1, Table 2) may only reflect good growth conditions during 1996 (Note that fish <200 mm were only included in the aged sample in 1997, which is not directly comparable to the 1980s sample containing age-1 fish from four different years). Although older fish tend to be larger in the 1990s than in the 1980s, this difference was only significant at age 7 (Table 2).

Lower angler mortality rates may allow the present mixed strain largemouth bass to grow larger that the earlier northern-strain bass. Harvest rate of Florida-strain fish may be lower than for northern-strain bass because Florida-strain fish are less vulnerable to angling (Chew 1975). Harvest mortality rates of largemouth bass in the delta may also have decreased as the result of a movement towards a catch and release sport fishery. In the late 1980s, letters accompanying tag returns from delta largemouth bass occasionally mentioned that the tagged fish had been released after capture. This is more commonly reported now. As a result, a request for status of tagged fish (harvested or released) is included on postcards sent to anglers who return tag information. Data providing insight into these and other changes in mortality rates of largemouth bass in the delta is being accumulated and analyzed and will be reported in the future.

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CALFED Comprehensive Monitoring, Assessment, and Research Program

Randall L. Brown, DWR

On May 1, 1998, the CALFED Policy Group approved a $1.8 million proposal by the IEP, San Francisco Estuary Institute, and the U.S. Geological Survey to develop a comprehensive monitoring, assessment, and research program (CMARP) for CALFED. The program will be keyed to the CALFED implementation program, the six common program elements, mitigation, Category III monitoring, and will be a key part of the CALFED adaptive management strategy. The proposed program, including monitoring details (parameters, location, frequency, etc.) data management, decision support, and research, is due to CALFED in January 1999.

Since approved, CMARP has established an agency/stakeholder steering committee consisting of:

Margaret Johnston (SFEI - Co-chair)
Larry Smith (USGS – Co-chair)
Randy Brown (DWR – Co-chair)
Serge Birk (CVP Water Association)
Pete Rhoads (MWD)
Larry Brown (USBR)
Bruce Herbold (EPA)
Peter Stine (USGS)
Elise Holland (Bay Institute)
Fred Nichols (USGS)
Perry Herrgesell (DFG)
Tom Grovhoug (Sacramento Watershed)
Marty Kjelson (USFWS)
Bellory Fong (CALFED)
Laura King (Westlands WD)

CMARP also has designated Leo Winternitz (DWR) as Program Manager/Chief of Staff and identified agency staff to help carry out the work.

The CMARP effort is broken down into a series of five tasks, with Task 3 having several subtasks. The tasks are:

1.Refine Goals, Objectives, and Needs

2.Develop Conceptual Framework

3.Monitoring Program Design

4.Focused Research Program Design

5.Develop Institutional Structure

One of the first concrete steps in Task 2 was to convene a one and one-half day workshop to discuss the role of conceptual models in designing monitoring/research programs. The workshop was held on June 17 with about 40 attendees, including three invited speakers discussing similar programs outside California—Puget Sound, Chesapeake Bay, and South Florida. A draft workshop summary is being reviewed by the speakers and should be available for distribution by the end of July. Contact Leo Winternitz (lwintern@water.ca.gov) if you would like a copy.

Some general workshop conclusions are:

- Conceptual models have played key roles in monitoring research and restoration program development in Puget Sound, Chesapeake Bay, and South Florida, and have an important role in the Bay Delta.
- Conceptual models:
  - ➛are a representation of what we think we know and don't know, and are generally wrong because we don't know enough;
  - ➛are dynamic and evolve with increased understanding;
  - ➛take different forms, depending on the modeler, the purpose and the audience.
- The process of thinking through the model and discussing the model with peers is more important than the model itself.
- CALFED and local, state, and federal agencies are presently not making good use of explicit conceptual models in developing monitoring/restoration programs, adaptive management or communications with other scientists, managers, and the public.