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THE EFFECT OF INCREASED TEMPERATURE ON REPRODUCTION IN THE SEA ANEMONE ANTHOPLEURA ELEGANTISSIMA. Brian L. Jennison (introduced by Cadet H. Hand) University of California, Berkeley and Bodega Marine Laboratory.

Reproductive cycles of Anthopleura elegantissima are compared for populations in a power plant thermal outfall and at a control site at Morro Bay, California. Gonad maturation state is assessed from live material and by histological and biochemical methods. Ova are present in the mesenteries as early as February, and mean egg size increases until July, when both populations spawn. Gonads are then resorbed, and eggs do not appear again until the following February. In males, active tailed sperm are visible through-out the summer. Total lipid composition parallels the gametogenic cycle in both populations; however, control anemones store more lipid than do outfall animals, implying that they have more energy available for reproduction. The apparent reduced reproductive ability of outfall anemones may reflect the increased metabolic demands imposed by the outfall temperature, which is commonly 10°C above ambient. (Supported by Sea Grant R/E-10 awarded to Drs. Hand and R. I. Smith).