Doudoroff, P., and M. Katz. 1950. Critical review of literature on the toxicity of industrial wastes and toxic components to fish. Sewage and Industrial Wastes. 22:1432-1458.

Jones, J. R. E. 1964. The inorganic gases, p. 100-105. *In* L. Klein (ed.), Fish and river pollution. Butterworths, London.

McKee, J. E., and H. W. Wolf. 1963. *Water Quality Criteria.* 2nd ed. Calif. State Water Quality Control Board Pub. No. 3-a, 548 p.

Wallen, I. E., W. C. Greer, and R. Lasater. 1957. Toxicity to *Gambusia affinis* of certain pure chemicals in turbid waters. Sewage and Industrial Wastes. 29:695-711.

SURVIVAL OF YOUNG OYSTERS IN AREAS OF DIFFERENT SALINITY IN MOBILE BAY

By EDWIN B. MAY and DONALD G. BLAND

Alabama Department of Conservation Seafoods Division
Alabama Marine Resources Laboratory Dauphin Island, Alabama

The oyster drill, *Thais haemastoma,* is the most serious predator of young oysters in Alabama. Mortalities as high as 95 percent have been attributed to drills in some areas (May, 1968). The distribution of *T. haemastoma* within the state is regulated by salinity. It is generally accepted that average salinities in excess of 15 ppt favor drill populations (Chapman, 1959) and that their activity diminishes if salinity is below 10 ppt. (Galtsoff, 1964). Drills are abundant in higher salinity areas of lower Mobile Bay and Mississippi Sound but are restricted or absent in areas of the northern half of the bay with average salinities less than 15 ppt.

Bottom salinities in Mobile Bay were studied by Austin (1954), Nelson (1967) and McPhearson during 1965 and 1966 (in Ryan, 1969). Additional data were gathered by us from 1967 to the present. All these data generally agree that a difference of about 3 to 10 ppt exists between the two areas throughout the year with the salinity in the northern area generally averaging below 15 ppt while the southern area is usually above 20 ppt (figure 1).

During August and September, 1968, oyster shells were planted for cultch in two areas of different salinity in lower Mobile Bay. Survival of spat and young oysters from a September-October set was observed biweekly from September, 1968 through May, 1969 by counting the average number of spat per shell from randomly dredged samples of 25 shells taken from each area.

The high survival of young oysters in the lower salinity areas was attributed to the lack of drills. Over 85 percent of the oysters in the higher salinity area were killed by oyster drills during the 9 month period (figure 2).

LITERATURE CITED

Austin, George B. 1954. On the circulation and tidal flushing of Mobile Bay, Alabama, Part I. Texas A & M College Research Foundation project 24: 28 p.

Chapman, Charles R. 1959. Oyster drill (*Thais Haemastoma*) predation in Mississippi Sound. 1958 Proceedings Nat. Shellfisheries Assoc. 49: 87-97.

Galtsoff, Paul S. 1954. The american oyster *Crassostrea virginica* Gmelin. U. S. Fish Wild. Serv. Fish. Bull. 64: 480 p.

May, Edwin B. 1968. Summer oyster mortalities in Alabama. Progressive Fish-Culturist. 30(2): 99.

Nelson, Walter R. 1967. Studies on the croaker, *Micropogon undulatus* Linnaeus, and the spot, *Leiostomus xanthurus* Lacépède, in Mobile Bay, Alabama. Unpublished masters thesis, Univ. Alabama: 85 p.

Ryan, John J. 1969. A sedimentologic study of Mobile Bay, Alabama. Florida State Univ., Sedimentological Research Lab. Contribution (30): 109 p.

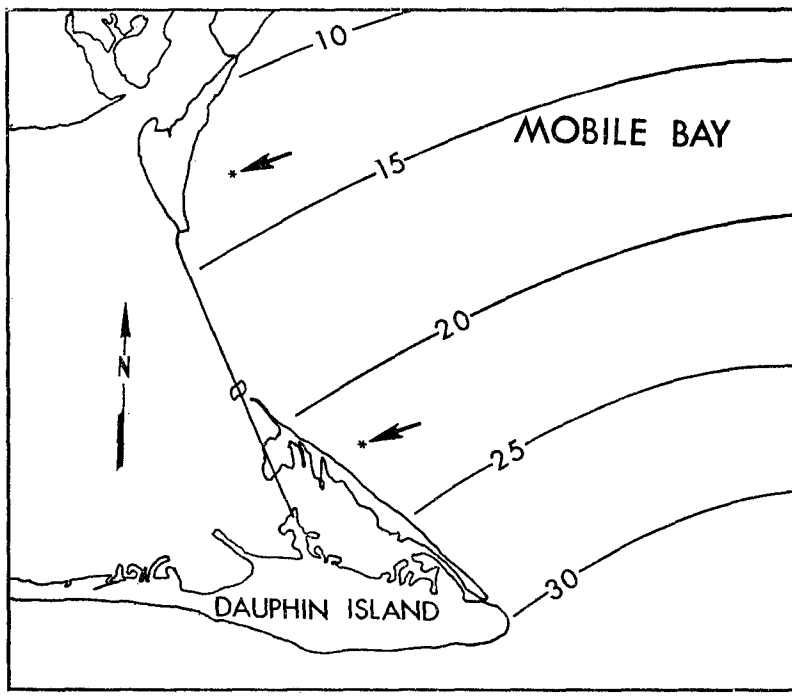

Figure 1. General salinity patterns in relation to the two study areas in lower Mobile Bay.

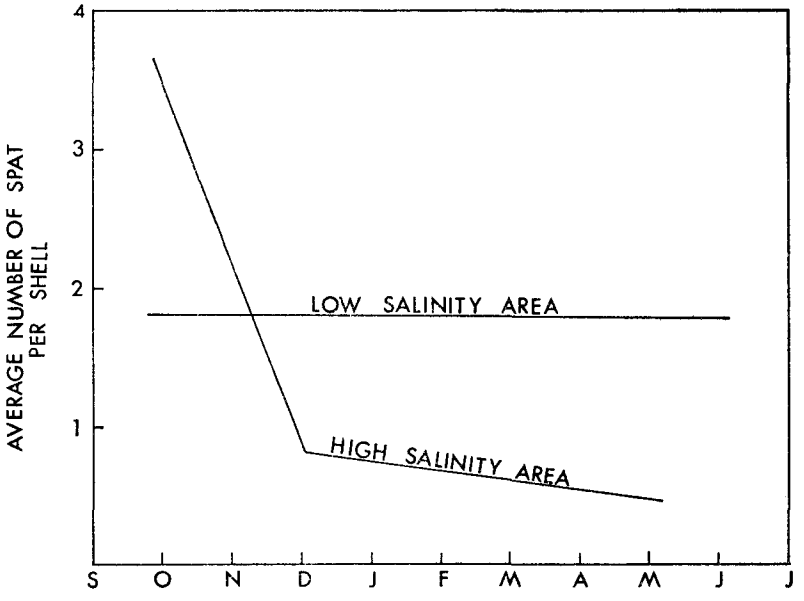

Figure 2. Comparison of survival of young oysters in two areas of different salinity in Mobile Bay.

A CASE OF GUANOTROPHY IN A SMALL LIMESTONE QUARRY POND IN KENTUCKY *

By HENRY H. HOWELL

Asbury Collge, Wilmore, Kentucky

INTRODUCTION

The word "guano" comes from the Peruvian Spanish word "huanu" meaning dung, and it was used originally to refer to the massive bird droppings on some of the offshore islands near Peru. These droppings were found to be a good fertilizer source, as they were high in nitrogen and phosphorous. The term "guanotrophy" was perhaps first used by Leentvaar (1958), and it has to do with the producing of a specific environment by bird excrements. (Dr. Brinkhurst introduced the term to some of us at the Midwest meeting last year when he described guanotrophy in a British lake).

In a nation and in a world where poultry production is becoming an ever increasing source of protein for human consumption, the disposal of fowl wastes in such a manner as to not pollute the environment presents a great challenge to scientists in many disciplines; and, here in the beginning we raise the question, "Can any good come out of fowl wastes?"

* Most of this paper was first presented at the annual meeting of the Midwest Benthological Society in 1967.