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## Distribution of benthic foraminifera near Isla de los Estados

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This project deals with the study of foraminifera from 55 samples taken in the vicinity of Isla de los Estados, Tierra del Fuego, Argentina (fig. 1). The samples were collected in 1969 and 1972 from aboard R/V *Hero*. This project was supported by National Science Foundation grant gv-31162 to the University of California, Davis.

Upon collection, the samples were preserved in 70 percent alcohol. In the fall of 1973, Rose Bengal was added to them and allowed to remain for several days.

The samples then were decanted, washed, dried, floated in carbon tetrachloride, and "live" specimens of the foraminifera were picked and mounted on slides. The data was analyzed by using the Sanders (1968) rarefaction method for measuring species diversity. Hurlbert (1971) modified this model to make it more ecologically relevant, but I used the model as a relative method of comparing different assemblages and did not utilize Hurlbert's modification.

When the data was graphed it became apparent that there were four distinct assemblages: a protected intertidal assemblage, a protected offshore assemblage, an exposed intertidal assemblage, and an exposed offshore assemblage. The protected assemblages occur in narrow bays or inlets, while the exposed assemblages occur in broad bays or in the open ocean. Representative stations for these four assemblages are graphed in fig. 2.

The protected intertidal assemblage consists primarily of *Rosalina globularis*, *Cibicides lobatulus*, *Elphidium lessonii*, *Elphidium crispum*, and *Patellina corrugata*. It differs from the exposed intertidal assemblage in having fewer species and, therefore, has a significantly lower Sanders index.

The exposed intertidal assemblage is dominated by *Rosalina globularis*, *Cibicides lobatulus*, *Elphidium lessonii*, and *Trochammina squamata*. The intertidal assemblages differ from the offshore assemblages most significantly in the changes in two genera: *Elphidium* and *Rotorbinella* (= *Gavelinopsis*). The former genus is prominent intertidally and is virtually absent in offshore areas. The reverse is true of *Rotorbinella*.

The protected offshore assemblage consists mainly of *Rosalina globularis*, *Cibicides lobatulus*, *Cibicides fletcheri*, and *Rotorbinella praegeri*. It extends from 10 to 70 meters in depth. It differs from the exposed offshore assemblage by having a lower Sanders index and has a paucity of *Discanomalina vermiculata*.

The exposed offshore assemblage (the shelf province of Heron-Allen and Earland, 1932; Boltovskoy, 1970; Herb, 1971) is dominated by *Rosalina globularis*, *Cibicides lobatulus*, *Cibicides fletcheri*, *Rotorbinella praegeri*, *Cribrostomoides jeffreys*, and *Discanomalina vermiculata*. The last species particularly is indicative of this assemblage. The depth range of this assemblage is 10 to 500 meters. The Sanders index shown in fig. 2 is an average figure for these stations. The diversity changes markedly over the depth range. It is fairly low at shallow stations and rises to a maximum at the deepest station.

One sample was taken at 900 meters in depth in the bathymetric zone H3 of Herb (1971). It shows a distinct change from the shallower stations, especially in the presence of *Cibicides wuellerstorfi* and *Rupertina stabilis*.

A more detailed study of the area is underway. A

Figure 1. Sample localities in the vicinity of Isla de Los Estados used for foraminiferal study.

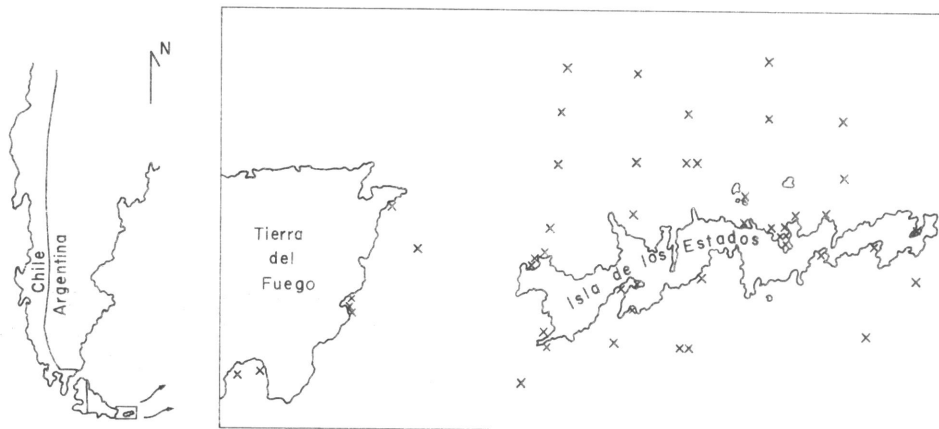
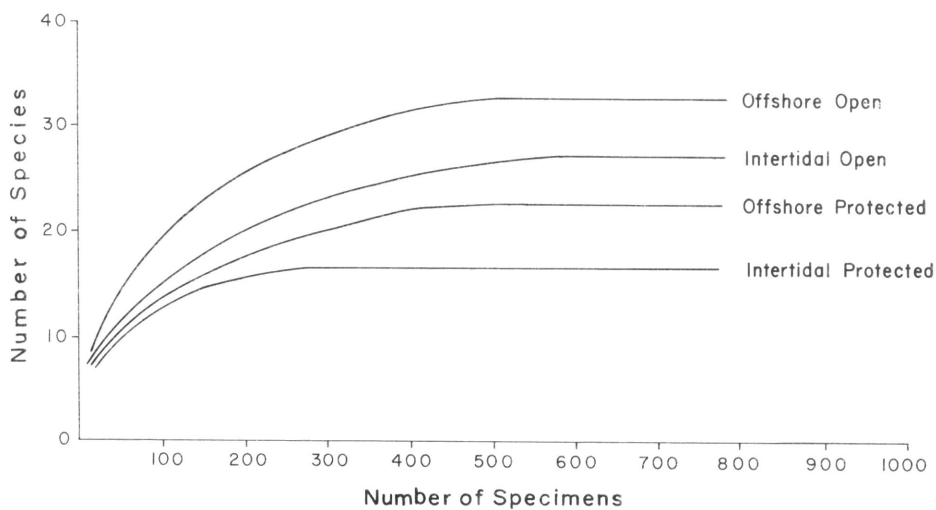


Figure 2. Rarefaction curves of species diversity based on the method of Sanders (1968) for samples representative of each of the four assemblages recorded in this study.



paper drawing extensive comparisons with previous works and suggesting areas of future investigation is in progress.

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