent toxicity guidelines 	<ul style="list-style-type: none"> - CO, NV, AZ
13.	<ul style="list-style-type: none"> • Develop data on actual biological systems needed to assess the feasibility of developing wildlife criteria, and to develop wildlife criteria (e.g., mercury). 	<ul style="list-style-type: none"> - Region IX - Riverside

POTENTIAL RESEARCH PROGRAMS
for the Water Quality Research Project (WQRP)

TABLE III

WHOLE EFFLUENT TOXICITY (WET) TESTING

No.	Project/Issue/Description	Proposed By
1.	<ul style="list-style-type: none"> • T&E Species: <ul style="list-style-type: none"> - Develop evaluations of whole effluent toxicity as it relates to T&E species. - Modify protocols for biomonitoring testing to allow ceriodaphns/fatheads to be more tolerant of arid Western waters. - WET testing - Endangered Species Act 	<ul style="list-style-type: none"> - Region IX, TX - Utah - TX
2.	<ul style="list-style-type: none"> • Support studies to determine the Method Detection Level (MDL). • Support studies to determine the Practical Quantification Level (PQL). • Determine WET testing variability compliance. 	<ul style="list-style-type: none"> - PCWWM - PCWWM - Riverside
3.	<ul style="list-style-type: none"> • Investigate the relationship between ammonia toxicity, Ph and temperature. 	<ul style="list-style-type: none"> - PCWWM
4.	<ul style="list-style-type: none"> • Determine appropriate use of biomonitoring and WET testing in ephemeral and effluent-dependent ecosystems. 	<ul style="list-style-type: none"> - PCWWM, AZ - AZ

IMMEDIATE RESEARCH

Tables I-III present a preliminary menu of possible research topics for the WQRP. The specific individual research programs of the Project cannot be specified until the Working Group is established. One of the key concepts of the Project is the creation of the Working Group as a vehicle to maximize the participation by all the stakeholders in identifying and prioritizing the critical water quality issues of the arid West. There will be no problem finding enough for this Project to do; rather, the difficulty will be in prioritizing and allocating limited funds among the critical issues identified.

When Pima County and Region IX staff met in late November, 1994, to discuss the grant application process and requirements, all present agreed that some initial research and policy work should begin immediately upon award of the grant in order to provide some significant results and baseline information for use by participants early in the Project schedule. Pima County and Region IX staff compared their initial concepts for potential WQRP research at this meeting and found many identical and overlapping research priorities. An informal "short list" of critical arid West research needs was developed at this meeting based on those priorities. As part of the planning process for the grant structure and content, Pima County staff and consultants reviewed the "short list" to recommend the two or three top priorities. The short list, and a more detailed description of tasks and issues for each of the short list projects developed in this review by Pima County can be found in Appendix 1.

Three projects from the short list have been identified for immediate implementation. A major rationale for selection of these projects was that the immediate implementation of these projects would expedite the effort of the Project staff and advisory groups by providing essential resource material early in the Project life. These projects would be implemented by Pima County as soon as the grant is awarded.

Appendix 2

(Appendix 2 was removed at the October 24, 1995 "All Task Forces" meeting. Please see the Addendum for clarification.)

STATE OF CALIFORNIA - CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

STATE WATER RESOURCES CONTROL BOARD

PAUL R. BONDERSON BUILDING
901 P STREET
P.O. BOX 100
SACRAMENTO, CALIFORNIA 95812-0100
916/657-2188
FAX 657-2388

**APR 27 1995**

Mr. John Turner, Chief
Environmental Services Branch
Department of Fish and Game
1216 Ninth Street, Room 1341
Sacramento, CA 95814

Dear Mr. Turner:

**DEPARTMENT OF FISH AND GAME PARTICIPATION ON THE STATE WATER
RESOURCES CONTROL BOARD PUBLIC ADVISORY TASK FORCE ON EFFLUENT
DEPENDENT ECOSYSTEMS**

As you know, the State Water Resources Control Board (SWRCB) has initiated the process of developing a new Inland Surface Waters Plan (ISWP) and Enclosed Bays and Estuaries Plan (EBEP). The initial step in this process involves establishing eight public advisory task forces to develop recommendations for SWRCB staff regarding key issues related to developing the new plans. These task forces have been formed and are now completing the initial round of meetings. The Department of Fish and Game (DFG) has previously agreed to participate on all of these task forces except Effluent Dependent Ecosystems.

The Effluent Dependent Ecosystems task force met for the first day of its initial two-day session on April 26, 1995. A topic of great concern to task force participants which was discussed at length the first day is the lack of participation on this task force by the DFG. The group was particularly concerned about the lack of DFG involvement because: (1) DFG plays a key role in implementing the California Endangered Species Act (CESA) and CESA issues will be relevant to the task force discussions, and (2) DFG strongly opposed designation of Category (a) water bodies by the Los Angeles Regional Water Quality Control Board under the old ISWP, and (3) DFG is a recognized source of biological expertise which our task force needs. The task force members are of the opinion that DFG involvement with this task force is critical at this early stage in the process of developing the new ISWP/EBEP and will be much more productive than later in the public participation phase when task force recommendations have been formulated.

The undersigned task force participants request that DFG assign staff to fully participate in the Effluent Dependent Ecosystems task force.

Should you have any questions regarding the task force's concerns on this issue, we invite you to attend the next task force meeting which is scheduled for May 18, 1995. However,

Mr. John Turner

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we hope you will find it possible to have a staff person designated as the DFG representative ready to attend that meeting. The facilitator for this task force is Nancy Reichard and she can be reached at 707/822-5965. You may also call Jesse Diaz, Chief of the Division of Water Quality at 916/657-0756 or Dr. David C. Carlson, Chief of the Freshwater Standard Unit at 916/657-2188.

Sincerely,

Sam Furita
Los Angeles City Public Works Dept.

Bill Peroto for
Gary Hildebrand
Los Angeles County Public Works Dept.

David Phillips
David L. Phillips
University of California at Davis

Mary Ellen Harris
Mary Allen Harris
Eastern Municipal Water District

Dorothy Green
Dorothy Green
Heal the Bay

Robert H. Hultquist
Robert H. Hultquist
Department of Health Services

Terry Oda
Terry Oda
USEPA, Region 9

Greig Peters
Greig Peters
RWQCB - San Diego

David C. Carlson
David C. Carlson
SWRCB

Randall Orton
Randall Orton
Las Virgenes Municipal Water District

David B. Talcott
David B. Talcott
Los Angeles Dept. of Stormwater Management

Robert Robinson
Coachella Valley Water District

Daniel Diehr
Daniel Diehr
San Diego County Water Authority

John Sanford
Environmental Alliance

Maria Rea David Smith
Maria Rea David Smith
USEPA, Region 9

Brad Hagemann
RWQCB - Central Coast

Syed Khasimuddin
Syed Khasimuddin
SWRCB

cc: Mr. Boyd Gibbons, Director
Department of Fish and Game



STATE WATER RESOURCES CONTROL BOARD

PAUL R. BONDERSON BUILDING
901 P STREET
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APR 27 1995

Mr. Steve Schwarzbach
Assistant Field Supervisor
U.S. Fish and Wildlife Service
2800 Cottage Way, E-1803
Sacramento, CA 95825

Dear Mr. Schwarzbach:

U.S. FISH AND WILDLIFE SERVICE PARTICIPATION ON THE STATE WATER RESOURCES CONTROL BOARD PUBLIC ADVISORY TASK FORCE ON EFFLUENT DEPENDENT ECOSYSTEMS

As you know, the State Water Resources Control Board (SWRCB) has initiated the process of developing a new Inland Surface Waters Plan (ISWP) and Enclosed Bays and Estuaries Plan (EBEP). The initial step in this process involves establishing eight public advisory task forces to develop recommendations for SWRCB staff regarding key issues related to developing the new plans. These task forces have been formed and are now completing the initial round of meetings. The U.S. Fish and Wildlife Service (USFWS) has previously agreed to participate on the Chemical Specific Objectives task force.

The Effluent Dependent Ecosystems task force met for the first day of its initial two-day session on April 26, 1995. A topic of great concern to task force participants which was discussed at length the first day is the lack of participation on this task force by the USFWS. The group was particularly concerned about the lack of USFWS involvement because: (1) USFWS plays a key role in implementing the Federal Endangered Species Act (ESA) and ESA issues will be relevant to the task force discussions, and (2) USFWS is a recognized source of biological expertise which our task force needs. The task force members are of the opinion that USFWS involvement with this task force is critical at this early stage in the process of developing the new ISWP/EBEP and will be much more productive than later in the public participation phase when task force recommendations have been formulated.

The undersigned task force participants request that USFWS assign staff to fully participate in the Effluent Dependent Ecosystems task force.

Should you have any questions regarding the task force's concerns on this issue, we invite you to attend the next task force meeting which is scheduled for May 18, 1995. However, we hope you will find it possible to have a staff person designated as the USFWS

Mr. Steve Schwarzbach

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representative ready to attend that meeting. The facilitator for this task force is Nancy Reichard and she can be reached at 707/822-5965. You may also call Jesse Diaz, Chief of the Division of Water Quality at 916/657-0756 or Dr. David C. Carlson, Chief of the Freshwater Standard Unit at 916/657-2188.

Sincerely,

Sam Furita
Los Angeles City Public Works Dept.

Bill DeRoto for
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Mary Allen Harris
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Los Angeles Dept. of Stormwater Management

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Daniel Diehr
San Diego County Water Authority

John Sanford
Environmental Alliance

Maria Rea *David Smith* *Nan Smith*
USEPA, Region 9

Brad Hagemann
RWQCB - Central Coast

Syed Khasimuddin
Syed Khasimuddin
SWRCB

cc: Joe Medlin, Field Supervisor
U.S. Fish and Wildlife Service