

## REVISED DRAFT OUTLINE

May 10, 1996

### Ecosystem Restoration Strategy of the CALFED Bay-Delta Program

#### INTRODUCTION

This outline presents the CALFED vision and strategy for restoring a healthy Bay-Delta system by restoring ecosystem elements (habitats and plant and animal populations and communities) and natural processes (functions) that support the elements. [SEE: Item #1 on next page] A healthy ecosystem is one that exhibits a natural array, quantity, and quality of habitats and associated populations and communities of desirable species of plants and animals. A healthy ecosystem also has natural processes that meet the basic needs of the desirable plants and animals.

#### Need for an Ecosystem Restoration Strategy

The CALFED Bay-Delta Program needs ~~an agreed-upon and articulated Ecosystem Restoration Strategy (strategy) to provide an overall plan and direction toward the development of~~ **to develop** an ecosystem restoration program. In addition **it must be promoted to the public** ~~an articulated strategy is needed to obtain understanding and support from all stakeholders for a restoration program.~~

#### Purpose of this Document

This strategy document ~~is designed to~~ achieves the following three purposes:

- ~~to~~ describes CALFED's vision of a restored ecosystem and strategy to restore the ecosystem;
- ~~to~~ demonstrates that the strategy is based on an ecosystem approach **with and adaptive management** [Does this provide water supply reliability]; and
- ~~to~~ builds understanding and support from interested stakeholders and the public for **the strategy implementing and funding the restoration necessary.**

#### PROBLEMS

The Bay-Delta and its watersheds ~~are not healthy ecosystems~~ **have problems.** The overall health and functioning of the Bay-Delta ecosystem [SEE: Item #2 on next page] has declined because of degraded habitat, impaired ecological function, introduced exotic species, pesticides and reductions in population abundance of individual species. Important habitats of many native plants and animals are in short supply and remnant natural habitats are threatened with further loss or degradation. Populations of many native plants and animals have declined to very low levels from loss of habitat,

**Item #1:** This is correct and it is nice to say what a so-called healthy ecosystem would be. However, this does not describe the Delta ecosystem we have today, nor does it describe the major problems with it (water diversion, water temperature, predation, non-native pests, exceptionally high use, poor levee maintenance, screening problems, recreational catch rate problems, CVPIA mandates to double non-native species (American Shad and Striped Bass), boat-caused erosion, siltation and ocean catch rates.

All preclude a natural and healthy ecosystem and need to be outlined in the introduction.

**Item #2:** This is not accurate and it (the problem) is many faceted and exceptionally complex.

direct losses to water diversions, poor water quality, poor nutrient supply [questionable?], competition and predation by non-native species, ~~and from direct over~~ harvest by people, **urban and rural pollutants, and recreation boating.**

CALFED has documented the problems in previous workshop information packages and in its 'Problem/Objective Definition' paper dated March 1996.

## MISSION

The mission of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecological **health processes** and improve water management for beneficial uses of the Bay-Delta system. [The charge is to **BALANCE** competing resources. To slant this will result in lawsuits and no improvement.]

## ECOSYSTEM QUALITY OBJECTIVES

The CALFED Bay-Delta Program has developed an extensive set of ecosystem quality objectives. These are reproduced in the Problem/Objective Definition Report dated March 1996. The primary ecosystem quality objective and the first two levels of subobjectives are listed below:

Improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species. [not possible without stopping the excessive ocean catch!]

- A. **Improve and Increase Aquatic Habitats** so that they can support the sustainable production and survival of native and other desirable estuarine [including Striped Bass and American Shad?? **(NO)**] and anadromous fish in the estuary. [You cannot allow increased harvest on the one hand and require sustainable population increases on the other hand.]
1. **Increase Amount of High Quality Shallow Riverine Habitat** ~~to allow sustainable fish spawning and early rearing.~~
  2. **Increase Amount of High Quality Shaded Riverine Habitat** ~~to allow the growth and survival of sustainable populations of estuarine resident and anadromous fish in the estuary.~~
  3. **Increase Amount of Quality Tidal Slough Habitat** ~~containing emergent and submerged vegetation to support the fish production capacity of the Delta.~~
  4. **Increase Amount of High Quality Estuary Entrapment/Null Zone Habitat** ~~to support sustainable fish populations in the Bay-Delta system.~~
  5. **Provide Sufficient Transport Flows** ~~at the proper times to move eggs, larvae, and juvenile fish from spawning habitats to nursery habitats in the Delta and Bay.~~

6. **Reestablish Appropriate upstream and downstream movement of native anadromous and estuarine fish.**
7. **Improve the Productivity of the Bay-Delta Aquatic Habitat Food-Web to support sustainable populations of desirable fish (and other) species.**
8. **Reduce Concentrations of Toxic Constituents and Their Bioaccumulation to eliminate their adverse effects on populations of fish and wildlife species.**

**B. Improve and Increase Important Wetland Habitats so that they can to support the sustainable production and survival of wildlife species. [No need to have this comment!]**

1. **Increase the Amount of High Quality Brackish Tidal Marsh Habitat in the Bay-Delta system to better support sustainable populations of native wildlife species.**
2. **Increase the Amount of High Quality Freshwater Marsh Habitat to better support sustainable populations of native wildlife species in the Delta.**
3. **Increase the Amount of High Quality Riparian Woodland Habitat in the Delta to better support sustainable populations of native wildlife populations.**
4. **Increase the Amount of Breeding Waterfowl Habitat to better support sustainable populations of dabbling ducks.**
5. **Increase the Amount of Wintering Wildlife Habitat for foraging and resting to better support sustainable populations of wintering waterfowl.**
6. **Increase the amount of Managed Permanent Pasture Habitat for better support wintering crane populations.**
7. **Increase Flood Plains and Associated Riparian Habitat to improve diversity and sizes of fish and wildlife populations.**

**C. Increase population health and population size of Delta species to levels that assure sustained survival. [OK, only if it excludes non-native species and excess ocean harvest is eliminated. Different goal than CVPIA?]**

1. **Contribute to the recovery of threatened, endangered or species of special concern. [OK, only if it excludes non-native species and excess ocean harvest is eliminated.]**
2. **Increase populations of economically important species. [not including American Shad and Striped Bass]**
3. **Increase populations of prey or food species. [only through habitat restoration, i.e., no introductions]**