

Composition, Export and Faunal Utilization of Drift Vegetation in the Salt River Submarine Canyon

MICHAEL N. JOSSELYN^{a,b}, GREGOR M. CAILLIET^{a,c},
THOMAS M. NIESEN^{a,b}, ROBERT COWEN^c, ANN C. HURLEY^c,
JUDITH CONNOR^d and SANDRA HAWES^c

^aThe order of the first three authors has been chosen at random.

^bDepartment of Biological Sciences, San Francisco State University, San Francisco, CA 94132

^cMoss Landing Marine Laboratories, P.O. Box 223, Moss Landing, CA 95039

^dDepartment of Botany, University of California, Berkeley, CA 94720

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Submarine canyons may be particularly important in the transport process of drift seagrasses and seaweeds from highly productive shallow lagoon areas to deeper water. We studied the composition, export, and faunal utilization of shallow, nearshore benthic vegetation as it was transported to offshore areas via the Salt River submarine canyon on the island of St. Croix, U.S. Virgin Islands. The study was conducted using a saturation diving system (NULS-1: Hydrolab) during two missions in April and August, 1980. Using bottom drifters deployed in Salt River Bay and the submarine canyon, we recorded net benthic current flow up to 2 cm s^{-1} moving out of the lagoon and down the canyon to deeper water. Using bottom nets set up at the canyon head and at the 29m isobar, and from transect surveys and drift clump samples, we determined drift plant export rates and drift clump biomass and species composition. The dominant drift plants were *Thalassia testudinum* and *Syringodium filiforme* and algae in the genera

Dictyota, *Dictyopterus*, and *Dilophus*. During the second mission, the seagrass *Halophila decipiens* became more abundant, both in the drift and in large patches along the canyon floor. In both missions, more drift was collected in the nets during high wind conditions than during calmer days. Calculated turnover times ranged from 0.01 to 4.4 days for algae in the order Dictyotales and 4.4 to 18 days for *Thalassia* blades. Total exported biomass of drift vegetation varied between 1.4 to 65.1 kg wet wt day⁻¹. Samples of drift vegetation contained mostly juvenile forms of both invertebrates and fishes, but in relatively low numbers. Faunal numbers were most strongly related to rate of drift movement.