The Scientific and Statistical Committee (SSC) was briefed by Dr. John Field regarding the Ecosystem Plan Development Team’s (EPDT) “Discussion Document: Assessing Ecosystem Policy Principles and Bringing Ecosystem Science into the Pacific Fishery Management Council Process” (Agenda Item J.1.c, Attachment 1). The SSC commends the EPDT for its thorough documentation of ecosystem-based management measures and research needs associated with each of the Council’s four fishery management plans (FMPs), and for considering needs and challenges common to all FMPs and cross-FMP effects.

Section 4 of the discussion document includes a lengthy list of ecosystem science topics relevant to each FMP, as well as topics common across FMPs. It would be helpful if these topics were categorized according to whether they can be addressed in the short term or will require intermediate to long-term research to accomplish.

The SSC notes the following regarding ecosystem-based management:

- Procedures need to be established to identify the types of ecosystem information relevant to Council deliberations and when and how such information should be used in the Council process.

- Building upon existing population models already used by the Council is a constructive and practical way to make progress on incorporating ecosystem considerations into management.

- Incorporation of ecosystem considerations into stock assessments should be considered judiciously. While ecosystem data may be informative, integration of such data directly into assessments also introduces additional sources of uncertainty. Ecosystem data should be considered in terms of whether they provide practical benefits such as improving forecasts. Complexity for its own sake does not generally lead to better assessments or better management.

- Incorporation of ecosystem considerations into management is not limited to quantitative models. Information on biophysical variables, predator/prey relationships and the like may provide insights into stock assessment results or potential risks associated with management decisions.

- Some ecosystem variables may not be immediately relevant to management but may provide longer-term insights into the effects of dynamic factors such as climate change on Council-managed species. Processes for identifying and monitoring such information and tracking related research – perhaps as part of the California Current Integrated Ecosystem Assessment (CCIEA) – need to be developed.
• While stock assessment models currently used by the Council will continue to be relevant as the Council moves toward ecosystem-based management, additional tools (e.g., Atlantis, CCIEA) will also need to be evaluated. Atlantis is a complex model that includes many different modules (e.g., species interactions, stock assessment, fleet dynamics). Reviewing models such as Atlantis will require an interdisciplinary team of reviewers, adequate model documentation, and considerable review time. Procedures for reviewing such models need to be established.

• Socioeconomic factors are an important consideration in ecosystem-based management. For instance, the EPDT notes that FMP fisheries can have cumulative effects that are reflected in spatial and temporal patterns of fishing behavior, effort shifts among fisheries, and the viability and resilience of coastal communities. The SSC notes that community ‘viability’ and ‘resilience’ are often cited but ill defined concepts. It is important that socioeconomic changes be captured in a broad range of indicators that are measurable.

Orderly processes need to be established for identifying and incorporating relevant ecosystem considerations into management. The SSC proposes a two-day meeting of its Ecosystem-Based Management Subcommittee in mid-April to help address this need, as follows:

• The Subcommittee will draft terms of reference for identifying ecosystem information relevant to stock assessments and incorporating ecosystem considerations into assessments. Among other things, this will help bring clarity to what would be needed to meet the EPDT’s proposed schedule for “bringing ecosystem considerations into stock assessment and harvest-setting processes” (Agenda Item J.1.c, Attachment 1, EPDT Discussion Document, Table 4.1).

• The Council has a longstanding practice of reviewing new models before they are considered for use in management. The Subcommittee will examine current terms of reference for methodology reviews to determine their applicability to review of ecosystem tools that are new to the Council, such as Atlantis.

• Information sources such as the CCIEA provide extensive technical information regarding the California Current Ecosystem. The Subcommittee will discuss the CCIEA in terms of its content and how that content can be organized in ways that enhance its utility to the Council. This is intended to complement efforts initiated by the EPDT to “work with the Science Centers to select a pilot set of species, spread among the four FMPs and of potential interest to the Council” (Agenda Item J.1.c, Attachment 1, EPDT Discussion Document, p. 17).