

1928-1977

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ORIGINAL LOG BOOK OF THE-"FISH HAWK"

UNITED STATES FISH COMMISSION

STATION NUMBERS

Numbers 1928 to 1977

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 1 - 1928  
 Date, Sept 20  
 Time of day, 11.45 AM of tide  
 Locality, Panama Canal  
 Exact position, Whale Creek S.S. 1/4 W  
1.5 miles long.  
 Depth, 33  
 Nature of bottom, fine sand  
 Dredging instrument used, Sledge  
 Direction of drift, SE; distance, 1/2 mile  
 Temperature of air, 27.5 therm. No., 3397  
 " of surface water, " "  
 " at depth of      fathoms, " "  
 " at bottom, 61 " "  
 Density at surface, 1.024 temp., 15.0  
 " at depth of      fathoms, " "  
 " at bottom, 1.029 " 14.50  
 Number of salinometer, 207301  
 Barometer reading, 29.84  
 State of sky, Overcast  
 Direction of wind, SE; force, 10  
 Rain, Yes - continuous shower  
 Direction of surface current, int.; force, 1 knot  
 " of bottom "     ; force,       
 Name of vessel, U.S. Fish Hawk  
 Service to which attached, U.S. Fish Commission  
 Name and rank of commanding officer, St. Comm.  
R. G. Swenson  
 Name and position of observer,  
Pharmacist J. P. Mullen

NOTES RELATING TO STATION NO. 1

1st. Murrelet anchorage  
 at 9<sup>00</sup> am and 10<sup>00</sup> am  
 by H. C. Rumpke of  
 Brown University &  
 Mr. J. H. Southwick  
 of the Rhode Island Fish  
 Commission present  
 around Bunker Hill St. to this  
 station. In S. Sound  
 was raining in 1900. In  
 sea making in 1901.  
 as before. The vessel great  
 deal of water and  
 becoming thick and  
 trying to get beams and  
 work properly only the cast  
 at the bridge was taken  
 the vessel was then steamed  
 around N. Pt. of Conanicut and  
 returned to the anchorage  
 at Newport. No birds  
 matter was brought up in  
 the dredge

Ordinary ships thermometer <sup>no. 7397</sup>  
 for air temperature used.

## RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 2 1929  
 Date, Oct 23 - 98  
 Time of day, 9:20 am : of tide, 3<sup>rd</sup> h - high  
 Locality, Providence River R. I.  
 Exact position, Sacramento Pt. L., S x E, 5.56  
mile mag  
 Depth, 2 1/2 fms  
 Nature of bottom, Black mud  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, South : distance, 1/8 mile  
 Temperature of air, 51 f. therm. No., 7297  
 " of surface water, 73.44  
 " at depth of fathoms, 73.44  
 " at bottom, 73.44  
 Density at surface, 1.017 temp., 19.5 C  
 " at depth of fathoms, 1.019 " 13.0  
 " at bottom, 1.019 " 13.0  
 Number of salinometer, Surface 7301  
Bottom 7104  
 Barometer reading, 30.31  
 State of sky, Clear  
 Direction of wind, N. N. E. : force, 2  
 Rain, No.  
 Direction of surface current, South : force, .3 Knot  
 " of bottom " : force,  
 Name of vessel, U.S. Fish Com.  
 Service to which attached, U.S. Fish Com.  
 Name and rank of commanding officer, R. H. August  
 Name and position of observer,

NOTES RELATING TO STATION NO. 2

Put down of the beam around  
the anchorage and depth  
with current to this station  
(Sta. 2) was hauled up.  
The anchor continued

anchorage A mag. N<sup>3</sup>/<sub>4</sub> W  
.62 miles from surface  
H.

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 3 1930  
 Date, Oct 21 - 1898  
 Time of day, 9:30 AM of tide, 3/4 ebb  
 Locality, Providence River R.I.  
 Exact position, Sassafras Pt. Lt. S 3/4 E .2  
miles Mag.  
 Depth, 5 1/2  
 Nature of bottom, black mud  
 Dredging instrument used, 5 foot beam trawl  
 Direction of drift, N 45 E; distance, 5/8  
 Temperature of air, 51 therm. No., 7097  
 " of surface water, 13.0  
 " at depth of      fathoms,       
 " at bottom, 13.5  
 Density at surface, 1.011 temp., 13.2  
 " at depth of      fathoms,       
 " at bottom, 1.017 bottom 13.5  
 Number of salinometer,      7029  
 Barometer reading, 30.57 7025  
 State of sky, Clear Blue  
 Direction of wind, North; force,       
 Rain, no  
 Direction of surface current,     ; force, .3 Knot  
 " of bottom " " ; force,       
 Name of vessel, U.S. Fish Com. Fish Hawk  
 Service to which attached, U.S. Fish Com.  
 Name and rank of commanding officer, R. G. Lawrence  
 Name and position of observer, W. H. Meyer  
Sumner

NOTES RELATING TO STATION NO. 3

Put down 4 ft beam trawl  
about station 1 and dragged  
7m to current to ~~the~~ station  
(Sta 3) when hauled up. The  
trawl contained.

Living forms - 1 *Uca* *menis*  
2 *Stomatopoda* *ocellatus*  
6 Crayfish  
1 *Eupagurus* *longicauda*  
1 pt. *Trilobea*  
1 pt. *Alpheidae*  
Many small dead bugs.  
1 *Stomatopoda* *ocellatus*  
Everything very dark & black.

# RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. *4* 1931  
 Date, *Oct. 25 - 97*  
 Time of day, *10:15 AM* of tide, *3 3/4 hours past*  
 Locality, *Providence River R. I.*  
 Exact position, *Passaic River, 0 1/2 x 1 1/2 miles*  
*300 feet Mary.*  
 Depth, *27 fms.*  
 Nature of bottom, *fine mud.*  
 Dredging instrument used, *1 ft beam trawl*  
 Direction of drift, *SE* : distance, *1/2 mile*  
 Temperature of air, *57 f* therm. No., *7397*  
 " of surface water, " *7344*  
 " at depth of fathoms, " *7340*  
 " at bottom, *12 f* " *7340*  
 Density at surface, *1.007* temp., *13 C*  
 " at depth of fathoms, " *14 C*  
 " at bottom, *1.017* " *301*  
 Number of salinometer, *7049*  
 Barometer reading, *30.32*  
 State of sky, *Clear blue*  
 Direction of wind, *North* : force, *2*  
 Rain, *No*  
 Direction of surface current, *SE 1/2 E* : force, *3 knots*  
 " of bottom " : force, "   
 Name of vessel, *U. S. Fish Com. Steamer*  
 Service to which attached, *U. S. Fish Com.*  
 Name and rank of commanding officer, *W. S. ...*  
 Name and position of observer, *W. S. ...*



NOTES RELATING TO STATION NO. 4

Pulldown 7 ft beam trawl  
in 12 ft water inside red  
buny No 10. Tacked out then  
drifted with the current to  
this station (4) when hauled up.  
The trawl contained one <sup>large</sup> star  
fish and.

- Wing - 1 Raja sinacea
- 1 Pseudopleuronectes americanus.
- 1 Starfish
- 1 Sycotyphus
- Several Balanus

Small Fringing Sponges  
Numerous Tubinea

Several Sponges

Water hosts many Peridinium.

- 1 Panopeus.
- 1 Syngnathus
- 1 Mytilus
- 1 colony of Balanus with sp.

# RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

1937

Station No. 5

Date. Sept 12 1937

Time of day. 10:40 AM of tide, low

Locality, River R. I.

Exact position, Cassaba Pt. Sta. NW & N  
.28 miles N.W.

Depth. 28.5 feet

Nature of bottom. fine sand

Dredging instrument used. 7 foot beam trawl

Direction of drift, S. x E 1/2 E.; distance, 1/2 mile

Temperature of air. 58° F therm. No., 7397

" of surface water. 58° C

" at depth of \_\_\_\_\_ fathoms, \_\_\_\_\_

" at bottom. 58° C

Density at surface. 1.008 temp., 13° C

" at depth of \_\_\_\_\_ fathoms, \_\_\_\_\_

" at bottom. 1.018 .. 13° C

Number of salinometer, super 7301  
7302

Barometer reading. 30.33

State of sky. Clear blue

Direction of wind. North; force, 2

Rain. no

Direction of surface current, S. x E 1/2 E.; force, .3 knots

" of bottom " : force, \_\_\_\_\_

Name of vessel U.S. F.B.S. 100

Service to which attached. W. I. S. mission

Name and rank of commanding officer, \_\_\_\_\_

Name and position of observer. W. M. ...  
...

NOTES RELATING TO STATION NO.

5

Put bucket down near  
Sta. H and pulled net to  
current 2 ft. depth (5)  
when we had the following  
contents

Wasp Several kinds of *Thalassia*

1 *Squilla*

2 *...*

1 *Balanus*

1 *...*

...

...

...

## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 6 1933  
 Date, Oct 28 1933  
 Time of day, 11.15 am; of tide, low  
 Locality, Br. West River P.I.  
 Exact position, Sacramento St. at H. NW  $\frac{1}{4}$  N  
42 miles Nag.  
 Depth, 74  
 Nature of bottom, fine sand  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, E; distance, 1/2 mi  
 Temperature of air, 54 therm. No., 7307  
 " of surface water, 13.5 "  
 " at depth of      fathoms, "  
 " at bottom, 14 "  
 Density at surface, 1.007 temp., 13.5  
 " at depth of      fathoms, "  
 " at bottom, 217 "  
cupful 7301  
 Number of salinometer, 12110  
 Barometer reading, 30.33  
 State of sky, partly clear  
 Direction of wind, with; force, 2  
 Rain, no  
 Direction of surface current, S. E.; force, 4 knots  
 " of bottom " " ; force, "  
 Name of vessel, U.S. Fish Com.  
 Service to which attached, U.S. Fish Com.  
 Name and rank of commanding officer, Dr. J. H. ...  
U.S. Fish Com.  
 Name and position of observer, W. H. ...

NOTES RELATING TO STATION NO.

Put branch down near Sta 5  
and drifted into current  
to the station 6, where  
up. The branch contained

Very common

small green  
small brown

2 Pairs of small birds

1 bird in tree

2-3 birds in tree

1 small bird in tree

# RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 7 / 1930

Date, Dec 29 1930

Time of day, 11:35 ; of tide, Low

Locality, Providence River R. I.

Exact position, Jullus Pt. S.W. of E & W  
300 ft. W. of

Depth, 31.5

Nature of bottom, Sand

Dredging instrument used, Dredge

Direction of drift, SE ; distance, 3/16

Temperature of air, 56 therm. No., 7090

" of surface water, 52

" at depth of 10 fathoms, 52

" at bottom, 52

Density at surface, 1.022 temp., 52

" at depth of 10 fathoms, 52

" at bottom, 1.022

Number of salinometer, 1000

Barometer reading, 30.0

State of sky, Partly Cloudy

Direction of wind, North ; force, 2

Rain, No

Direction of surface current, SE : force, 1 1/2

" of bottom " : force, 1 1/2

Name of vessel, U.S. Fish Com. Steamer

Service to which attached, U.S. Fish Com.

Name and rank of commanding officer, Comdr. J. H. ...

Name and position of observer, ...



# RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 8 1935  
 Date, Oct. 28/98  
 Time of day, 7.55 PM; of tide, High  
 Locality, Red.  
 Exact position, Graincut Pt. at Ho.  
7000 x N 1 1/2 miles Nag.  
 Depth, 4 to 6 fms.  
 Nature of bottom, Mud  
 Dredging instrument used, 7ft. beam trawl  
 Direction of drift, SE; distance, 1/2  
 Temperature of air, 57.6 therm. No., 7397  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, 13. "  
 Density at surface, 1.020 temp., 15.5  
 " at depth of fathoms, " "  
 " at bottom, 1.025 .. 13.  
 Number of salinometer, 7049  
 Barometer reading, 30.0  
 State of sky, Cloudy  
 Direction of wind, SE; force, 3  
 Rain, No -  
 Direction of surface current, " : force, 3 knots  
 " of bottom " " ; force, "  
 Name of vessel, U. S. Fish Com. Fish Hawk  
 Service to which attached, U. S. Fish Com.  
 Name and rank of commanding officer, J. H. ...  
 Name and position of observer, ...



NOTES RELATING TO STATION NO. 6

- 1 *Large Squilla* -
- 2 *Raja cinnabae* -
- 3 *Callinectes* -
- 2 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

1 *Stomatopoda* -

# RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 9 . 1936  
 Date, Feb 25 1936  
 Time of day, 3.55 PM of tide, 4<sup>th</sup> hr. of flood  
 Locality, 7 miles N. of Cape Cod Rd  
 Exact position, Conamicut det. dt. H.  
76° W ± W 2 1/4 miles N. of  
 Depth, 3 1/2 to 4 1/2 fms.  
 Nature of bottom, fine sand  
 Dredging instrument used, 7 ft beam trawl  
 Direction of drift, S. S. E ; distance, 1/2 mi.  
 Temperature of air, 50° F therm. No., 757  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.019 temp., 13.5° C  
 " at depth of fathoms, " "  
 " at bottom, 1.020 " 13° C  
 Number of salinometer, 751  
 Barometer reading, 30.50  
 State of sky, Partly cloudy  
 Direction of wind, S. S. E ; force, 1  
 Rain, None  
 Direction of surface current, Drift ; force, 3 knots  
 " of bottom " " : force, " "  
 Name of vessel, U.S. Fish Com.  
 Service to which attached, U.S. Fish Com.  
 Name and rank of commanding officer, W. G. Brown  
 Name and position of observer, D. M. Williams

NOTES RELATING TO STATION NO. 9

*Stomatopoda*  
*Cancer Irroratus*

*Squilla pulchra*

*Libinia emarginata*

*Crangon vulgaris*

*Alpheidae*

*Tritia trivittata*

*Cerastulus*

*Alpheidae*

*Alpheidae*

## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 10

1937

Date, Oct 21

Time of day, 11-am

; of tide, 3 hours ebb.

Locality.

Exact position,

~~10 miles distant from~~

Depth, 15 fathoms

Nature of bottom, mud &amp; sand

Dredging instrument used, 1/2 beam trawl

Direction of drift, S x W

; distance, 1/2 mile

Temperature of air, 57

therm. No., 7397

" of surface water.

" at depth of fathoms.

" at bottom,

Density at surface, 1.024

temp., 12.6°

" at depth of fathoms,

" at bottom, 1.024

.. 13.0°

Number of salinometer, 7104

Barometer reading, 29.77

State of sky, Clear blue &amp; cloudy

Direction of wind, N. E.

; force, 4

Rain, No -

Direction of surface current, S. S. W.

; force, 3/10

" of bottom

; force,

Name of vessel, U. S. Fish Hawk

Service to which attached, Fish Commission

Name and rank of commanding officer, Lt. Comdr.

Name and position of observer, J. G. Williams

Pharmacist, U. S. Navy

NOTES RELATING TO STATION NO.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

## RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 11<sup>th</sup> 1938  
 Date. Oct. 21 - 1898  
 Time of day. 11.20<sup>Am.</sup> : of tide, 3 hrs. 20 m of ebb.  
 Locality. Narragansett Bay  
 Exact position. Beaver tail light, N.E. 2 1/2 m.  
~~1.12 mag~~  
 Depth. 12 fathoms  
 Nature of bottom. Sand  
 Dredging instrument used. 10' low beam trawl.  
 Direction of drift, N. 3/4 N. : distance, 1/2 mile  
 Temperature of air, 53° Fahr. therm. No., 7297  
 " of surface water, ..  
 " at depth of fathoms, ..  
 " at bottom, ..  
 Density at surface, 1.022 temp., 12.7°  
 " at depth of fathoms, ..  
 " at bottom, 1.024 " 13.4°  
 Number of salinometer. beta obs. 7100  
 Barometer reading. 29.77  
 State of sky. blue cloudy  
 Direction of wind. N. W. : force, 4  
 Rain, no  
 Direction of surface current, N. E. : force, 3/10  
 " of bottom " : force, ..  
 Name of vessel, U. S. Fish Comm. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Lt. Comdr.  
 K. G. Swasey, U.S.N.  
 Name and position of observer,  
 J. D. Helleman  
 Member



# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 12 1939  
 Date, Oct. 31 - 1898  
 Time of day, 12.05 PM : of tide, 4 hours abt.  
 Locality, Massachusetts Bay  
 Exact position Beacon Hill Light, N.E. 2.37  
~~Mag. 12 miles~~  
 Depth, 17 fathoms  
 Nature of bottom, Sand  
 Dredging instrument used, 10 feet beam trawl  
 Direction of drift, P. N. 1/2 E. ; distance, 3/8 of mile  
 Temperature of air, 53 Fahr. therm. No., 7397  
 " of surface water, ..  
 " at depth of .. fathoms, ..  
 " at bottom, ..  
 Density at surface, 1.022 temp., 13.4  
 " at depth of .. fathoms, ..  
 " at bottom, 1.023 .. 13.6  
 Number of salinometer, with obs 7102  
 Barometer reading, 29.74  
 State of sky, Cloudy  
 Direction of wind, N. W. : force, 4  
 Rain, No  
 Direction of surface current, 0.00 : force, 3/10  
 " of bottom " : force  
 Name of vessel, U. S. F. C. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, J. Couder,  
R. M. Sawyer, U. S. Navy.  
 Name and position of observer,

J. M. Sullivan  
Thomson's Navy



NOTES RELATING TO STATION NO. 12

- 27 Russell's Lake
- about 200 yds. from shore
- 4 *Hydrobia ulina*
- 1 *Hydrobia ulina*
- 1 large shell
- 4 shells
- 15 small shells
- 1 *Hydrobia ulina*
- 3 *Hydrobia ulina*
- 2 *Hydrobia ulina*
- 2 *Caracis ~~isotrochus~~ borealis*
- 3 " " "
- 1 blue shell
- 2 large shells
- 5 small shells
- Some slip shells
- 1 young sea slug
- 3 *Tritia*
- Hydrobia
- 3 *Hydrobia ulina*
- 4 *Hydrobia ulina*
- 1 *Hydrobia ulina*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 13 1900  
 Date, Oct. 31 - 1898  
 Time of day, 1:35 pm of tide. 5 1/2 hours past  
 Locality, 7th Street  
 Exact position, between 7th and 8th 2.7  
~~mag. -~~  
 Depth, 99 fms  
 Nature of bottom, fine sand  
 Dredging instrument used, 5 ft beam trawl  
 Direction of drift, E x N : distance, 1/2 mile  
 Temperature of air, 56 therm. No., 7357  
 " of surface water, " "  
 " at ~~depth of~~ fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.022 temp., 15  
 " at ~~depth of~~ fathoms, " "  
 " at bottom, 1.024 " 14 1/2  
 Number of salinometer, 7102  
 Barometer reading, 29.78  
 State of sky, B'ce - cloudy  
 Direction of wind, N. N. W : force, 4  
 Rain, No  
 Direction of surface current, P. O. W : force, 2/10  
 " of bottom " : force, "  
 Name of vessel, U. S. Fish Comm.  
 Service to which attached, Fish Comm.  
 Name and rank of commanding officer, Dr. Comdr.  
R. E. Davenport  
 Name and position of observer, J. B. McIlhenny  
Phosphate Miner

NOTES RELATING TO STATION NO. 13

1 young eusk -

1 *...*

1 *...*

17 *...*

1 *...*

1 *...*

1 *...*

1 *...*

*Nucleus*

1 *...*

1 *...*

1 *...*

few *...*

few *...*

1 *...*

1 *...*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *14 - 1901*  
 Date, *Oct 21 - 1897*  
 Time of day, *9, 20 pm*; of tide, *low water*  
 Locality, *Massachusetts Bay*  
 Exact position, *N. 54° W. 3.25 miles*  
~~*Mag. N. 54° W. 4 miles*~~  
 Depth, *19.4 fathoms*  
 Nature of bottom, *fine sand*  
 Dredging instrument used, *10 ft beam trawl*  
 Direction of drift *N. 54° W.*; distance, *1/2 mile*  
 Temperature of air, *55 Fahr* therm. No. *71*  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, *1.027* temp., *13.1°*  
 " at depth of fathoms, " "  
 " at bottom, *1.0235* " *13.3°*  
 Number of salinometer, *both obs, 7104*  
 Barometer reading, *29.76*  
 State of sky, *Blue - Cloudy*  
 Direction of wind, *N. N. W.*; force, *1*  
 Rain, *None*  
 Direction of surface current, *0*; force, *0*  
 " of bottom " " : force, "  
 Name of vessel, *U.S.S. Fish Hawk*  
 Service to which attached, *U.S. Fish Commission*  
 Name and rank of commanding officer, *John D. Sigsbee, Lt. Comdr.*  
 Name and position of observer, *W. H. C. ...*

NOTES RELATING TO STATION NO. 14

- 47 *Amphipoda* - *Tubificoides*
- 1 *Isopoda* - *Exochoneura*
- 1 *Amphipoda* - *Hyalella*
- 1 shrimp - red striated
- 1 small white larva
- 1 *Amphipoda* - *Hyalella*
- 1 *Amphipoda* - *Hyalella*
- 1 *Amphipoda* - *Hyalella*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 15 - 1902  
 Date, Oct. 31 - 1902  
 Time of day, 3.00 : of tide, 3/4 low flood  
 Locality, Narragansett Bay  
 Exact position, 7 1/2 miles S.W. of Narragansett Pt. # 1.62  
 Depth, 13 1/2 fms. (Mag)  
 Nature of bottom, Hard sand  
 Dredging instrument used, 10 ft beam trawl  
 Direction of drift, N. by E. ; distance, 1/2 mile  
 Temperature of air, 54 therm. No., 7067  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.022 temp., 13.5  
 " ~~at depth of~~ fathoms, " "  
 " at bottom, 1.0235 " 13.5  
 Number of salinometer, 7104  
 Barometer reading, 29.78  
 State of sky, Blue & cloudy  
 Direction of wind, N. W. ; force, 4  
 Rain, No -  
 Direction of surface current, N. E. ; force, 1/10  
 " of bottom " : force,  
 Name of vessel, U.S.S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Lt. R. H. Thompson  
 Name and position of observer, J. H. ...

NOTES RELATING TO STATION NO. 15

- 1 white stone corals, etc.
- 1 ~~Cancer~~ Penaeus, large
- 3 Penaeus
- 1 empty egg case
- 2 small shells
- 1 small shell
- 1 small base - 17
- 6 red striped shrimp
- 1 Penaeus
- 1 very large Penaeus
- 2 small Penaeus (small)
- 4 Penaeus
- 2 Penaeus

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 10 - 1903

Date, Oct 3, 1903

Time of day, 3:50 P.M. of tide, 1/2 hour, flood

Locality, Narragansett Bay

Exact position, 1/2 mile north of Narragansett Pt. Light  
~~1/2 mile north of Narragansett Pt. Light~~

Depth, 68 fms.

Nature of bottom, M. S. M.

Dredging instrument used, 16 ft. beam trawl

Direction of drift, S. 10° E. distance, 1/2 mile

Temperature of air, 54 therm. No., 2597

" of surface water, "

" at depth of fathoms, "

" at bottom, "

Density at surface, 1.024 temp., 15°

" at depth of fathoms, "

" at bottom, 1.025 13.1

Number of salinometer, 7104

Barometer reading, 29.74

State of sky, Blue - cloudy

Direction of wind, N. N. W. ; force, 2

Rain, No

Direction of surface current, N E ; force, 2

" of bottom " ; force,

Name of vessel, U. S. Fish Com. Steamer

Service to which attached, Fish Commission

Name and rank of commanding officer, Lt. Comdr.

Name and position of observer,

*[Handwritten signature and name]*



NOTES RELATING TO STATION NO. 16

16

- 1. [Faint handwritten text]
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The 10 fms tow Trawl was badly torn & disabled during this haul. Apparently by rocks.

643

## RECORD OF DREDGING.

### TEMPERATURE AND DENSITY.

Station No. 17 — 1904  
 Date, July 1, 1904  
 Time of day, 9:15 am. : of tide. 1/2 hour of ebb,  
 Locality, Entrance to Little Neck Sound  
 Exact position, 1/2 mi. light N. by E. 1/2 S. 1/2 mi. made  
~~1/2 mi. light N. by E. 1/2 S. 1/2 mi.~~  
 Depth, 7 1/2 fms.  
 Nature of bottom,   
 Dredging instrument used,   
 Direction of drift, ; distance, 3/4  
 Temperature of air, therm. No.,  
 " of surface water, "  
 " at depth of fathoms, "  
 " at bottom, "  
 Density at surface, 1.022 temp., 12.9  
 " at depth of fathoms, "  
 " at bottom, 1.0225 " 50  
 Number of salinometer, 7104  
 Barometer reading, 30.2  
 State of sky,   
 Direction of wind, ; force, 4  
 Rain,   
 Direction of surface current, N : force, 3  
 " of bottom " : force,  
 Name of vessel,   
 Service to which attached,   
 Name and rank of commanding officer,   
 Name and position of observer,



## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 18 — 1945  
 Date, July 15, 1945  
 Time of day, 9:45 am : of tide, 1/2  
 Locality, Entrance Bethel Sound  
 Exact position, Point light N. E. 2.7  
~~Block light North light, 6 1/2 miles~~  
 Depth, 13 fathoms  
 Nature of bottom, Rock & sand  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, N. x E. : distance, 5/8  
 Temperature of air, 53° Fahr therm. No. 7397  
 " of surface water, "  
 " at depth of fathoms, "  
 " at bottom, "  
 Density at surface, 1.023 temp., 14.9°C  
 " at depth of fathoms, "  
 " at bottom, 1.024 .. 13.1°C  
 Number of salinometer, 7104  
 Barometer reading, 30.25  
 State of sky, Clear blue.  
 Direction of wind, N. N. W. ; force, ✓  
 Rain, no —  
 Direction of surface current, N. : force, 1 knot  
 " of bottom " : force,  
 Name of vessel,  
 Service to which attached,  
 Name and rank of commanding officer,  
 Name and position of observer,

NOTES RELATING TO STATION NO. 78

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# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 19 — 966  
 Date. Nov. 15 / 1897  
 Time of day, 10.20 <sup>am</sup> ; of tide. low  
 Locality. Entrance to Bl. Sea Canal  
 Exact position. at the end of the canal  


---

 Depth. 3 fathoms  
 Nature of bottom. Sand - mud  
 Dredging instrument used. 7 foot beam trawl  
 Direction of drift, N. N. W. ; distance. 1/2 mile  
 Temperature of air. 57 therm. No. 7597  
 " of surface water. " "  
 " at depth of  fathoms. " "  
 " at bottom. " "  
 Density at surface. 1.023 temp., 13.5  
 " at depth of  fathoms. " "  
 " at bottom, 1.024 " 13.5<sup>2</sup>  
 Number of salinometer, 7104  
 Barometer reading. 30.26  
 State of sky. Clear blue  
 Direction of wind, N. N. W. ; force. 1  
 Rain, No.  
 Direction of surface current, W ; force. 1  
 " of bottom " " ; force. " "  
 Name of vessel, U. S. Fish Com. Steamer  
 Service to which attached, U. S. Fish Com.  
 Name and rank of commanding officer, Comdr. R. C. ...  
 Name and position of observer, ...

NOTES RELATING TO STATION NO. 19

*Murchisonia* ...  
 a few *Yucca* ...  
*Siphonaria* ...  
*Hydrobia* ...  
*Anomia* ...  
*Thyridina* ...  
 a few *Siphonaria* ...  
*Anomia* ...  
*Cyprina* ...  
 one or two ...  
*Siphonaria* ...  
 " ...  
*Dicathema* ...  
 with *Siphonaria* attached  
*Phidippus* ...  
*Gastropoda* ...  
 A few *Idotea* ...  
*E. longicauda* ...  
 Small pieces of *Laurencia* ...  
 A few eggs of *Adiantum* ...  
*Siphonaria* ...  
*Bryozoa* ...

The bottom is rough -

RECORD OF DREDGING,  
TEMPERATURE AND DENSITY.

Station No. 20 - 1947  
 Date, Nov. 1<sup>st</sup> 1898  
 Time of day, 10:00 : of tide, 2 hours  
 Locality, Entrance to Chesapeake Bay  
 Exact position, 4.7 miles N. of Annapolis  
~~Depth, 22 fathoms~~  
 Depth, 22 fathoms  
 Nature of bottom, Muddy  
 Dredging instrument used, Small dredge  
 Direction of drift, S. 1/4 W ; distance, 1/2 mile  
 Temperature of air, 52 therm. No., 7397  
 " of surface water, 1.023  
 " at depth of fathoms, "  
 " at bottom, 57.0  
 Density at surface, 1.023 temp., 13.7°C  
 " at depth of fathoms, "  
 " at bottom, 1.024 .. 13.6°C  
 Number of salinometer, 7104  
 Barometer reading, 30.26  
 State of sky, Clear blue  
 Direction of wind, N. N. W ; force, 1  
 Rain, No -  
 Direction of surface current, W. ; force, 1 knot  
 " of bottom " ; force, "  
 Name of vessel, U. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Lt. Comdr.  
 R. R. Scarborough, USN  
 Name and position of observer, J. D. Milligan,  
 Lieutenant





# RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 21 - 1948  
 Date, Nov. 1<sup>st</sup> 1898  
 Time of day, 11-4 AM; of tide, 3 hours ebb  
 Locality, Entrance to Green Bay, Wis.  
 Exact position, 1/2 mile N. of N. W. corner of  
Block Island North Light 1/2 mile S. of N. W. corner of  
2 1/2 miles N. of  
 Depth, 2 1/2 fathoms  
 Nature of bottom,  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, N. x W.; distance, 1/2 mile  
 Temperature of air, 55° Fahren. therm. No., 7397  
 " of surface water,  
 " at depth of fathoms,  
 " at bottom, 56.5° Fahren. Thermite  
 Density at surface, 1.023 temp., 13° C  
 " at depth of fathoms,  
 " at bottom, (Dredge temp.) 10.0° C .. 13° C  
 Number of salinometer, 7104  
 Barometer reading, 30.24  
 State of sky, Clear blue  
 Direction of wind, N; force, 1  
 Rain, No -  
 Direction of surface current, W.; force, 1 hour  
 " of bottom " : force.  
 Name of vessel, U. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Lt. Comdr  
T. H. Harcourt  
 Name and position of observer, J. P. Helleger  
Pharmacist U.S.N.

NOTES RELATING TO STATION NO. 2.

Black base of substrate compact  
 E. Roub. ...

... membranes

- a number of ...
- a few ...
- a few ...
- a young ...
- a ...

a ...  
 1 young ...  
 Some ...  
 2 small ...

1 ...  
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 1 small ...

Few ...  
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Several ...

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *22 - 1909*  
 Date, *Nov. 1 '98*  
 Time of day, *1.10* : of tide, *about 4/5 low tide*  
 Locality, *East of ... Island*  
 Exact position, *Blue Bell ... to ...*  
<sup>miles</sup>  
<sup>mag.</sup> *3.5*  
 Depth, *22 fathoms*  
 Nature of bottom, *Muddy ...*  
 Dredging instrument used, *7 ...*  
 Direction of drift, *N. N. E.* : distance, *1/2 mile*  
 Temperature of air, *54° F.* therm. No., *7252*  
 " of surface water, " "  
 " at depth of ~~5~~ fathoms, " "  
 " at bottom, *56° ...*  
 Density at surface, *1.023* temp., *13.1°*  
 " at depth of ~~5~~ fathoms, " "  
 " at bottom, *Dipther cup. 1.023* .. *13.2°*  
 Number of salinometer, *7102*  
 Barometer reading, *30.23*  
 State of sky, *Blue - light haze*  
 Direction of wind, *N.* ; force, *2*  
 Rain, *No -*  
 Direction of surface current, *N.* : force, *1 knot*  
 " of bottom " : force, "  
 Name of vessel, *U.S. Fish Com.*  
 Service to which attached, *Fish Com.*  
 Name and rank of commanding officer, *J. H. ...*  
 Name and position of observer, *Pharmacist*



## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. *23 - 1950*  
 Date, *Nov. 1 - 1950*  
 Time of day, *2:00 pm*; of tide, *low*  
 Locality, *East of Black Island*  
 Exact position, ~~*Black Island, 1/2 mile N. of ...*~~ *1/2 mile N. of ...*  
 Depth, *20 fathoms*  
 Nature of bottom, *Hard sand*  
 Dredging instrument used, *7 foot beam trawl*  
 Direction of drift, *N. by E*; distance, *1 mile*  
 Temperature of air, *53°* therm. No., *7397*  
 " of surface water, ~~*53°*~~  
 " at depth of ~~*20*~~ fathoms, *56*  
 " at bottom, *56 fathoms*  
 Density at surface, *1.023* temp., *13.1°*  
 " at depth of ~~*20*~~ fathoms, *1.025*  
 " at bottom, *1.025*  
 Number of salinometer, *7104*  
 Barometer reading, *30.2*  
 State of sky, *Blue - light haze*  
 Direction of wind, *N.*; force, *2*  
 Rain, *No*  
 Direction of surface current, *N.*; force, *1 knot*  
 " of bottom " " : force,  
 Name of vessel, *U.S. Fish Com. Fish Hawk*  
 Service to which attached, *U.S. Fish Com.*  
 Name and rank of commanding officer, *W. H. ...*  
 Name and position of observer, *W. H. ...*



# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 24 - 1951  
 Date, Nov 15 1898  
 Time of day, 2.40 p.m. : of tide, low water  
 Locality, Off Cape Cod  
 Exact position, 1.6 miles S. E. of St. H. mag  
~~.....~~  
 Depth, 16  
 Nature of bottom, Sand - Mud  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, 0, N. by E ; distance, 3/4 mile  
 Temperature of air, 51° Fahr. therm. No., 7397  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, 56.5 Negrette  
 Density at surface, 1.023 temp. 17.9°  
 " at depth of fathoms, " "  
 " at bottom, 1.023 temp. 17.9°  
 Number of salinometer, 7104  
 Barometer reading, 30.23  
 State of sky, blue, light haze  
 Direction of wind, N. ; force, ✓  
 Rain, no  
 Direction of surface current, 0 : force, 0  
 " of bottom " : force.  
 Name of vessel, U. S. Fish Com. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, R. W. ...  
 Name and position of observer, ...



NOTES RELATING TO STATION NO. 27

1. *Junco hyemalis*

2. *Passer domesticus*

3. *Corvus corax*

4. *Urocyon v. v.*

5. *Canis lupus*

6. *Lepus sylvaticus*

7. *Sciurus h. h.*

8. *Mus mus*

9. *Rattus norvegicus*

10. *Microtus pennsylvanicus*

11. *Citellus richardsoni*

12. *Sorex araneus*

13. *Thomomys talpae*

14. *Peromyscus leucopus*

15. *Reithrodontomys*

16. *Dipodomys*

17. *Onychomys*

18. *Neotoma*

19. *Perognathus*

20. *Chondestes*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 25 - 1904

Date, Feb 21

Time of day, 3.30 ; of tide, 1 hour of flood

Locality, Port of ...

Exact position, NE 1/2 2.75 miles mag.

Depth, 13 fathoms

Nature of bottom, Gravelly

Dredging instrument used, Hand dredge

Direction of drift, S. by E ; distance, 3/4 mile

Temperature of air, 50 Fahr therm. No. 5377

~~“ of surface water.~~

~~“ at depth of fathoms.~~

~~“ at bottom.~~

Density at surface, 1.023 temp., 12.7°

“ at depth of fathoms, “

“ at bottom, 1.025 “ 12.7°

Number of salinometer, 7104

Barometer reading, 30.35

State of sky, Clear light

Direction of wind, N. ; force, 4

Rain, 0

Direction of surface current, Ref. ... ; force, ...

“ of bottom “ ; force.

Name of vessel, ...

Service to which attached, ...

Name and rank of commanding officer, ...

Name and position of observer, ...

NOTES RELATING TO STATION NO. 25-

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## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. *26* - *1953*  
 Date, *Nov. 2<sup>nd</sup> 1896*  
 Time of day, *10 am.*; of tide, *3/4<sup>th</sup> of ebb*  
 Locality, *Narragansett Bay*  
 Exact position, *Inter State light, 3 x 11.*  
*Dist. 67 of a mile mag.*  
 Depth, *7<sup>1/2</sup> fathoms,*  
 Nature of bottom, *fine sand, silt*  
 Dredging instrument used, *7 ft beam trawl,*  
 Direction of drift, *E x S.*; distance, *1/2 mile mag.*  
 Temperature of air, *56<sup>o</sup> Fahr.* therm. No., *7397*  
 " of surface water, " "  
 " at depth of " fathoms, " "  
 " at bottom, " "  
 Density at surface, *1.024* temp., *12.7<sup>o</sup>*  
 " at depth of " fathoms, " "  
 " at bottom, *1.026* .. *13.0<sup>o</sup>*  
 Number of salinometer, *7104*  
 Barometer reading, *30.17*  
 State of sky, *Blue - clouds*  
 Direction of wind, *N x W.*; force, *5*  
 Rain, *No*  
 Direction of surface current, *N x W.*; force, *1/4 knot*  
 " of bottom " " force,  
 Name of vessel, *U. S. F. C. Fish Hawk*  
 Service to which attached, *Fish Commission*  
 Name and rank of commanding officer, *Dr. Comdr.*  
*R. G. Brewster* *W. H. W.*  
 Name and position of observer,  
*J. D. Milligan*  
*Phar. U.S.N.*



Blick

643

RECORD OF DREDGING,  
TEMPERATURE AND DENSITY.

Station No. 27 - 1956  
Date, Nov. 2 - 1898

Time of day, 10.18 AM : of tide, 1/2 hour of ebb

Locality, Moon's Bay, N. Y.

Exact position, Dutch Field light S 11 x 6

1/4 South - dist. 1 1/4 miles mag.

Depth, 10 1/2 fathoms

Nature of bottom, Rocky, sh. cor.

Dredging instrument used, 7 feet beam trawl

Direction of drift, E x S : distance, 1/2 mile

Temperature of air, 56° Fahr therm. No., 7397

" of surface water, ..

" at depth of .. fathoms, ..

" at bottom, ..

Density at surface, 1.022 temp., 17.5°

" at depth of .. fathoms, ..

" at bottom, 1.022 .. 13.0°

Number of salinometer, 7104

Barometer reading, 30.17

State of sky, Blue, cloudy

Direction of wind, N W. ; force, 5

Rain, no

Direction of surface current, Drift : force, 1/2 mile

" of bottom .. : force, ..

Name of vessel, U.S.F.C.S. Fish Hawk

Service to which attached, Fish Commission

Name and rank of commanding officer, Lt. Comdr

R. G. Sawney, USN

Name and position of observer, J. D. Milligan, Pharmacist, USN

Cinders - dead nutty lvs shells

Scapula. Shelly

Few small amphipods

Few lepidonotus

Few Tritia

E. longicauda

1 Microciona

Chrysaora vul

Panopaea

Euscalpinus

♀ Sta. ... (part) with small

capitate fluke

1 Cluopneustes

Few dead ... Crapulella ...

... canuta convexa

Egg string of Sycetypus with ...

Few small amphipods

Oax leaf Heteropoda

Panopaea

Heteromysis from ...

in dead ... Sycetypus

## RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 28 - 1955  
 Date, Nov. 2 - 1898  
 Time of day, 10.45 AM of tide, 1/2 h. of ebb  
 Locality, Mans. County, Ind.  
 Exact position, Dutch Lake Light, 2.67 miles away.  
 Depth, 9 fathoms  
 Nature of bottom, Mud - silt  
 Dredging instrument used, 7' beam trawl  
 Direction of drift, E by S, distance, 1/2 mile  
 Temperature of air, 56° Fahr. therm. No., 7397  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.021 temp., 17.5  
 " at depth of fathoms, " "  
 " at bottom, 1.027 " 13.0  
 Number of salinometer, 7104  
 Barometer reading, 30.16  
 State of sky, Cloudy  
 Direction of wind, N by E; force, 6  
 Rain, none  
 Direction of surface current, N by E; force, 1/3 knots  
 " of bottom " force " "  
 Name of vessel, U. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Lieut. Comdr.  
 R. G. ...  
 Name and position of observer, J. D. ...  
 Pharmacist  
 near



NOTES RELATING TO STATION NO. 26

Pages

1-10

11

12-13

14

15-16

17-18

19-20

# RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 29 - 1956  
 Date, Nov. 25 1898  
 Time of day, 11:30 AM : of tide, High water  
 Locality, Narragansett Bay  
 Exact position, Conanicut north of  
 light, N. E. 1/4 E. 1.25 miles west  
 Depth, 7 fathoms  
 Nature of bottom, sandy  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, S. 1/4 N. : distance, 1/2 mile  
 Temperature of air, 57° Fahr. therm. No., 7397  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.021 temp., 17.3  
 " at depth of fathoms, " "  
 " at bottom, 1.023 .. 17.7  
 Number of salinometer, 7104  
 Barometer reading, 30.15  
 State of sky, Clear  
 Direction of wind, R. W. : force, 6  
 Rain, No  
 Direction of surface current, R x W : force, 1/2 knots  
 " of bottom " : force. "  
 Name of vessel, U. S. Fish Hawk  
 Service to which attached, U. S. Commission  
 Name and rank of commanding officer, Lt. Comdr  
 H. G. Wainwright  
 Name and position of observer, L. B. Mellor  
 Pharmacist

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 1 small ...  
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## RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 30 — 1957

Date, Nov. 2 - 1957

Time of day, 11:30 am : of the 1st day of the month

Locality, Narragansett Bay, R.I.

Exact position, Convent North Point

light S. E. x E. 1/4 E. 37 fathoms

Depth, 5 fathoms

Nature of bottom, Muddy sand

Dredging instrument used, Dredge

Direction of drift, S. E. x E. 1/4 E. distance, 5/8

Temperature of air, 57° therm. No. 7157

" of surface water, "

" at depth of fathoms, "

" at bottom, "

Density at surface, 1.021 temp., 54.5°

" at depth of fathoms, "

" at bottom, 1.021 .. 13.5°

Number of salinometer, 7104

Barometer reading, 30.157

State of sky, Blue, cloudy

Direction of wind, P. W. ; force, 6

Rain, NO -

Direction of surface current, D x W ; force, 1/2 knot

" of bottom " ; force.

Name of vessel, U.S.F.C. Fish Hawk

Service to which attached, Fish Commission

Name and rank of commanding officer, Lt. Comdr.

Name and position of observer, R. L. ...

Name and position of observer, ...



## RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 31 - 1958  
 Date, Nov. 20 1898  
 Time of day, 1.30 pm. ; of tide, 3/4 of ebb  
 Locality, Harb. entrance, 1/2 way  
 Exact position, 1/2 way between East North  
 point, N. x E. S. D. - 1.37 miles long.  
 Depth, 5 fathoms  
 Nature of bottom, Muddy  
 Dredging instrument used, 7 ft beam trawl  
 Direction of drift, S. E. x E. 1/4 E. Distance, 1/2 miles  
 Temperature of air, 56° Fahr. therm. No., 7397  
 " of surface water, "  
 " at depth of fathoms, "  
 " at bottom, "  
 Density at surface, 1.020 temp., 14.1°  
 " at depth of fathoms, "  
 " at bottom, 1.025 .. 12.7°  
 Number of salinometer, 7104  
 Barometer reading, 30.06  
 State of sky, Blue Cloudy  
 Direction of wind, S. W. ; force, 6  
 Rain, No  
 Direction of surface current, S x W ; force, 1/2 knot  
 " of bottom " ; force.  
 Name of vessel, U. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Lt. Comdr  
 R. H. ...  
 Name and position of observer,  
 J. ...  
 ...

NOTES RELATING TO STATION NO. 31

- ✓ *Antennaria floridensis*
- 1 *Hemiphragma*
- 1 *Sagittaria latifolia*
- 1 very small ..
- 5 small white hake
- 1 *Longicaulis*
- 2 *Peltandra*
- + 60 *Stachys* (various) 2<sup>m</sup> to 5<sup>m</sup> various small
- Calceola*
- Adiantum*
- Clidias*
- Asplenium*
- Woodsia*
- 1 " *Stachys*
- 2 *Asplenium*
- 1 Small white hake
- Candollea*
- Mercuria*
- Some *Woodsia*
- Rhynchospora*
- 1 *Asplenium*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. *32 - 1959*

Date, *Nov. 2 - 1898*

Time of day, *1:50 pm.*; of tide, *ebb*

Locality, *Hammerhead Bay*

Exact position, *Andrews Point*

*light S. 10. 1/2 W. 2 1/2 miles*

Depth, *5 fathoms*

Nature of bottom, *shelly shelly*

Dredging instrument used, *7 ft beam trawl*

Direction of drift, *E x S.*, distance, *1/2 mile*

Temperature of air, *56 Fahr.*, therm. No., *7197*

" of surface water, "  
" at depth of fathoms, "  
" at bottom, "

Density at surface, *1.022*, temp., *14.5*

" at depth of fathoms, "

" at bottom, *1.024*, *14.6*

Number of salinometer, *7102*

Barometer reading, *30.27*

State of sky, *B. - C.*

Direction of wind, *N. W.*; force, *7*

Rain, *no*

Direction of surface current, *N x W.*; force, *1/2 knot*

~~of bottom~~; force,

Name of vessel, *U.S.C. Fish Hawk*

Service to which attached, *Fish Com.*

Name and rank of commanding officer, *Dr. Brewster*

*R. G. Sarsaparilla*

Name and position of observer, *W. H. ...*





# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 33 - 1060  
 Date. Nov 27 1888  
 Time of day. 4.20 pm : of tide. 1/2 from of ebb  
 Locality. Narragansett Bay  
 Exact position. Cranicut North from  
 Light 70 ft. 2.67 fathoms  
 Depth. 4 1/2 fathoms  
 Nature of bottom. Muddy  
 Dredging instrument used. Trawl  
 Direction of drift. E. S. E. : distance. 3/4 of mile  
 Temperature of air. 56° Fahren therm. No., 7397  
 " of surface water. " "  
 " at depth of fathoms. " "  
 " at bottom. " "  
 Density at surface. 1.021 temp., 17.5  
~~at depth of fathoms.~~ " "  
 " at bottom. 1.025 .. 17.5  
 Number of salinometer. 7104  
 Barometer reading. 30.07  
 State of sky. Blue, Cloudy  
 Direction of wind. N. W. : force. 7  
 Rain. No  
 Direction of surface current. N x W : force, 1/2 knot  
~~of bottom~~ : force,  
 Name of vessel. U.S. Fish Com. Steamer  
 Service to which attached. Fish Com.  
 Name and rank of commanding officer. R. L. Gardner, Master  
 Name and position of observer. J. M. ...

NOTES RELATING TO STATION NO. 333

- 9/10/1914
  - 3
  - 6
  - 2
  - 1
1. *Syrphoctonus*  
 2. *Chalcid*  
 3. *Chalcid*  
 4. *Chalcid*  
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 100. *Chalcid*

1. *Syrphoctonus*  
 2. *Chalcid*  
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 99. *Chalcid*  
 100. *Chalcid*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 34 - 1961  
 Date. Nov. 25 1898  
 Time of day, 5:00 : of tide, Black-water  
 Locality, Harwich Light Bay  
 Exact position, Harwich Light S. & W. 2.75 miles away.  
 Depth, 4 1/2  
 Nature of bottom, Mud  
 Dredging instrument used, 7 ft. beam trawl  
 Direction of drift, E. x S. : distance, 1/2 mile  
 Temperature of air, 48 therm. No., 7397  
 " of surface water, " "  
 " at depth of 1 fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.021 temp., 12.1°  
 " at depth of 1 fathoms, " "  
 " at bottom, 1.022 " 12.6°  
 Number of salinometer, 738  
 Barometer reading, 30.05  
 State of sky, Blue - sunny  
 Direction of wind, P. W. : force, 7  
 Rain, no  
 Direction of surface current, 0 : force, 0  
 " of bottom " " : force, " "  
 Name of vessel, "  
 Service to which attached, U.S. Fish Commission  
 Name and rank of commanding officer, Al. C. ...  
R. G. ...  
 Name and position of observer, ...  
...



# RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. *35 - - 1962*

Date, *Nov. 2<sup>nd</sup> 1962*

Time of day, *11:00 pm*; of tide, *1/2 hour of low*

Locality, *Narragansett Bay*

Exact position, *South of Isla, Light S, W x S. 1.50 of mile mark*

Depth, *5 fathoms*

Nature of bottom, *Mud*

Dredging instrument used, *Trawl*

Direction of drift, *S. E* distance, *3/4 mile*

Temperature of air, *60.4*, therm. No. *7397*

" of surface water, ..

" at depth of .. fathoms, ..

" at bottom, ..

Density at surface, *1.021* temp., *13.0*

" ~~at depth of .. fathoms,~~ ..

" at bottom, *1.023* .. *13.0*

Number of salinometer, *7102*

Barometer reading, *30.07*

State of sky, *blue - cloudy*

Direction of wind, *S. W*; force, *7*

Rain, *no*

Direction of surface current, *W. N. E*; force, *1/2 knot*

~~of bottom .. : force, ..~~

Name of vessel, *U.S. Fish Boat*

Service to which attached, *U.S. Fish Commission*

Name and rank of commanding officer, *W. J. ...*

Name and position of observer, *J. ...*

NOTES RELATING TO STATION NO. 35

- 1 *...*
- 1 *...*
- about 100 star fish in the tank
- Some orange *...*
- 2 small *...*
- 3 *...*
- Few young *...*
- Several like fish
- Hydractinia* -
- Cnidaria + *...*
- ...*
- Few small anemone
- E. ...*
- Tubaria ...*
- Callula ...*
- Few young silver-hake
- " " *...*
- 1 young *...*
- L. ...*
- ...*
- Few small *...*
- Dyrotyna*
- ...*
- ...*
- ...*
- " " 1 live
- 1-4 *...*
- 1 Egg *...*
- Few *...*
- 1st specimen with small head of *Tubellaria canthonyi*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 36 1963  
 Date, Nov 21 - 1898  
 Time of day, 4.20 pm; of tide, 3/4 hour of flood  
 Locality, Narragansett Bay  
 Exact position, South side light  
0.1/2 S. 50° of mark  
 Depth, 7 fathoms  
 Nature of bottom, Mud  
 Dredging instrument used, 7 fathoms beam trawl  
 Direction of drift, S. E.; distance, 1/2 of mile  
 Temperature of air, 56° Fahr. therm. No. 5397  
 " of surface water, " "  
 " at depth of \_\_\_\_\_ fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.021 temp., 12.7°  
 " at depth of \_\_\_\_\_ fathoms, " "  
 " at bottom, 1.022 " 13°  
 Number of salinometer, 7104  
 Barometer reading, 30.07  
 State of sky, Cloudy  
 Direction of wind, NW; force, 4  
 Rain, No  
 Direction of surface current, N. N. E.; force, 1/2 mile  
 " of bottom " " ; force, " "  
 Name of vessel, U. S. Fish Com. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, R. S. ...  
 Name and position of observer, J. ...





# RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. *37 - 1964*

Date, *Nov 13 - 48*

Time of day, *9:30 AM* ; of tide, *Nearly low water*

Locality, *Entrance to Lake Superior*

Exact position, *Block 250 to 251 light*  
*N 75 E. 2.50 mag.*

Depth, *10 fathoms*

Nature of bottom, *Hard - rock & gravel*

Dredging instrument used, *7' lead beam trawl*

Direction of drift, *N x N.* ; distance, *1/2 mile*

Temperature of air, *52° F.* ; therm. No., *1107*

" of surface water, " "

" at depth of fathoms, " "

" at bottom, " "

Density at surface, *1.023* temp., *13.4° C*

~~at depth of fathoms, " "~~

" at bottom, *1.023* .. *13.6° C*

Number of salinometer, *710*

Barometer reading, *30.46*

State of sky, *Blue - light clouds*

Direction of wind, *N. N. E* ; force, *3*

Rain, *No*

Direction of surface current, *E x S* ; force, *1/3 knots*

~~of bottom, " "~~

Name of vessel, *U.S.S. Fish Hawk*

Service to which attached, *U.S. Fish Commission*

Name and rank of commanding officer, *Philo Carpenter*

Name and position of observer, *D. H. Thompson*

\* adv.

NOTES RELATING TO STATION NO. 37

*Acyosium* *cruciatum*, numerous  
small pieces

A few pieces Sulfur sponge  
differs from *Cliona sulphurea*  
1 star. feet. Forbes 3 to 4 1/2 inches  
1/2 inch pink purple star.

1/2 " " " "  
1/2 " " " "  
1 arm of *Stolid* star - Forbes

9 *Cribrella* 1/2" to 2 1/2 inch

1 *Anemone*

Few pieces of *Sargassum* with *Sargassum*

1 fragment of hydroid (?)

1 small small *Callista* *conveya*

1 shell of *L. torquata* with

*E. longicauda*

*Tritia* 2 alive, one

with *E. longicauda*.

1 *Juncate* (?)

Small piece *Ammonium*

*Clidopte.* - 2 dead shells

~~over~~  
all page with this

## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 38 — 1965  
 Date. Nov 25 1898  
 Time of day. 10.10 <sup>am</sup> of tide.  
 Locality, River Fall Church  
 Exact position. Below Island Mt. Co.  
E x S.  
 Depth, 19 fathoms  
 Nature of bottom. fine sand  
 Dredging instrument used. 7 foot beam trawl  
 Direction of drift, N. x D. : distance. 1/2 mile  
 Temperature of air, 52° Fahn therm. No., 7397  
 " of surface water. " "  
 " at depth of  fathoms. " "  
 " at bottom, " "  
 Density at surface. 1.023 temp., 13.6° C  
 " ~~at depth of~~  fathoms, " "  
 " at bottom, 1.023 .. 14.1° C  
 Number of salinometer. 7104  
 Barometer reading. 30.46  
 State of sky. Blue - light clouds  
 Direction of wind, N. N. E : force. 0  
 Rain, No  
 Direction of surface current. N. N. E : force. 1/2 hour  
~~of bottom~~ : force.  
 Name of vessel. U. S. F. C. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer. R. V. Saraport, Captain  
 Name and position of observer. W. H. H. H.

see note in frays book

NOTES RELATING TO STATION NO. 38

- 6 shells *Urosalpinx*
- 9 empty egg shells *Urosalpinx*
- 5 *Urosalpinx* shells
- 2 young *P. Canaliculata*
- 1 large empty shell
- 1 small shell
- 1 " " *Urosalpinx*
- 3 small shells - *Urosalpinx*
- 1 med. + 1 small *Urosalpinx* flower
- 2-18 spine *Urosalpinx*
- Entire a number small *Urosalpinx*
- Pandalus* - common
- 1 large empty shell *Urosalpinx*
- Several large pieces of shell *Urosalpinx*
- Piece of *Urosalpinx* *Urosalpinx*
- Fritill *Urosalpinx* - 1 *Urosalpinx*
- Urosalpinx* 1 dead shell
- Fusus* - 1-
- Few *Urosalpinx* with *Urosalpinx*
- Scrap of *Urosalpinx* & *Urosalpinx*
- Remains *Urosalpinx* *Urosalpinx*
- 1 shell of *Urosalpinx*
- 1 piece *Urosalpinx* (2)
- 1 bottle *Urosalpinx* - small
- About 150 *Urosalpinx* at the station
- 17 *Urosalpinx* *Urosalpinx* *Urosalpinx*
- 1 *Urosalpinx* *Urosalpinx* *Urosalpinx*
- 1 *Urosalpinx* *Urosalpinx* *Urosalpinx*
- 1 *Urosalpinx* *Urosalpinx* *Urosalpinx*
- 1 large empty egg shell of *Urosalpinx*
- Dead stems of *Urosalpinx* *Urosalpinx*

# RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 39 1966  
 Date. Nov 30 1966  
 Time of day. 10.50 am 1/2 hr. of tide. ebb  
 Locality. Black Island Creek  
 Exact position. Black Island north by  
N. E. & E. 7/8 S. 2.25 miles away  
 Depth. 20 fathoms  
 Nature of bottom. Hard, muddy  
 Dredging instrument used. 7 fms beam trawl  
 Direction of drift. W 1/2 N : distance. 3/8 miles  
 Temperature of air. 53° Fahr therm. No. 7277  
 " of surface water. " "  
 " at depth of  fathoms. " "  
 " at bottom. " "  
 Density at surface. 1.023 temp., 13.2°  
 " at depth of  fathoms. " "  
 " at bottom. 1.023 .. 13.5°  
 Number of salinometer, 7104  
 Barometer reading. 30.46  
 State of sky. Blue - light clouds  
 Direction of wind. N. N. E : force. 1  
 Rain. No  
 Direction of surface current. No perceptible : force.  
 " of bottom " " : force.  
 Name of vessel. U.S. Fish Com.  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Lt. Comdr  
R. G. Sawenport, USN  
 Name and position of observer, J. H. McIlhenny  
Phy. & Chem. Lab.

NOTES RELATING TO STATION NO. 39

1 Window pane

2 blue lake, small

20 squirrel holes

30 holes - various

2 small squirrel lake

young sea robin

1 at scup.

1 E. Bernhardtus

*Sporobis*

Few small green archives

Some small squid (dozen)

fragments of *Bel. ...*

1 piece of *Cyprina* shell

Very few *Pandanus*

*Tritia* also with *hemula*

E. *Engaeus* few

*Triton* also with *hemula*

100 small scup (1000 of 10)

7 scup shells of *Lucina florea*

2 or 3 small *holotur*

1 large *conus borealis*

1 small *sp. flounder*

*Crepidula fornicata*

Dead shell of *Cylocardium boreale*

about 200 *... 1702*

Very few small purple "

20 *Triton* etc 1 m x 2 inch

1 small *undulosa* *tridacna*

~~...~~

# RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 40 - 1067  
 Date. Nov. 3<sup>rd</sup> 1897  
 Time of day, 11.30 am : of tide. 1 1/2 hrs. ebb  
 Locality. Black Island Sound  
 Exact position. Black Is. lighthouse  
N. E. 1/2 E. 4.50 miles mag.  
 Depth. 18 fathoms  
 Nature of bottom, Mud  
 Dredging instrument used, 3 ft beam trawl  
 Direction of drift, South : distance, 1/2 mile  
 Temperature of air, 53° Fahr. therm. No., 7097  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.023 temp., 14.8  
 " at depth of fathoms, " "  
 " at bottom, 1.024 .. 13.5  
 Number of salinometer, 7104  
 Barometer reading, 30.46  
 State of sky, Blue - light clouds  
 Direction of wind, N. E. : force, 2  
 Rain, no  
 Direction of surface current, N. W. ; force, 1/2 knot  
 " of bottom " " force, " "  
 Name of vessel, U.S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, St. Louis  
R. H. Sargent, Master  
 Name and position of observer, R. M. Uthman  
Assistant



Few small *Sandalus*

NOTES RELATING TO STATION NO. 40

- 1 *Ammonia floridana* { *Bugula*
- 2 *Agassizella hake* { *Conus cancellatus*
- 2 *Silva hake* { *Lepidocyclone* few
- 1 *Urosalpinx* { *Caprellidae* few
- 1 *Urosalpinx* {
- 1 *Stalioa - erinacea* {
- 1 *Urosalpinx* { *Bothus*
- 3 very small *Silva hake*
- 1 *Urosalpinx*

*Modiola modiolus*

About a doz pieces of long, my. *Lumina*  
re with some attached, *Caprellidae* with  
*Thyozoa* and hydroids. (Abell)

Few small *Caprellidae*

1 empty egg case. *Erinacea* *Thyozoa*  
Algae with *Erinacea* *Thyozoa*

Few *Caprellidae* ten, small 1 *Medusa*

Few stems of *Tubularia* on *Caprellidae*

*Crepidula fornicata*

1 *Cancer irrorata*

About 3 doz *Marstonia* stars

Few very small *Caprellidae*

1 *Pycnogonid*

Fragment of sulphur sponge

6 very small purple stars

2 small *Buccinum*

1 *Cyrtoloba borealis*

Few *E. Longisarpus*

Few *Bornanaria*

Few *Crepidula plana*

2 *Cancer irrorata* small

Few empty shells of *Cyrtoloba borealis*  
*Tritia*, sea clams, *L. tridentata*, *anomia*  
*cruciatulum*, *Modiola modiolus*  
small *Buccinum*, *L. hirs.* Few *Caprellidae*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 41 — 1968  
 Date, Nov. 3<sup>rd</sup> 1898  
 Time of day, 12:25 ; of tide, 3/4 h of ebb  
 Locality, Black Lake  
 Exact position, Black Lake, I. E. light  
E 1/4 Sec. 3-50 miles away  
 Depth, 7 1/4 fathoms  
 Nature of bottom, gravel  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, North ; distance, 1/8 mile  
 Temperature of air, 54° Fahr. therm. No., 7397  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.023 temp., 13.2° C  
 " at depth of fathoms, " "  
 " at bottom, 1.023+ .. 13° C  
 Number of salinometer, 7104  
 Barometer reading, 30.46  
 State of sky, Blue, light clouds  
 Direction of wind, N. E ; force, 1  
 Rain, No  
 Direction of surface current, N. W ; force, 1/2 knot  
 " of bottom " ; force, "  
 Name of vessel, U. S. F. C. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, J. L. ...  
R. C. ...  
 Name and position of observer, ...  
...

NOTES RELATING TO STATION NO. 41

about half a piece of coralline  
and *Ceramium* hydroids.

A little frond.

Some small sponge.

12 small purple stars. 1/2 + 2

2 *Cribrella*.

1 brittle star.

Some small isopod

" " amphipod

*Byozoa*, plentiful

1 small piece of *Alysiomorpha*

a very few small squid.

*Anachis* 1 or 2

*Tritia* 1 or 2

A few astyris.

2 or 3 small mud-branch <sup>*Dorvillea*</sup>

1 *Russell*. *Z. angulatus* (?)

2 *Praxinos*. very small

*Spyrobia* (some)

a few young *Cancer brevis*.

*Altidia* 1 piece

# RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 42 - 1969

Date, Nov. 3 - 1968

Time of day, 1.35 pm; of tide, 3 hours of ebb

Locality, N. East of Black Island

Exact position, Black Is. N.E. light

EX N., 6 miles mag.

Depth, 40 1/4 fathoms

Nature of bottom, Sand, gravelly

Dredging instrument used, 7 foot beam trawl

Direction of drift, N. E x E; distance, 1/2 mile

Temperature of air, 57° F., therm. No., 7097

" of surface water, ..

" at depth of .. fathoms, ..

" at bottom, 56° negative

Density at surface, 1.023, temp., 13.3°

~~" at depth of .. fathoms, ..~~

" at bottom, 1.023, .. 13.2°

Number of salinometer, 7104

Barometer reading, 30.46

State of sky, Blue - light clouds

Direction of wind, S.S.E.; force, 1

Rain, NO

Direction of surface current, E; force, 1/2 knot

~~" of bottom .. force.~~

Name of vessel, U.S. Fish Comm.

Service to which attached, Fish Commission

Name and rank of commanding officer, St. Comdr

Name and position of observer, R. G. Sawyer, U.S. Fish Comm.

NOTES RELATING TO STATION NO. 42

- 10 100-200 specimens  
 Several young sea stars -  
 " " sponges.
- 16 *Milne* flowers  
 1 by spot  
 2 small corals  
 6 *Milne* fans
- 16 *Pecten* ten. *suberosus* etc.  
*Cyprina* *fornicata*  
*Pandalus* *maisoni* }  
*Hydro* *tuberosa* *cutag.*
- Small group, *perforata* 1/2 ft  
 1 *cor. alba*
- 11 few *Crepidula* *stratone*  
 some small *bees*, *very* *small*  
 young silver *hake* 7?  
 2 young *squid*  
 1 deep sea *anemone*  
 few young silver *hake* 1?  
*Cyclopora* *borealis*  
*Syph* *pyra* - *small*  
*some* *blue*, *some* *to* *white*  
*Boroch* *one*
- 1(?) *Eopadina*
- + 30 *Maroon* *stars* 1/2 to 2 in  
 2 *purple* *stars*, 1 in to 3 in  
 Few broken shells.  
 1 small *anemone*  
 empty shell med. *modiol*  
*Cyprina* *claudia*
- 1 *sea* *l. heron*  
 several *stars* of *what* *look*  
*like* *the* *stars*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 43 - 1970

Date, Nov 17

Time of day, 4:20 pm : of tide, 4 hours of ebb

Locality, N. E. of Long Island

Exact position, Pt. Judith Light

N. 20° W. - 7.25 miles long

Depth, 20 fathoms

Nature of bottom, Sandy, gravelly

Dredging instrument used, Beam trawl

Direction of drift, E x S by S distance, 3/4 mile

Temperature of air, 57° Fahr. therm. No.,

" of surface water, " "

" at depth of  fathoms, " "

" at bottom, 56° Neapath

Density at surface, 1.023 temp., 13.1°

~~at depth of~~  fathoms, " "

" at bottom, 1.023 + " 13.2°

Number of salinometer, 7104

Barometer reading, 30.46

State of sky, Blue, light clouds

Direction of wind, S. S. E : force, 1

Rain, no

Direction of surface current, E x S : force, 1/4 knots

~~of bottom~~  : force, " "

Name of vessel, Fish Hawk

Service to which attached, Fish Commission

Name and rank of commanding officer, St. James

R. G. ...

Name and position of observer, ...

NOTES RELATING TO STATION NO. 43

- 4 Rusty-flowered
- 1 from spot "
- 3 common from "
- Some Dollars, Halfpennies
- 4 Pouter ten-lapped - Average small
- few young seen in
- 4 " sculpin
- " silver shrike (?)
- few Pandoras
- shrike
- 6 Ants in nest
- A little Corvidae
- Few Corvidae
- Few Titon
- Sybra pygmaea
- Spies
- 1 young seen
- 1 very young flower (?)
- Small pieces of wood
- 1 young common
- Large pieces of wood
- 11. 2 young
- 2 Dry
- 1 - "
- 2 "

## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 44 - 1971  
 Date. Nov. 3 - 98  
 Time of day, 3.10 pm; of tide, Spring ebb  
 Locality, NE of Black Island  
 Exact position, Pt. Judith light  
N. W. X 0.17 N. 6.50 miles mag  
 Depth, 16 fathoms  
 Nature of bottom, Hard sand  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, E 3/4 N; distance, 5/8 mile  
 Temperature of air, 56° Fahr. therm. No., 7397  
 " of surface water, "  
 " at depth of fathoms, "  
 " at bottom, 56° negetti "  
 Density at surface, 1.023 temp., 13.3° C  
 " at depth of fathoms, "  
 " at bottom, 1.0234 - 13.7°  
 Number of salinometer, 7104  
 Barometer reading, 30.42  
 State of sky, Blue light clouds  
 Direction of wind, N. W; force, ✓  
 Rain, no  
 Direction of surface current, ExD; force, 3/4 knot  
 " of bottom " : force,  
 Name of vessel, U. S. F. C. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, W. B.  
R. G. Harwood, Master  
 Name and position of observer, W. H. C. Williams  
Portland, Maine



NOTES RELATING TO STATION NO. 44

4 *Ammonia* *ponca* *florida*

1 young

10 water

14 young sea, above

3 *Parala* *ovata*

3 " spotted, *abundant* <sup>parts</sup> *large* *of* *area*

Several young cups,

1 young *abundant*

1 *young* *squid*

a few small *eggs*

small number of *larvae*

1 quart of *water* *to* *be* *used*

6 *particles* *the* *3* *small* *larvae* *dropped*

*Tricardium* *ovatum*, *1* *specimen*

a few *eggs*

*Caprellida* *plana*

*foveolata*

1 *stem* *of* *hydrilla* *long* *17*

9 *maroon* *stems* *less* *than* *the* *10* *cm*

2 *embryonic* *structures* *1* *with* *offspring*

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 45 972  
 Date, Nov. 3<sup>rd</sup> 1898  
 Time of day, 3.55 : of tide, low water  
 Locality, N.E. of Block Island  
 Exact position, Pt. Judith Light  
1 1/2 N. 8.50 miles  
 Depth, 17 1/2  
 Nature of bottom, fine sand  
 Dredging instrument used, 10 ft beam trawl  
 Direction of drift, N. 1/2 E. ; distance, 3/8 mile  
 Temperature of air, 56° Fahr therm. No. 7397  
 " of surface water, " "  
 " at depth of " fathoms, " "  
 " at bottom, 55 fathoms " "  
 Density at surface, 1.023 temp., 13.1°  
 " at depth of " fathoms, lighter cup  
 " at bottom, 1.024 .. 13.2°  
 Number of salinometer, 7104  
 Barometer reading, 30.46  
 State of sky, Blue - light clouds  
 Direction of wind, N. 0 N. ; force, 2  
 Rain, no  
 Direction of surface current, 0 ; force, 0  
 " of bottom " " : force.  
 Name of vessel, U.S.F.C.S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Dr. Louis  
R. G. Barnhart, Master  
 Name and position of observer, W. H. ...

NOTES RELATING TO STATION NO. 45

5 Nipper bones  
1 silver skate medulla (7)

3 spines  
3 Skates  
1 skate spine  
Largest skate spine  
" smaller

small piece of subvertebral  
1 young silver skate (?)  
3 sea robins,  
a few small squid.

Bombardier. Several in  
Tritia + triseriata shells

4 1300 m. in tank  
1 small piece brand. oil  
About 24 narrow stage. 1200

## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 46 - 973  
 Date, Nov 14 1898  
 Time of day, 8.30 am of tide, 3<sup>d</sup> low flood  
 Locality, N. W. of ...  
 Exact position, ... of ...  
 Depth, 18 fathoms  
 Nature of bottom, Sandy - shelly  
 Dredging instrument used, ... beam trawl  
 Direction of drift, S. E. x E distance, 5/8 mile  
 Temperature of air, 58° Fahn. therm. No., 7597  
 " of surface water, ..  
 " at depth of .. fathoms, ..  
 " at bottom, ..  
 Density at surface, 1.022 temp., 13.3  
 " at depth of .. fathoms, ..  
 " at bottom, 1.023 + " 14°  
 Number of salinometer, 7104  
 Barometer reading, 30.42  
 State of sky, Blue cloudy  
 Direction of wind, Calm; force, ..  
 Rain, no  
 Direction of surface current, N. W.; force, 1/2 knot  
 " of bottom ..; force, ..  
 Name of vessel, U.S.F.C. ...  
 Service to which attached, ... Commission  
 Name and rank of commanding officer, ... Lt. Comdr  
R. G. ...  
 Name and position of observer, ...

NOTES RELATING TO STATION NO. 46

- 7 Squid Lake -
- 4 Windowpane -
- Several young sea robin
- Few Pandalus
- 5 Skates - comacia, rather small
- Several young eels - Lake (?)
- 2 mussels (fleshy)
- 1 four spot .. (Parasitic on fleshy mussels)
- 1 murex .. (Dy. ?)
- Few Crangon .. (Murex skate and Parasitic)
- 1 winter skate.
- Few small squid
- Few sand dollars
- Few empty shells of cyprina - isaurina, with stems of Tubularia
- Tritia - numerous
- Neptuna pycna - few
- E. Bernhardus } in Tritia shells
- E. longicauda }
- Suberites compacta.
- Few young skate - squid ?
- few young Succinea small
- Nearly 100 Maroon stars, 1 1/2 in. to 3 inches
- 1 valve of cyclonema bivalvis
- Hydractinia
- Caprella plana
- Carcinulum
- L. Tricriatum with hemispheres
- 1 valve, small cyprina
- Few small shrimp (name?)

**RECORD OF DREDGING,**  
**TEMPERATURE AND DENSITY.**

Station No. 47 — 1974  
 Date, Nov. 4 - 98  
 Time of day, 9.15 : of tide, 2 1/2 ebb  
 Locality, off Cape Cod, Massachusetts  
 Exact position, Sakonnet's light  
E. N. E. 2.67 miles mag.  
 Depth, 14 fathoms  
 Nature of bottom, Sand  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, E. N. E. ; distance, 1/2 mile  
 Temperature of air, 59° Fahr therm. No., 7397  
 " of surface water, " "  
 " at depth of fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.023 temp., 13.3° C  
~~at depth of fathoms, " "~~  
 " at bottom, 1.024 " 13.3° C  
 Number of salinometer, 7104  
 Barometer reading, 30.45  
 State of sky, Blue, hazy  
 Direction of wind, Calm ; force,  
 Rain, no  
 Direction of surface current, W. N. W. ; force, 1/2 knot  
~~of bottom " " ; force,~~  
 Name of vessel, U. S. F. C. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Dr. Conner  
U. S. Department of Fisheries  
 Name and position of observer, J. H. Milby  
Commander, U. S. Fish Hawk

NOTES RELATING TO STATION NO. 47

- 4 winter flounders
- 1 very large summer flounder
- 1 rusty flounder
- 1 squirrel hake.
- 4 skates *Erinacea*.
- 2 winter " (?)
- 1 peck sand dollars
- Few young *P. carolinus*
- Fragment of sponge
- a little algae
- Spirorbis*
- few silver hake (?)
- few *Pandalus*
- Cappidula flava*
- 1 shell of *Littorina littorea* <sup>get</sup>
- 1 young cancer ? <sub>hemis.</sub>
- Habia*. small numbers
- Few crabs
- about 2 doz maroon stars  $\frac{1}{2}$  to 3 in
- 1 or 2 young *Buccinum*.

## RECORD OF DREDGING.

## TEMPERATURE AND DENSITY.

Station No. 48 - 1975  
 Date. Nov. 4 1898  
 Time of day. 9 55 : of tide. 4 1/2 of flood  
 Locality, Bar mouth of R. ...  
 Exact position. 940 ...  
 S. x E. 1/2 - 9 1067 miles long  
 Depth, 9 1/2 fathoms  
 Nature of bottom, Sand - gravel  
 Dredging instrument used, 7 foot beam Trawl  
 Direction of drift. N x E ; distance, 1/2 mile  
 Temperature of air, 57° Fahr therm. No., 7397  
 " of surface water, ..  
 " at depth of .. fathoms, ..  
 " at bottom, ..  
 Density at surface, 1.023 temp., 13.°  
 " at depth of .. fathoms, ..  
 " at bottom, 1.023 .. 12.5°  
 Number of salinometer, 7104  
 Barometer reading, 30.45  
 State of sky, Blue  
 Direction of wind, Calm ; force, 0  
 Rain, No  
 Direction of surface current, N x E ; force, 1/2 mile  
 " of bottom .. : force, ..  
 Name of vessel, U. S. Fish Comm.  
 Service to which attached, ..  
 Name and rank of commanding officer, R. G. ...  
 Name and position of observer, W. H. ...



NOTES RELATING TO STATION NO. 48

- 17 small *Plumbeus*
- 16 squirrel hake -
- 1 small sea-rover -
- 1 star-fish, *Forbesii*
- 7 skate - *esmacea*
- 3 sculpin
- 1 young hake - squirrel
- 2 " cunner.
- 1 small conner
- Few sand dollars.
- 1 *Libinia* -
- Chalina* doz bunches
- 2 narrow star { 1/2 in.
- 7 *E. Bernhardus* -
- few *Pollicaria*. few -
- Buccinum undatum* - small.
- E. Longicarpus* - few
- Eurocalypus*
- L. Tricarinata*. few
- \* *L. hexas* few
- Tritia*
- 1 pipe fish.
- Few conger
- 1 *Anachis*.
- 1 *E. annulipes*.
- 1 *Sycoetyens* - small
- 2 small *Pala*
- Bunch of sculpin eggs

## RECORD OF DREDGING,

## TEMPERATURE AND DENSITY.

Station No. 49 — 1976  
 Date, Nov. 4 - '98  
 Time of day, 10.30 ; of tide, High water  
 Locality, In Sacramento river  
 Exact position, Church Point N. W. 1/2 N  
95 of mile mark.  
 Depth, 5 fathoms  
 Nature of bottom, Gravelly  
 Dredging instrument used, 7 foot beam trawl  
 Direction of drift, N.E. x N. distance, 1/4 mile  
 Temperature of air, 60° Fahn therm. No., 7397  
 " of surface water, ..  
 " at depth of .. fathoms, ..  
 " at bottom, ..  
 Density at surface, 1.022 + temp., 17.0° C  
 " at depth of .. fathoms, ..  
 " at bottom, 1.023 .. 17.1° C  
 Number of salinometer, 7100  
 Barometer reading, 30.45  
 State of sky, Blue  
 Direction of wind, Calm ; force, ..  
 Rain, no  
 Direction of surface current, 0 ; force, 0  
 " of bottom " ; force, ..  
 Name of vessel, U. S. F. C. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, Dr. Conner  
R. S. Davenport Master  
 Name and position of observer, W. H. Kilgus  
Harvard

NOTES RELATING TO STATION NO. 44

- 1 doz skates *erinnacea*
- 1 large & 1 small spined hake
- 2 *Winter flounder*
- 2 window porrus
- 1 Cunner
- 1 cluster of *Chalcid*
- several young fish, slender 1/2 in
- Few crayfish.
- 1 *E. longicarpus*
- 1 *E. pollicaris*
- 1 *E. amuliposus* gurnal
- 1 *Capridula plana*
- 1 *Fornicata*
- few *Balanus*
- 1 *Neoverita* with hermit
- 1 *Cyclotopus* "
- 2 1/2 in. star fish (?) narrow
- Littorina littorea*
- Fritia*
- Hydrach tinea*
- 1 *L. sinictia* (?)
- 1 valve of *Yfida*
- 1 young fish
- 3 " resembling bass
- 1 *Phiona tenella*.

# RECORD OF DREDGING, TEMPERATURE AND DENSITY.

Station No. 50 / 1977  
 Date, Nov. 4<sup>th</sup> 1898  
 Time of day 11. am ; of tide, High water  
 Locality, In excavated river  
 Exact position, High Hill point  
N. E 1/2 N. .67 of a mile  
 Depth, 4 3/4 fathoms  
 Nature of bottom, Rocky-  
 Dredging instrument used, 7 feet beam trawl  
 Direction of drift, N x W. ; distance, 3/8 mile  
 Temperature of air, 60° Fahn therm. No., 7397  
 " of surface water, " "  
 " at depth of  fathoms, " "  
 " at bottom, " "  
 Density at surface, 1.022 temp., 15° C  
 " ~~at depth of~~ fathoms, " "  
 " at bottom, 1.023 " 12.4° C  
 Number of salinometer, 7104  
 Barometer reading, 30.45  
 State of sky, Blue  
 Direction of wind, S. W. ; force, 1  
 Rain, no  
 Direction of surface current, 0 ; force, 0  
~~" of bottom " ; force,~~  
 Name of vessel, U. S. F. C. S. Fish Hawk  
 Service to which attached, Fish Commission  
 Name and rank of commanding officer, St. Comdr  
R. E. Sawyer, M. D.  
 Name and position of observer, J. W. Milligan  
Pharmacist Kenau

- Few sponges here
- 1 white flounder - small
- 2 skates - small
- Few dead shells *Salpinx*, with
- Membranipora* & *Serpula*
- Crepidula fornicata*
- flava*.
- Escarella*
- E. Pollicaris* several
- E. Longicauda* few
- Lomatia heros*.
- Neorita*
- 1 *Labinia*
- 1 *Tricriata*
- 2 *Pelia mutica*
- 1 ~~Few~~ *Argina* + 1 empty shell
- a few small *Scapharca*
- 1 *Eurosalpinx*.
- Hydractinia*.
- 1 *Fulgur*
- 1 regenerating *Tar*, Forbes
- Few *Lepidonotus*.
- Plymenella*
- 1 *Gammarus* sp.
- Cyprina caudata* dead shell