Part 1, "Marine Populations: The Basics," covers topics that set the stage for the rest of the book. Stephen Palumbi and Dennis Hedgecock note that high fecundity and wide larval dispersal have implications for the design of marine reserves, and also for the probability and speed of recovery after population reductions. Don Levitan and Tamara McGovern review the Allee effect in the sea, the tipping point that makes recovery from small population sizes especially difficult. Ransom Myers and Andrea Ottensmeyer discuss extinction risk. Because species in the sea are harder to observe and monitor, it is likely that many marine species extinctions are unrecorded "silent extinctions." Julia Parrish illustrates how knowledge of behavior can contribute to effective conservation actions. This introductory section could have been strengthened by a chapter on changes in the sea from a long-term perspective. Marine conservation efforts are handicapped by the difficulty of conceiving what pristine ecosystems really were like. Worse, each generation of marine biologists takes an increasingly degraded state as the goal for restoration (the "sliding baselines" syndrome).

Part 2 is entitled "Threats to Marine Biological Diversity." The editors introduce this section by listing five main threats to marine diversity: overexploitation, physical alteration, pollution, alien species, and climate change. Overexploitation, physical alteration, pollution, alien species, and climate change. Pollution and alien species are covered in chapters by Nancy Rabalais (nutrient overenrichment), James Carlton and Gregory Ruiz (invasions), Kiho Kim and colleagues (diseases), and Denise Breitburg and Gerhardt Riedel (multiple stressors). Overexploitation and physical alteration are covered in part 3. Curiously, however, there is no chapter on the fifth threat, climate change. Global warming is mentioned only briefly as an extinction threat, mainly in relation to coral reef bleaching.

In part 3, "The Greatest Threat: Fisheries," we get to the heart of the matter. The problem is not simply that we catch too many fish. Richard Law and Kevin Stokes document how fishing alters the size, age, and genetic structure of exploited populations, usually selecting for greater rates of reproduction at the expense of growth and survival. Les Watling compares bottom trawling to forest clear-cutting and oil exploration: Although the destructive effects of trawling are often more widespread and longer lasting, the general public is far less aware of them. Fisheries also catch animals that are not the target of the fishery (bycatch). This incidental catch is often the main threat to long-lived marine animals such as turtles, seabirds, dolphins, and whales. Selina Heppell and colleagues discuss how the life histories of long-lived species, including targeted species such as sharks, make them highly vulnerable to the effects of fishing.

The title of the chapter by Dave Preikshot and Daniel Pauly poses the central question: "Global Fisheries and Marine Conservation: Is Coexistence Possible?" They contend that fisheries management fails to meet broader conservation goals because of two "pathologies": a focus on single species instead of whole ecosystems, and the traditional view that the fishing industry is the sole legitimate user, in effect the owner, of marine living resources. The final chapter of part 3 seems to illustrate the point. Ray Hilborn refers to unharvested fish as "surplus," is sanguine about ecosystem changes as a result of fishing, and defends the single-stock approach to fisheries management. As I read the chapter, the core philosophical issue became clear. By current standards, well-managed fisheries, such as the ones Hilborn describes, reduce the target species (often a top predator) to about 30 percent of its natural (unfished) abundance. The target species is in no danger of extinction, and let us assume that bycatch of other species is not an issue. Under these conditions, is the 70 percent reduction of a top predator acceptable? If not, what level is compatible?