

pesquero, e.g., abundancia de hábitat y conectividad para EFH ó AMP.

**PALABRAS CLAVES:** Caracterización de hábitats, sonar lateral, hábitats a escala detallada, hábitats de coral

## **Vertical Distribution of Larval Fishes off La Parguera, Southwest Puerto Rico**

JENNIE T. RAMÍREZ-MELLA<sup>1</sup> and JORGE R. GARCÍA-SAIS<sup>2</sup>

<sup>1</sup> *Department of Biology  
Interamerican University, Ponce  
104 Parque Industrial Turpo  
Mercedita, Puerto Rico 00715-1602*

<sup>2</sup> *Department of Marine Sciences  
University of Puerto Rico, Mayaguez  
P.O. Box 908, Lajas PR 00667*

The vertical distribution of fish larvae from the southwest coast of Puerto Rico were described from samples collected during two cruises, Feb/95 and May/96 along three meridional (North-South) transects (67°00'; 67°03; and 67°06 W) running perpendicular to the coastline off La Parguera. The shelf-edge (SE-13) and three offshore positions (OC-17, OC-29 and OC-46) were occupied along each transect, for a total of 12 stations per cruise. These stations were sampled in vertically stratified, step-oblique tows at three discrete depths (surf 0-20, mid 21-40 and deep 41-60 meters) within the surface mixed layer using a 1 m<sup>2</sup> Tucker Trawl fitted with three 202  $\mu$ m mesh nets and standard flow meters. Conductivity, temperature, depth, and chlorophyll-*a* concentrations were measured using a CTD profiler with an integrated fluorometer. Water column density profiles at the different stations for February and May cruises showed permanent stratification with well developed pycnoclines associated with increasing salinity and a decline of water temperature with depth.

A total of 15,638 fish larvae representing 82 families were identified during the study. Pre-flexion coral reef fish larvae did not show any statistically significant pattern of abundance in their vertical distribution within the surface mixed layer. Only a few families at post-flexion stage showed statistically significant differences of abundance between depths, or between day and night samplings. While a more comprehensive vertical sampling program based on a larger number of samples may be required to provide definitive conclusions on reef fish vertical distributions for some taxa, some trends were apparent. Abundance of oceanic type larvae, such as myctophids, gonostomatids and photichthyids increased with depth, as well as coral reef fish larvae of the Gobiidae and Scaridae families. Conversely, Clupeiformes, Pomacentridae, Haemulidae and Holocentridae were more abundant at shallower depths within the surface mixed layer. Lutjanidae were found mostly in mid water.

The level of taxonomic analysis (Family) used in the present study may have masked species-specific trends in vertical distribution. Furthermore, patchiness was relatively high, and imposed a large margin of variability in mean abundance at each depth.

**KEY WORDS:** Fish larvae, vertical distribution, Puerto Rico

### **Distribución Vertical de Larvas de Peces Fuera de La Parguera, al Suroeste de Puerto Rico**

La distribución vertical de las larvas de peces fueron descritas de las muestras colectadas estratificadas verticalmente, por medio de arrastres escalonados a tres profundidades dentro de la capa mixta superficial (superficie 0-20m, profundidad media 21-40m y zona profunda 41-60m). Los perfiles de densidad de agua para los meses de febrero y mayo muestran una estratificación permanente con picnoclinos bien formados asociados a un aumento en salinidad y una disminución en la temperatura con mayor profundidad. Las larvas de arrecife de coral en etapa de pre-flexión, no mostraron diferencias estadísticamente significativas en los patrones de abundancia en su distribución vertical dentro de la capa mixta. Solo unas cuantas familias de larvas en la etapa post-flexión mostraron diferencias significativas en su abundancia para las distintas profundidades o entre el día y la noche. La abundancia de las larvas de las familias oceánicas Myctophidae, Gonostomatidae y Photichthyidae aumentaron con profundidad al igual que las larvas de arrecife de coral de las familias Gobiidae y Scaridae. Por el contrario las larvas de peces del orden Clupeiformes y las familias Pomacentridae, Haemulidae y Holocentridae fueron mas abundantes en la zona de superficie dentro de la capa mixta. Las larvas de la familia Lutjanidae fueron encontradas mayormente en la profundidad media.

El nivel taxonómico de análisis (Familia) utilizado en este estudio pueden haber enmascarado las tendencias en distribución vertical a nivel de especie.

Además, la distribución en agregado fue muy alta e impone un alto margen de variabilidad en la abundancia promedio en cada profundidad.

**PALABRAS CLAVES:** Las larvas de peces, distribución vertical , Puerto Rico