Research Leading Toward Prediction of Pink Shrimp Abundance

BERNARD J. YOKEL
Institute of Marine Science, University of Miami
Miami, Florida

Abstract

One of the principal objectives of population studies of juvenile pink shrimp in the Everglades National Park is to develop an index of related abundance for shrimp in the Buttonwood Canal, near Flamingo. Such an index could then be compared with a second index of catch per unit of effort by commercial vessels on the Tortugas grounds. If a constant relationship could be shown to exist between these, prediction of fishing success might be made from catches in the canal.

Since January, 1963, regular bi-monthly samples of juvenile pink shrimp have been taken in the Buttonwood Canal. These samples are taken with a 75' x 9' net which spans the full width and depth of the canal. The net intercepts juvenile shrimp passing from the Whitewater Bay estuary in the Everglades National Park to Florida Bay, on their way to the Tortugas grounds. All, or nearly all, shrimp and other animals above a small size, moving with the tidal current, are caught by this net.

Catches made on or near (± three days) the times of the new or full moons are used as indices of monthly abundance. These show a general positive correlation with commercial landings of the smallest size shrimp.

During periods of moderate abundance there is a one month delay from the time the shrimp leave the estuary until they appear in the commercial catches. In times of high abundance this delay may be up to two months. Work is under way to increase the precision of calculating both the index of abundance of migrating juveniles and the catch per unit of effort of small shrimp in the fishery.