

Identification_Information:

Citation:

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Originator: NOAA Fisheries Service

Publication_Date: 20051223

Title:

Use of oyster reef and salt marsh habitat
by estuarine macrofauna and infauna at
Confederate Reef and Galveston Island
State Park (Texas) during December
1988 and July 1989.

Description:

Abstract:

In December 1988 and July 1989, samples
were collected at Confederate Reef and
at Galveston Island State Park to
assess an oyster reef and adjacent areas
as nursery habitat for juveniles of
economically important penaeid shrimp,
blue crabs, stone crab, and fishes. Reef and marsh
habitats generally had significantly higher
numbers than bare mud habitat. Differences
in utilization patterns were apparent
among species.

Purpose:

Identify and describe the relationship
between fishery productivity and the
coastal environment. Specifically, to
assess an oyster reef and adjacent areas
as nursery habitat for juveniles of
economically important penaeid shrimp,
blue crabs, stone crab, and fishes.

Time_Period_of_Content:

Time_Period_Information:

Multiple_Dates/Times:

Single_Date/Time:

Calendar_Date: 19881213

Single_Date/Time:

Calendar_Date: 19881214

Single_Date/Time:

Calendar_Date: 19881215

Single_Date/Time:

Calendar_Date: 19890714

Single_Date/Time:

Calendar_Date: 19890721

Single_Date/Time:

Calendar_Date: 19890725

Currentness_Reference: ground condition

Status:

Progress: complete

Maintenance_and_Update_Frequency: As needed

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -94.94

East_Bounding_Coordinate: -94.87

North_Bounding_Coordinate: 29.30

South_Bounding_Coordinate: 29.26

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: distribution
Theme_Keyword: abundance
Theme_Keyword: predator
Theme_Keyword: prey
Theme_Keyword: estuarine dependent
Theme_Keyword: 1.8 m diameter drop sampler
Theme_Keyword: submerged aquatic vegetation
Theme_Keyword: dredge disposal
Theme_Keyword: 10 cm diameter core sample
Theme_Keyword: brown shrimp
Theme_Keyword: white shrimp
Theme_Keyword: pink shrimp
Theme_Keyword: Farfantepenaeus aztecus
Theme_Keyword: Litopenaeus setiferus
Theme_Keyword: Farfantepenaeus duorarum
Theme_Keyword: macrofauna
Theme_Keyword: salt marsh
Theme_Keyword: fish
Theme_Keyword: shrimp
Theme_Keyword: crabs
Theme_Keyword: invertebrates

Place:

Place_Keyword_Thesaurus: Galveston Bay
Place_Keyword: Confederate Reef
Place_Keyword: Carancahua Cove
Place_Keyword: Jamaica Beach
Place_Keyword: Galveston Island State Park
Place_Keyword: West Galveston Bay
Place_Keyword: Texas
Place_Keyword: Gulf of Mexico

Access_Constraints:

Use_Constraints:

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Point_of_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization:

NOAA Fisheries Service, formerly National
Marine Fisheries Service, Fishery Ecology Branch.

Contact_Person: Dr. Jim Ditty

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State_or_Province: Texas
Postal_Code: 77551-5997
Country: Unites States of America
Contact_Voice_Telephone: 409-766-3500

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Data were entered into spreadsheets and checked against the raw data sheet to avoid entry errors.

Logical_Consistency_Report:

Completeness_Report:

Lineage:

Process_Step:

Process_Description:

Sampling Gear Description:

The 1.8 m diameter cylindrical drop trap was a fiberglass enclosure with a galvanized metal skirt along the bottom. Drop traps enclosed a 2.6 m² area. Traps were deployed from a boat with a front-mounted boom.

Process_Date: unknown

Process_Step:

Process_Description:

Measuring Environmental Variables:

Environmental data were collected immediately after gear deployment and before collection of animals. Water temperature, salinity, and D.O. data were collected within the sampler and a water sample was returned to the lab for turbidity analysis. Minimum and maximum water depth were taken inside the sampler and recorded to the nearest centimeter. Average water depth was the midpoint between values.

Process_Date: unknown

Process_Step:

Process_Description:

Sampling of Nekton and Associated Plants:

The engine was turned off once the boat approached the sampling site to minimize site disturbance prior to sampling. The boat drifted or was slowly guided to the sampling site by pushing from the stern. One person in the boat released the trap from the bow. Immediately after drop sampler deployment, field personnel pushed the sampler approximately 15 cm into the sediment to obtain a proper seal along the bottom of the trap to prevent escape of organisms or a trap blow-out. If the sample was taken in a marsh, vascular plants enclosed in the sampler were clipped at ground level to assist in animal retrieval. Vegetation retained on the sieve was placed in labeled plastic bags, preserved in formalin and returned to the laboratory for examination.

Process_Date: unknown

Process_Step:

Process_Description:

Removal of Animals

DROP TRAPS:

After the drop trap was pushed into the substrate, dip nets were used to sweep the bottom of the trap and remove the nekton. Enclosed water was pumped from the trap and filtered through a 1.0 mm mesh plankton net. As the water level dropped, the sampler was continually swept with dip nets because the efficiency of animal capture increases with reduced water depth. Once drained, the sediment was visually and manually inspected for animals remaining on or burrowed into the substrate. Animals taken in dip nets or found during substrate inspection were added to the drop trap catch. Animals and other material (i.e., vegetation, macro-algae, shell hash, and detritus) pumped into the cod end of the plankton

net were rinsed and the catch bag was detached. Samples were placed in a 1.0 mm mesh bag, labeled, preserved, and returned to the laboratory for processing.

Process_Date: unknown

Process_Step:

Process_Description:

Care of Nekton Samples in the Field:

Labeled, waterproof shipping tags were placed inside, and attached to the outside of each 1.0 mm mesh sample bag. Samples were stored in 3 or 5 gallon buckets containing 10 percent formalin. Ten percent formalin was made by mixing one part full-strength formaldehyde with nine parts water. If animals were too large to fit into the sample bag, the specimen was identified to the lowest taxon, measured, recorded and released.

Process_Date: unknown

Process_Step:

Process_Description:

Initial Processing of Field Data and Samples:

After returning from the field, samples were recorded in the laboratory log book in sequential order. The log book served as a sample inventory and to verify sample arrival and condition. Sediment samples were organized by number and refrigerated or frozen until processed. Turbidity samples were analyzed upon return to the lab, and the information was transferred to the field data sheets. Field data sheets were entered into an electronic database or a database manager. A printout was given to the primary investigator for review.

Process_Date: unknown

Process_Step:

Process_Description:

SAMPLE SORTING:

After the samples were sorted, the sample and specimen jars were filled with 2-3 percent formalin (i.e., mixture of 0.25-part of full-strength formalin and 9.75-parts water).

Process_Date: unknown

Process_Step:

Process_Description:

SPECIES IDENTIFICATION AND MEASUREMENT:

Organisms were measured to the nearest millimeter to determine total length (TL) or total carapace width (CW). Each fish was measured after being placed flat on its side with its mouth closed. TL was the distance from the snout to the tip of the longest caudal fin ray. TL was measured from the tip of the rostrum to the tip of telson. If the rostrum was broken, TL was not measured. Carapace width (CW) of crabs was measured across the widest part of the carapace (from tip to tip of the lateral spines if present). If lateral spines were broken, CW was not measured. Non-penaeid crustaceans were recorded to the nearest 5 mm TL and fish were recorded to the nearest 10 mm size intervals.

Process_Date: unknown

Process_Step:

Process_Description:

Laboratory Processing of Benthic Core Samples:

The sample was poured through a 0.5 mm mesh sieve with a smaller mesh sieve placed underneath so that any organisms rinsed from the sample were retained

on the smaller mesh sieve. Vegetation was untangled using forceps and each piece was rinsed. Intact seagrass (those plants complete with stems and roots) was rinsed, placed in a small tray, and set aside. Contents were examined under a dissecting microscope and animals were removed. Organisms were transferred to ETOH for long-term storage. All gastropod shells were examined for occupants by looking for either the operculum (which were usually stained dark purple) or the body of a mollusk in the aperture of the shell. If the sorter was unsure whether the shell was occupied after examination, the entire shell was placed in the sample vial.

Process_Date: unknown

Process_Step:

Process_Description:

Organism Data Entry and Validation:

Laboratory and field data were entered into the computer using a database manager. A text file was created that described these data and any abbreviated variables. Data were printed out and checked against ID sheets to ensure all information was correct. Data corrections were made at this time. Hard copies of the file were given to the PI and stored in the project folder along with the original field and laboratory data sheets. A code was assigned to each species using the Fishery Ecology Branch revised species code list. Species not found on the code list were assigned a new code, which was also added to the master code file.

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Metadata_Reference_Information:

Metadata_Date: 20051223

Metadata_Contact:

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NOAA Fisheries Service, National Marine Fisheries Service, Fishery Ecology Branch, Galveston, Texas

Contact_Person: Dr. Jim Ditty

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Postal_Code: 77551-5997

Country: Unites States of America

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Metadata_Standard_Name:

FGDC Content Standard for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001.1-1999