BASELINE SHELLFISH DATA FOR THE ASSESSMENT OF POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH ENERGY ACTIVITIES IN CONNECTICUT'S COASTAL ZONE

SUPPLEMENT

Connecticut Coastal Zone Management Program

QH
76.5
B37
1983

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QH76.5 B37 1983 c.1

SUPPLEMENT

Baseline Shellfish Data For The Assessment Of Potential Environmental Impacts Associated With Energy Activities In Connecticut's Coastal Zone

Connecticut. Dept. of Environmental Protection

CONNECTICUT COASTAL ENERGY IMPACT PROGRAM

COASTAL ZONE INFORMATION CENTER

SUBMITTED TO:

OFFICE OF POLICY AND MANAGEMENT
STATE OF CONNECTICUT

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CONNECTICUT DEPARTMENT OF AGRICULTURE

CONNECTICUT COASTAL ENERGY IMPACT PROGRAM

PREPARED FOR THE STATE DEPARTMENT

OF AGRICULTURE AND

CONNECTICUT STATE OFFICE OF POLICY AND MANAGEMENT

Financial Assistance for this report has been provided by the Coastal Zone Management Act of 1972, as amended and administered by the Office of Ocean and Coastal Resource Management, N.O.A.A., Department of Commerce and the Connecticut State Office of Policy and Management.

I. Program Narrative

1. Purpose

Several areas within the scope of the original C.E.I.P. project * were not sampled for shellfish populations. This was due to navigation and equipment limitations imposed by shallow water and/or benthic obstructions. The purpose of the C.E.I.P. project extension is to acquire shellfish resource data from these areas utilizing hand sampling equipment and scuba diving techniques.

2. Study Area

The following subtidal sample stations are designated for shellfish population assessment:

Station	Location
E1	Penfield Reef
E2	Pine Creek
E3	Merwin Point
E4	Maltby Cove
E5	Spectacle Island
E6	Outer Thimble Island
E7	Goose Island
E8	Falkner Island
E9	Duck Island
E10	Great Island

3. Methods

Each station is sampled for commercially important shellfish species. The density, diversity and size are analyzed and recorded. Additionally, sediment characteristics, water temperature and salinity data are obtained.

* [1] (Baseline Shellfish Data For The Assessment Of Potential Environmental Impacts Associated With Energy Activities In Connecticut's Coastal Zone. CONNECTICUT COASTAL ENERGY IMPACT PROGRAM. August, 1983.)

RESULTS

STATION PROFILE

STATION: E1 PENFIELD REEF

WATER DEPTH: 7 FT.

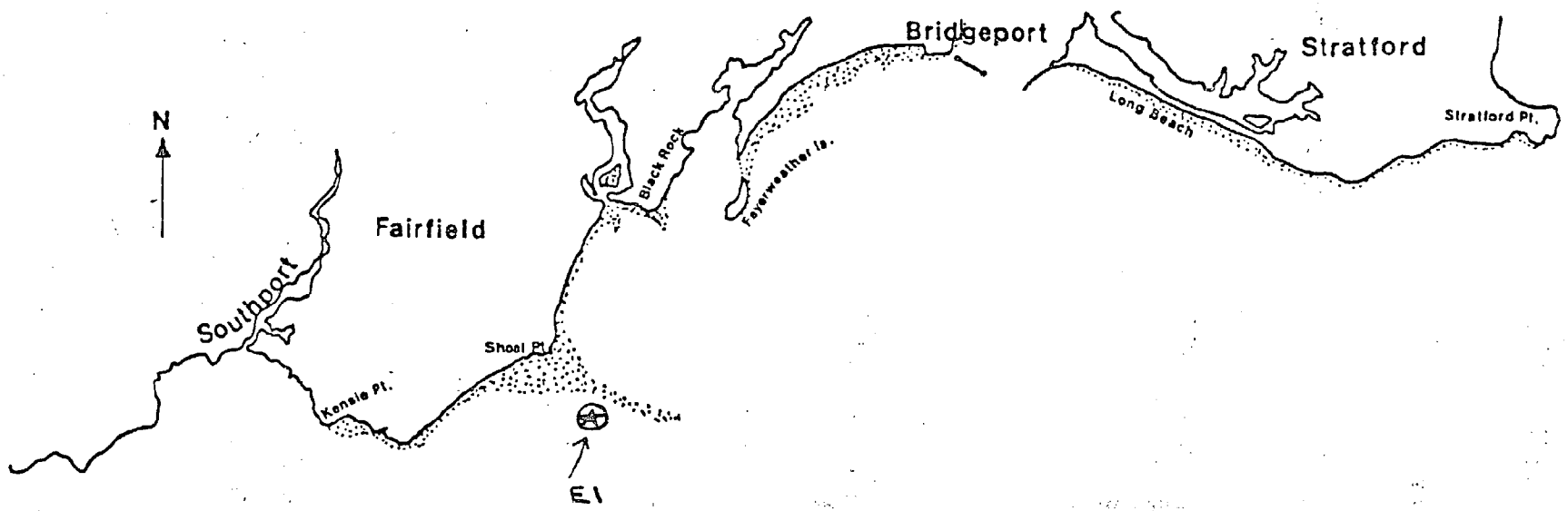
SALINITY: 24.0 PPT.

SEDIMENT CHARACTERISTICS: SAND / SHELL

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	0	0
CLAMS	0	0
MUSSELS	10 / m^2	2.0 cm - 3.0 cm 2.7 cm AVG.

COMMENTS: PRODUCTIVE HABITAT. FLOUNDER, SPIDER CRABS, MOON SNAILS PRESENT. ABUNDANT LAMINARIA AND ULVA ALGAE. SCATTERED OYSTER SHELL THROUGH OUT AREA.


N
Southport
Fairfield
Kensie Pt.
Shoal Pt.
Black Rock
Fayerweather Is.
Bridgeport
Long Beach
Stratford
Stratford Pt.
E1

STATION PROFILE

STATION: E2 PINE CREEK

WATER DEPTH: 12 FT.

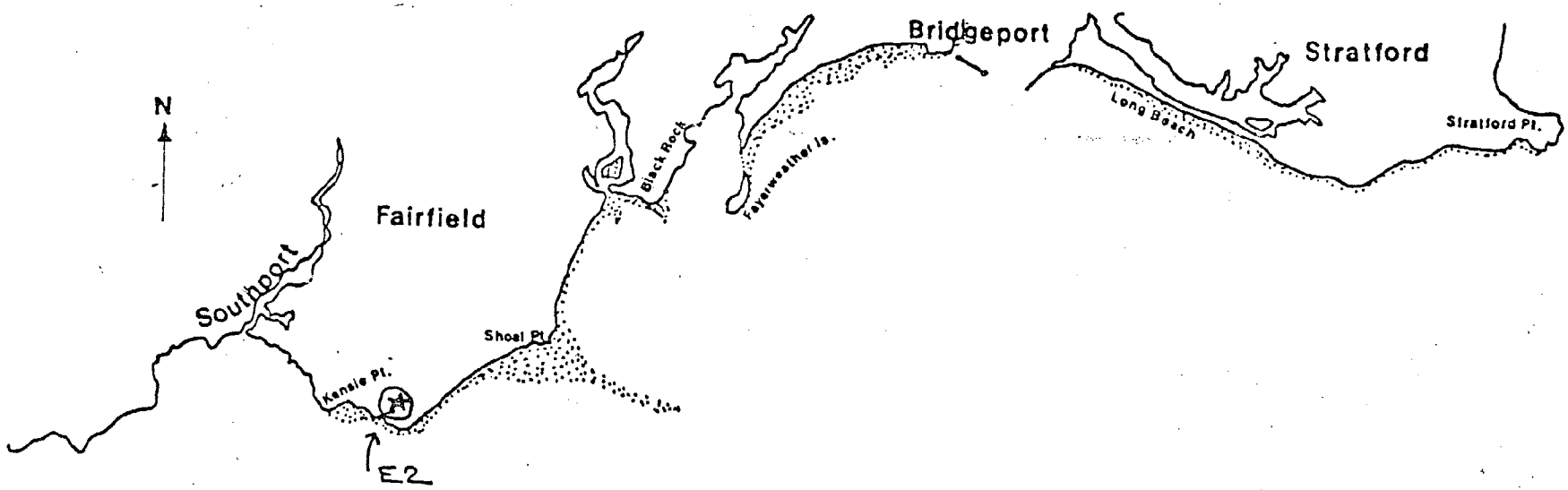
SALINITY: 22.2 PPT.

SEDIMENT CHARACTERISTICS: BLACK MUD

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	1-2/m^2	2.0 cm – 3.2 cm 2.6 cm AVERAGE
CLAMS	7-8/m^2	4.0 cm – 8.0 cm 6.2 cm AVERAGE
MUSSELS	25/m^2	1.8 cm – 2.8 cm 2.2 cm AVERAGE

COMMENTS: SOFT MUD HABITAT, ABUNDANT SHELLS OF STEAMER CLAMS. MUD CRABS, OYSTER DRILLS PRESENT. ABUNDANT BARNACLES ON DEBRIS AT SITE. SOME COBBLE STONES WITH OYSTERS, SMALL SHRIMP


N
Southport
Fairfield
Kensie Pt.
Shoal Pt.
Black Rock
Fayerweather Is.
Bridgeport
Long Beach
Stratford
Stratford Pt.
E2

STATION PROFILE

STATION: E3 MERWIN POINT

WATER DEPTH: 12 FT.

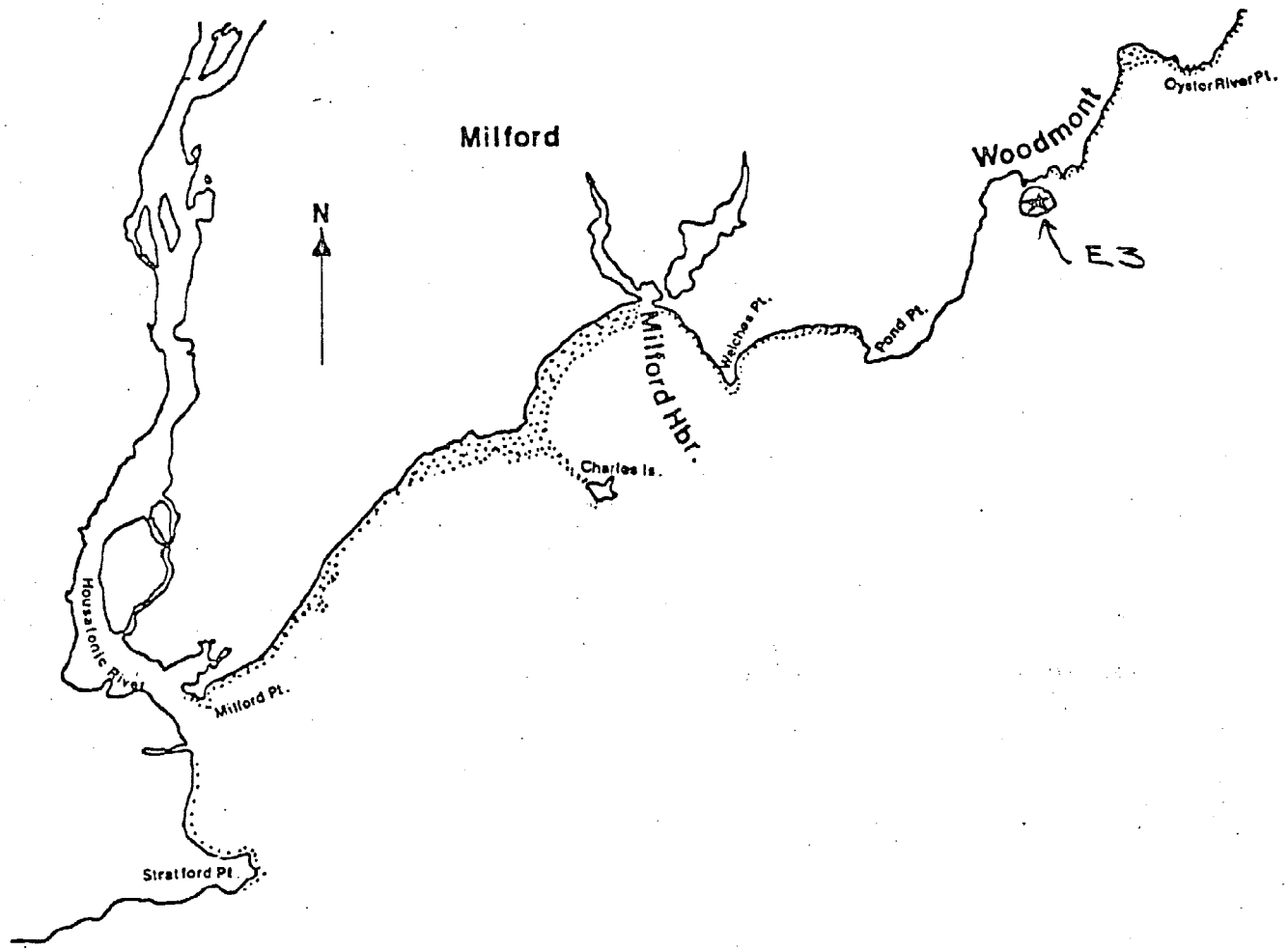
SALINITY: 24 PPT.

SEDIMENT CHARACTERISTICS: MUD SAND

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	0	0
CLAMS	4/m²	7.2cm - 10.2cm 8.0 cm AVG.
MUSSELS	0	0

COMMENTS: FLOUNDER AND BLACKFISH OBSERVED. MOON AND MUDSNAILS PRESENT. SOME ULVA ALGAE.


Milford
N
Woodmont
Oyster River Pt.
E3
Milford Hbr.
Welches Pt.
Pond Pt.
Charles Is.
Housatonic River
Milford Pt.
Stratford Pt.

STATION PROFILE

STATION: E4 MALTBY COVE

WATER DEPTH: 6 FT.

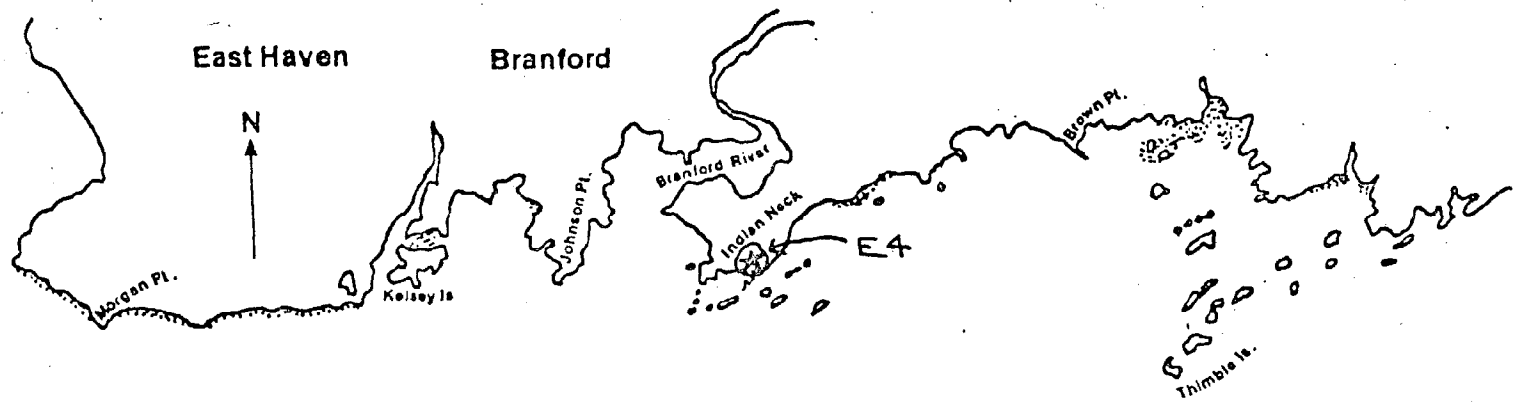
SALINITY: 23.0 PPT.

SEDIMENT CHARACTERISTICS: MUD SAND

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	2-3 / m^2	8.2 - 10.1 cm 9.5 cm AVG.
CLAMS	1-2 / m^2	6.2 - 8.0 cm 7.3 cm AVG.
MUSSELS	0	0

COMMENTS: SMALL FLOUNDER AND A WHELK OBSERVED.
ABUNDANT ULVA ALGAE AND BARNACLES.


East Haven
Branford
N
Morgan Pt.
Kelsey Is
Johnson Pt.
Branford River
Indian Neck
E4
Brown Pt.
Thimble Is.

STATION PROFILE

STATION: E5 SPECTACLE ISLAND

WATER DEPTH: 11 FT.

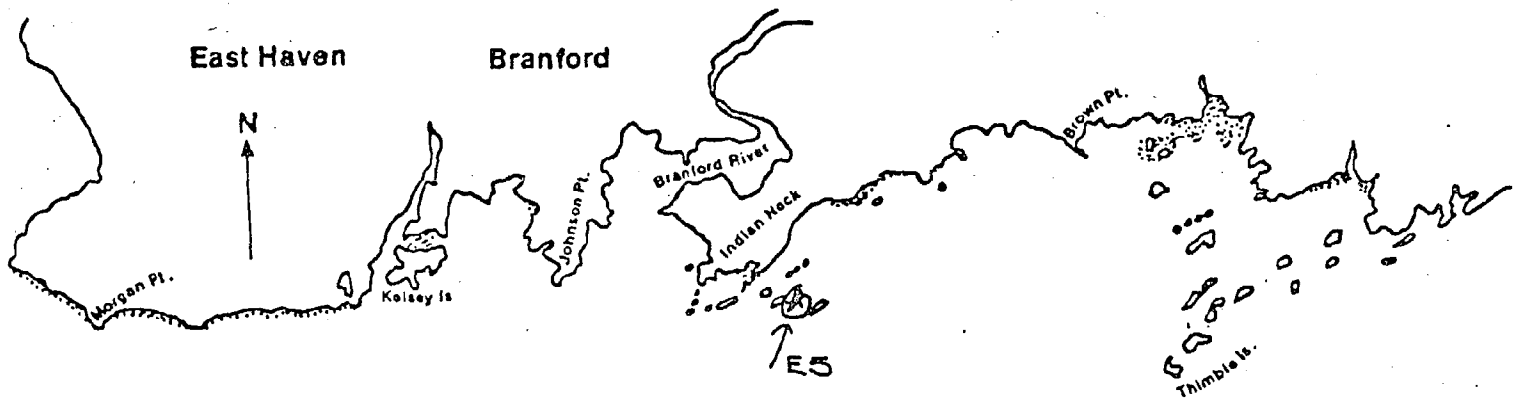
SALINITY: 24.0 PPT.

SEDIMENT CHARACTERISTICS: ROCKY

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	0	0
CLAMS	0	0
MUSSELS	10/M²	2.0-2.6 cm 2.4 AVG.

COMMENTS: LARGE COBBLE STONES, BARNACLE COVERED. ABUNDANT CLIONA SPONGE. SOME STARFISH. BLACKFISH PRESENT


East Haven
Branford
N
Morgan Pt.
Kelsey Is
Johnston Pt.
Branford River
Indian Neck
E5
Brown Pt.
Thimble Is.

STATION PROFILE

STATION: EG OUTER THIMBLE ISLAND

WATER DEPTH: 15 FT.

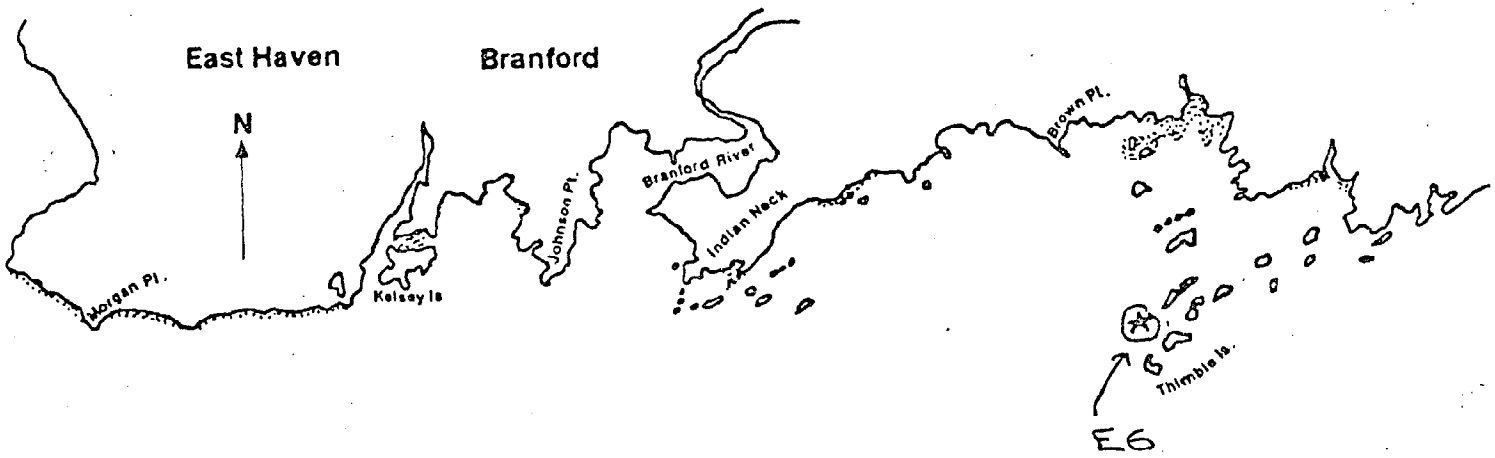
SALINITY: 24.0 PPT.

SEDIMENT CHARACTERISTICS: SOFT MUD

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	> 1/M²	3.0 CM
CLAMS	2/M²	6 - 9 CM 7.2 CM AVG.
MUSSELS		

COMMENTS: BLACK FISH. SOME ROCK AND SPIDER CRABS. ULVA ALGAE PRESENT.


East Haven
Branford
N
Morgan Pt.
Kelsey Is
Johnson Pt.
Branford River
Indian Neck
Brown Pt.
Thimble Is.
E6

STATION PROFILE

STATION: E7 GOOSE ISLAND

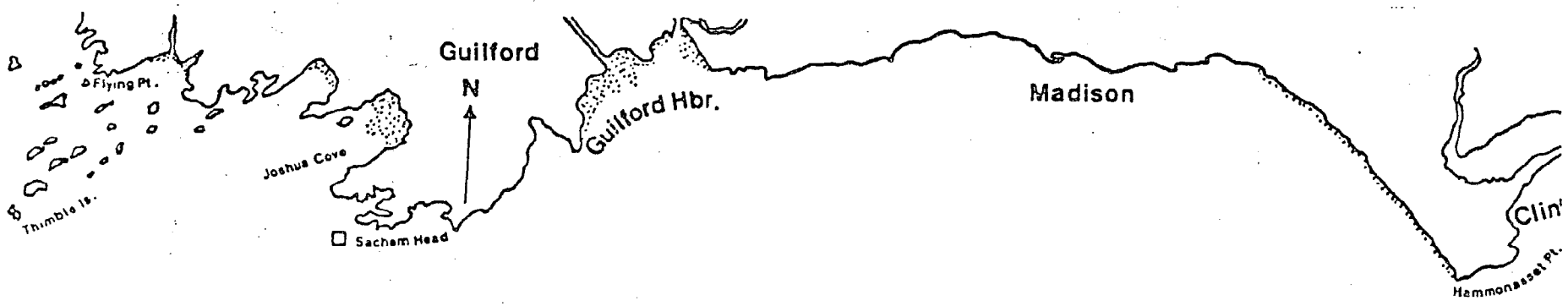
WATER DEPTH: 17 SALINITY: 24.5 PPT.

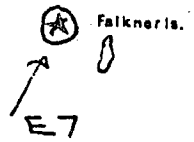
SEDIMENT CHARACTERISTICS: SANDY / ROCKS

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTER	0	0
CLAMS	0	0
MUSSELS	127 / M2	2.3-3.4 CM 2.7 CM AVG.

COMMENTS: ABUNDANT ROCK CRABS. OYSTER SHELL PRESENT, FLOUNDER AND WHELK. SOME LAMINARIA ALGAE.


Flying Pt.
Thimble Is.
Joshua Cove
Guilford
N
Sachem Head
Guilford Hbr.
Madison
Clin
Hammonasset Pt.


Falkner Is.
E7

STATION PROFILE

STATION: EB FALKNER ISLAND

WATER DEPTH: 15'

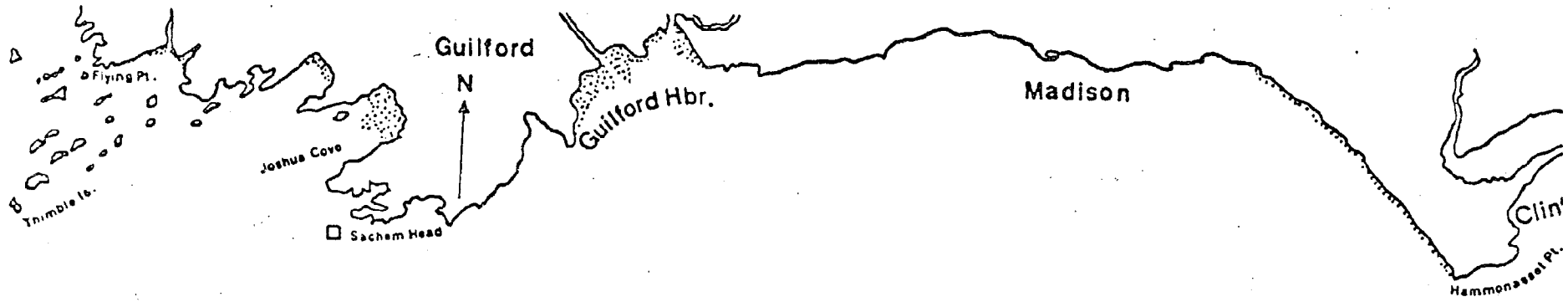
SALINITY: 24.5 PPT.

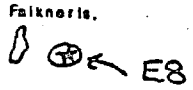
SEDIMENT CHARACTERISTICS: SAND

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTER	0	0
CLAMS	1 /m²	9.2 cm
MUSSELS	0	0

COMMENTS: HARD SAND BOTTOM. "WINDOWPANE" FLOUNDER OBSERVED. ONE WHELK.


Flying Pt.
Thimble Is.
Joshua Cove
Sachem Head
Guilford
N
Guilford Hbr.
Madison
Hammonasset Pt.


Falkner Is.
E8

STATION PROFILE

STATION: E9 DUCK ISLAND

WATER DEPTH: 8 FT.

SALINITY: 24.0 PPT.

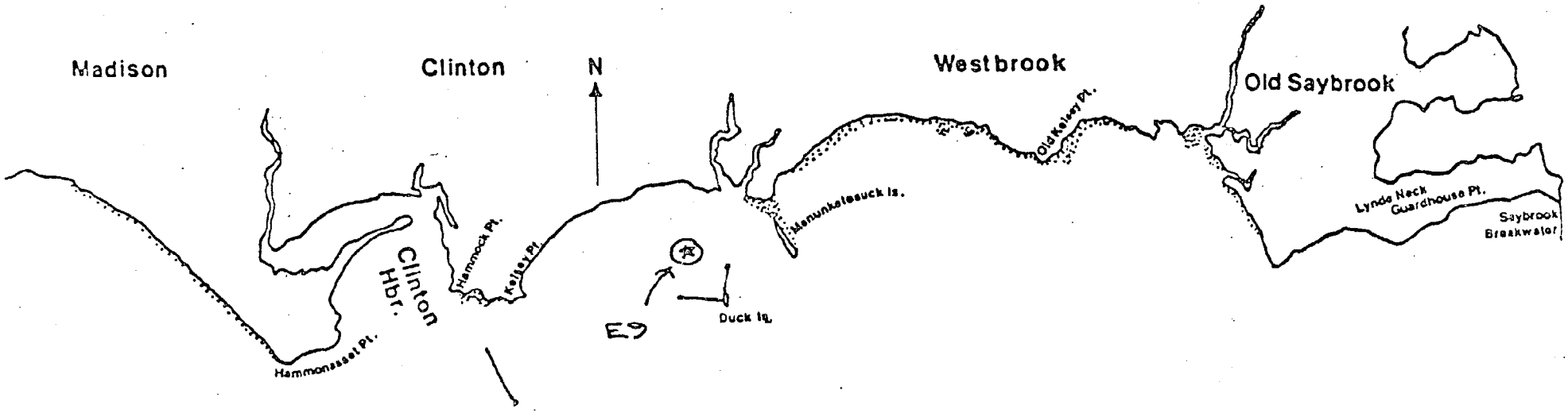
SEDIMENT CHARACTERISTICS: MUD SAND /SHELL

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	0	0
CLAMS	5/M²	4.8-6.7 CM 5.9 CM AVERAGE
MUSSELS	0	0

COMMENTS:

ABUNDANT CLAM SHELL. OBSERVED ONE SURF CLAM. SOME SPIDER CRABS PRESENT.


Madison
Clinton
N
Westbrook
Old Saybrook
Clinton Hbr.
Hammonasset Pt.
Hammock Pt.
Kelsey Pt.
Duck Ig.
Menunkatesuck Is.
Old Kelsey Pt.
Lynde Neck
Guardhouse Pt.
Saybrook Breakwater

STATION PROFILE

STATION: E10 GREAT ISLAND

WATER DEPTH: 8FT.

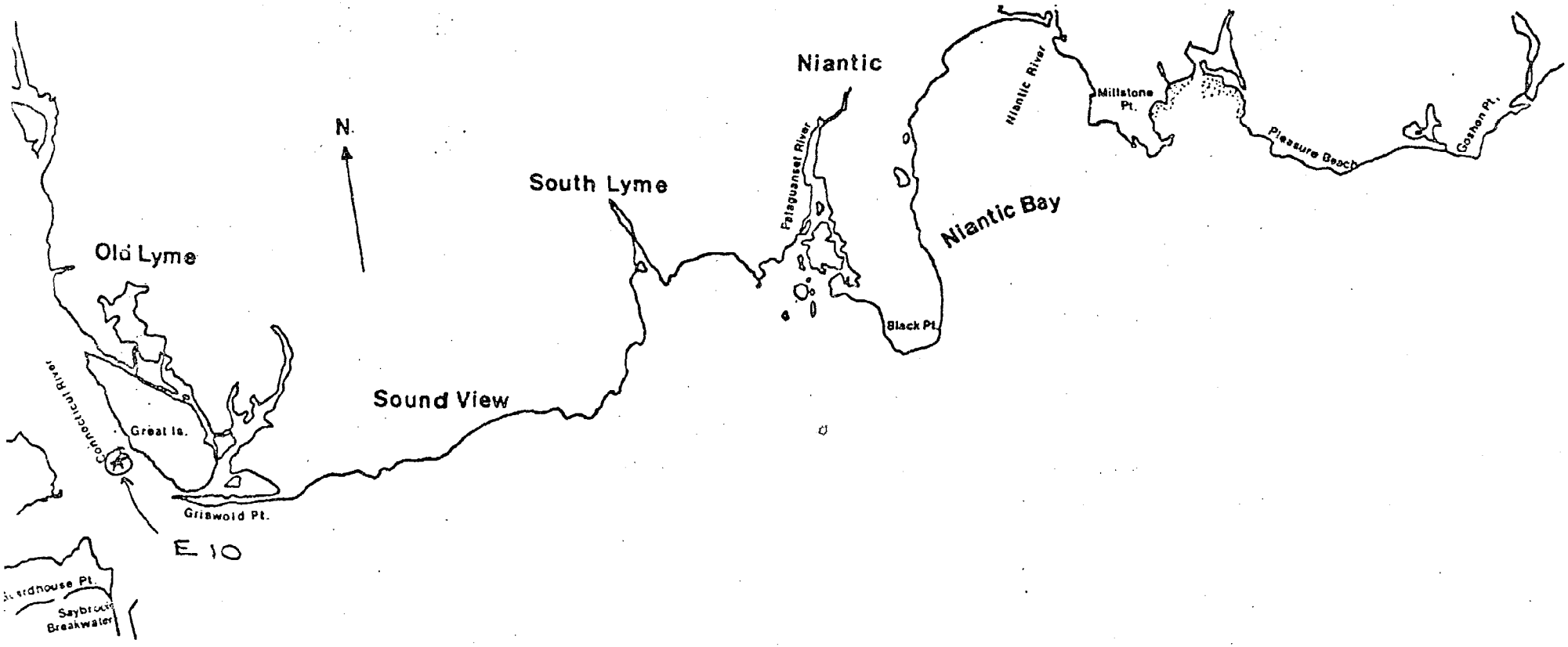
SALINITY: 22.0 PPT.

SEDIMENT CHARACTERISTICS: MUD SAND /SHELL

SHELLFISH DATA

SPECIE	DENSITY	SIZE
OYSTERS	2 /M2	8.0 - 10.9 CM 9.9 CM AVERAGE
CLAMS	0	0
MUSSELS	0	0

COMMENTS: ABUNDANT SOFT SHELL CLAM VALVES. SOME SMALL FLOUNDER. OBSERVED ONE HORSESHOE CRAB.


N.
Old Lyme
Great Is.
Connecticut River
Griswold Pt.
E 10
Saybrook Breakwater
Sound View
South Lyme
Niantic
Falsguansset River
Niantic Bay
Black Pt.
Niantic River
Millstone Pt.
Pleasure Beach
Goshen Pt.

DISCUSSION

All subtidal stations sampled in this supplementary study indicate biological productivity and shellfish resource areas. In the event of an oil spill, these areas should be prioritized for response by oil containment and cleanup teams.

Of all the valuable natural resources in Connecticut's Long Island Sound waters; the molluscan shellfish are the most susceptible to environmental impacts related to petroleum product spills.

Bivalve mollusks such as the oyster, clam and mussel species are characteristically sedentary and are non-migratory residents of the benthic filter feeding community.

Marine oil spills can potentially cause serious environmental and economical consequences resulting in resource losses and the marketability of commercially important shellfish species. This is of major significance to the future of Connecticut's prosperous aquaculture industry.

It is hoped that the existing resource data will be utilized intelligently for planning purposes and that efforts be continued for further monitoring of the habitat quality of Long Island Sound.

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