Passive and active acoustic methods provide a means to systematically observe marine biota from krill to whales at local and ocean basin scales. These acoustic methods are an important part of the Australian integrated marine observing system (IMOS) providing a link between ocean physics and the structure and function of ecosystems. These methods complement primary production measurements using ocean colour, continuous plankton recorders and fish tracking. Within IMOS passive acoustic devices detect and track a range of fauna from fish to whales. The vocalisations of several great whale species allow long term tracking of trends in their numbers and their seasonal presence. Many fish vocalise routinely and regularly, producing choruses which are monitored. In oceanic, near shelf waters these fish choruses reflect movements, the spatial distribution and density of large numbers of fish which appear affiliated with the deep scattering layer. Seasonal and spatial variations in these fish choruses may link directly to secondary productivity. Active acoustics is being used to monitor ocean basin scale secondary productivity. These basin scale measurements are being used to initialise and assimilate with ecosystem models to map the biomass and distribution of organisms from krill to small fish. Both single and multi-frequency acoustic methods are being used to determine acoustic species groups and biomass. In the context of climate change and variability this monitoring is being designed to detect decadal signals at basin scales. Current methods are using well established technologies and methods but several new developments may be part of future observing systems.