Fig. 1.1  Map showing the sampling stations (1, 2, 3 and 4) from the coastal waters off Cochin, south west coast of India. 06

Fig. 2.1  Monthly averaged wind vectors along the west coast of India during monsoon season (June 2000 – September 2000). 17

Fig. 2.2  Monthly averaged wind vectors along the west coast of India during postmonsoon season (October 2000 – January 2001). 18

Fig. 2.3  Monthly averaged wind vectors along the west coast of India during premonsoon season (February 2001 – May 2001). 19

Fig. 2.4  Monthly averaged wind vectors along the west coast of India during monsoon season (June 2001 – September 2001). 20

Fig. 2.5  Monthly averaged wind vectors along the west coast of India during postmonsoon season (October 2001 – January 2002). 21

Fig. 2.6  Monthly averaged wind vectors along the west coast of India during premonsoon season (February 2002 – May 2002). 22

Fig. 2.7  Monthly total rainfall (mm) recorded at Cochin during 2000 – 2002. 24

Fig. 2.8  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of sea water temperature (°C) at different stations covering surface, mid depth and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000. 30

Fig. 2.9  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of sea water temperature (°C) at different stations covering surface, mid depth and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001. 31

Fig. 2.10  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of sea water temperature (°C) at different stations covering surface, mid depth and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively. 32

Fig. 2.10.1 Temperature profile of the postmonsoon periods during (a) 2000 and (b) 2001 off Cochin. 33

Fig. 2.11  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of density (σ t) at different stations covering surface, mid depth and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000. 39

Fig. 2.12  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of density (σ t) at different stations covering surface, mid depth and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001. 40
Fig. 2.13 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of density ($\sigma_t$) at different stations covering surface, mid depth and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively.

Fig. 2.14 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of vertical stability at different stations covering surface and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000.

Fig. 2.15 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of vertical stability at different stations covering surface and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001.

Fig. 2.16 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of vertical stability at different stations covering surface and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively.

Fig. 2.17 Monthly mean sea level (mm) off Cochin during 2000-2002.

Fig. 3.1 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of salinity (ppt) at different stations covering surface, mid depth and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000.

Fig. 3.2 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of salinity (ppt) at different stations covering surface, mid depth and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001.

Fig. 3.3 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of salinity (ppt) at different stations covering surface, mid depth and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively.

Fig. 3.4 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of dissolved oxygen (ml/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000.

Fig. 3.5 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of dissolved oxygen (ml/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001.

Fig. 3.6 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of dissolved oxygen (ml/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively.
Fig. 3.7  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of phosphate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000. 83

Fig. 3.8  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of phosphate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001. 84

Fig. 3.9  Box and whisker plot showing median, lower and upper quartile and lowest and highest values of phosphate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively. 85

Fig. 3.10 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of nitrate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000. 91

Fig. 3.11 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of nitrate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001. 92

Fig. 3.12 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of nitrate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively. 93

Fig. 3.13 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of silicate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000. 99

Fig. 3.14 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of silicate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001. 100

Fig. 3.15 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of silicate (µM/l) at different stations covering surface, mid depth and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively. 101

Fig. 3.16 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of chlorophyll a (mg/m³) at different stations covering surface and bottom waters off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000. 106
Fig. 3.17 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of chlorophyll a (mg/m³) at different stations covering surface and bottom waters off Cochin during (a) premonsoon and (b) monsoon seasons in 2001.

Fig. 3.18 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of chlorophyll a (mg/m³) at different stations covering surface and bottom waters off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively.

Fig. 3.19 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of zooplankton biomass (ml/100m³) at different stations off Cochin during (a) monsoon and (b) postmonsoon seasons in 2000.

Fig. 3.20 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of zooplankton biomass (ml/100m³) at different stations off Cochin during (a) premonsoon and (b) monsoon seasons in 2001.

Fig. 3.21 Box and whisker plot showing median, lower and upper quartile and lowest and highest values of zooplankton biomass (ml/100m³) at different stations off Cochin during (a) postmonsoon and (b) premonsoon seasons in 2001 and 2002 respectively.

Fig. 4.1 Vertical time series section of (A) sea water temperature (°C) (B) dissolved oxygen (ml/l) (C) salinity (ppt) off Cochin (July 2000- July 2002).

Fig. 4.2 Vertical time series section of (D) phosphate (µ M/l) (E) nitrate (µ M/l) and (F) silicate (µ M/l) off Cochin (July 2000- July 2002).

Fig. 5.1 Monthly landings (t) of oil sardine at Cochin during 2000-2002.

Fig. 5.2 Monthly landings (t) of mackerel at Cochin during 2000-2002.

Fig. 5.3 Monthly landings (t) of penaeid prawns at Cochin during 2000-2002.

Fig. 5.4 Monthly landings (t) of cephalopods at Cochin during 2000-2002.

Fig. 5.5 Monthly landings (t) of threadfin breams at Cochin during 2000-2002

Fig. 5.6 Monthly landings (t) of ribbonfish at Cochin during 2000-2002

Fig. 5.7 Monthly landings (t) of whitebaits at Cochin during 2000-2002.

Fig. 5.8 Monthly landings (t) of lizardfish at Cochin during 2000-2002.

Fig. 5.9 Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly oil sardine landings during 2000-2002.
Fig. 5.10  Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly mackerel landings during 2000-2002.

Fig. 5.11  Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly penaeid prawn landings during 2000-2002.

Fig. 5.12  Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly cephalopod landings during 2000-2002.

Fig. 5.13  Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly threadfin breams landings during 2000-2002.

Fig. 5.14  Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly ribbonfish landings during 2000-2002.

Fig. 5.15  Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly whitebait landings during 2000-2002.

Fig. 5.16  Graph showing the monthly anomalies in sea level and rainfall at Cochin and monthly lizardfish landings during 2000-2002.