

DEVELOPMENT OF A COASTAL MARINE FARM AND ITS ASSOCIATED PROBLEMS

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Introduction

Marine farmers must be able to provide selected seed stock, suitable substratum and adequate nutrients for crops grown on their farm structures. This paper describes farm structures and growth of macrophytes on them. This experimental farming program has been under way for the past year at two sites near Goleta, California, USA.

Methods and Materials

Farming is carried out shoreward from the Goleta Bay kelp bed, in Goleta Bay, and at Goleta Point at the west end of the bay. The point site is exposed to longshore currents and wave action, while the bay site is more protected.

To characterize these environments, daily and weekly environmental measurements have been made. Nitrate levels, current speed and secchi depth are discussed here. Nitrates were determined according to (1) on filtered, frozen samples. Current speed was measured using a modified TSK flow meter, and a 25 cm diameter secchi disk was used.

In order to measure the growth response of individual plants, these are grown on planting units consisting of two vertical spar buoys with a horizontal substrate suspended between them (Fig 1). The unit parts are made of two-inch diameter PVC (polyvinyl chloride) pipe. The system is anchored with concrete-filled scrap tires on the sea floor. The spar