ORIGINAL LOG BOOK OF THE "GRAMPUS"

UNITED STATES FISH COMMISSION

STATION NUMBERS

yr. 1889

Numbers 5050 to 5098

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No.

Date,

Time of day, ; of tide,

Locality,

Exact position,

Depth,

Nature of bottom,

Dredging instrument used,

Direction of drift, ; distance,

Temperature of air, therm. No.,

" of surface water, "

" at depth of fathoms, "

" at bottom, "

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading,

State of sky,

Direction of wind, ; force,

Rain,

Direction of surface current, ; 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. 5050

Feb. 15, 1889

~~Trial No 1~~ This worthy of record only as being the first trial, made at 9-15 A.M. after hauling Dredge

Also tried for fish before sunrise, with 3½ lb. lead, one hook fastened above the lead, baited with fresh Kiing Fish bought at Key West

Continuous trials are now being made while running on the 10 mile stretch, bottom white mud, nothing else came up

Continued trying every 5 or 10 minutes till 12 o clock noon

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5050

Date, Feb. 15th 1889

Time of day, 8-30 a.m. of tide,

Locality, 30 miles N.E. by N. 1/2 N. from Rebecca Shoal light N.

Exact position, By Meridian Al. for Lat.

Lat. 25°-01' N. Long. 82-22' W.

Depth, 15 1/2 faths

Nature of bottom, Mud, white,

Dredging instrument used, Hand Dredges

Direction of drift, W. by N.; distance, 1/2 Mile

Temperature of air, 71 therm. No., 6815

" of surface water, 65 1/2 " " "

" at depth of ~~15~~ 1/2 fathoms, ~~66~~ " " ~~1230~~

" at bottom, 66 " " 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.18

State of sky, B. C.

Direction of wind, E by N.; force, two

Rain, —— ——

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

" of bottom " " ; force, 1/2 knot

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5051

Trial No. 1 for fish important

At 12-45 M. put dredge out running west, sheets flat, found she was going to fast, and headed up S.S.E., while jogging struck hard bottom and 3 fine Snappers were caught by Mr. Conly 2nd Mate. first fish caught at 1-15 P.M. fished 25 minutes. 6 lines were out in a short time but only one more Snapper caught. As the bottom had been muddy, we were not in readiness, and in less than 15 minutes the vessel was on muddy bottom no fish.

I think by the no. of bites &c. if we had been prepared with good bait, and lines in readiness, we should have had good fishing, but it was moderate and I did not think it practicable to beat back again.

Remarks for next dredging Station will be made before. mention is made of fishing, and separate

Bait - did not seem suitable as we did - fish - plentiful trucking

L. W. | L. W.
30 in 15 lbs | 25 in 12 lbs

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5151

Date, Feb. 15, 1889

Time of day, 12-45 M.; of tide,

Locality, Gulf of Mexico, West Coast Fla.

Exact position, Lat. 25°-00′-31″ N.

Long. 82°-32′ W.

Depth, 18 fathoms

Nature of bottom, Brk. Sh.

Dredging instrument used, Heard dredge

Direction of drift, South; distance, 1/4 mile

Temperature of air, 73 therm. No., 6815

" of surface water, 67 " "

" at depth of ~~18~~ fathoms, ~~67~~ " ~~1230~~

" at bottom, 67 " 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30

State of sky, P. C.

Direction of wind, E. by S.; force, three

Rain, —— ——

Direction of surface current, S.S.E.; force, 1/2 Knot

" of bottom " ; force,

Name of vessel, Grampus

Service to which attached, U.S. Fish Commission

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5052

This station showed up little of interest, got dredge full of mud with a few broken shells.

Fish Trial No. 2 comes while the dredge is out, 2 large Snappers caught, although bottom poor, the vessel was brought to the wind a no. of times during this 1 mile run, but no bites were felt, also got bottom by throwing lead ahed.

The Snappers caught at this station measured 28 & 27 in. resply. and weighed 12 lbs each

Anchored at 6 P.M., During the evening caught 8 or 10 dollar fish 2 small red mouthed Grunts, 2 Squirel fish, also a peculiar looking crab

"Dollar Fish" = Logodon rombides
Grunts = Diabasis trivittatus
Squirel = Serranus fasciculatus
Crab = Calappa marmorata.
W.C. Kendale

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5052

Date, Feb. 15, 1889

Time of day, 4-34 P.M.; of tide,

Locality, W. coast - Fla

Exact position, Lat 25-00-31 N.
Long 82-40 W.

Depth, 21 fath.

Nature of bottom, White sand & fine Sh.

Dredging instrument used, Hand

Direction of drift, S. ; distance, 1/8 mile

Temperature of air, 77 therm. No., 6815

" of surface water, 67 " "

" at depth of ~~21~~ fathoms, 67 " 1231

" at bottom, 67 " "

Density at surface, temp.

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.08

State of sky, B. C.

Direction of wind, E. by N. ; force, three

Rain, —

Direction of surface current, S. W. ; force, 3/4 ~~Knot~~

" of bottom " ; force,

Name of vessel, Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5053

The dredge at this station contained a variety of broken shell, some small dead specimens of coral, sort of a decaying sponge like substance, and broken sea-weed specimens, together with a mixture of fine sandy light colored mud, showing considerable life

Fish trial No. 3 worthy of mention, shows good fishing, while the the dredge is over large Snappers very plentiful. five lines out, for about 26 minutes, ~~caught~~ 31 Snappers & 3 Grouper were caught. Some small fish seen in the water, the red Snappers were very numerous here, and probably a fine trip for market could have been taken. The average weight of this catch, 9 2/3 lbs. ten of them weighed 12 lbs. and upwards, each. Average length 24 Inches. nine of these measured 29 in. each. and weighed. about 13 1/2 lbs ea. The 3 smallest measured 13 1/2 in. ea. weight 6 lbs. ea. One Grouper weighed 22 1/2 lbs length 36 in. two others smaller size, they are the dark or black Grouper cleaned up decks, threw Snappers overboard, had only 2 trials on this 10 mile run get good soundings but no bites

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5053

Date, Feb. 16, 1889

Time of day, 7-40 A.M. of tide, 2/3 flood

Locality, North from Tortugas Ds.

Exact position, Lat 25°-11'-31" North
Long. 82°-51'-40" West

Depth, 25 faths

Nature of bottom, Sh. coral & sponges, hard

Dredging instrument used, Hand dredge

Direction of drift, N.E. ; distance, 1/4 mile

Temperature of air, 71 therm. No., 6815

" of surface water, 68 " "

" at depth of ~~25~~ fathoms, ~~68.5~~ " ~~1230~~

" at bottom, 68.5 " 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading. 30.12

State of sky, P. C.

Direction of wind, E. by S. ; force, three

Rain, — —

Direction of surface current, S.S.E. ; force, 3 knots

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S.F.C.

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5054

This station gives little in the dredge, the fine sand and mud having washed out, partially. A few small shells, crabs &c

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5054

Date, Feb. 16, 1889

Time of day, 10-40 A.M.; of tide, about 1 h. ebb.

Locality, Gulf of Mexico

Exact position, Lat 25°-06'-31" N.
Long 83°-03" W.

Depth, 29 fathoms.

Nature of bottom, Moderately hard some Sh.

Dredging instrument used, Hand dredge

Direction of drift, S.S.W ; distance, 1/8 mile

Temperature of air, 75 therm. No., 6815

" of surface water, 69 " "

" at depth of ~~29 fa~~thoms, ~~68~~ " 1234

" at bottom, 68 " 54 & 33

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.14

State of sky, B. C.

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

Rain, — — —

Direction of surface current, S.S.E ; force, 0.3 knots

" of bottom " ; force,

Name of vessel, Str. Grampus

Service to which attached, U.S.F.C.

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5055

Heard bottom, a few finger, some sponge, and a few pieces of coral, also crabs and some small specimens of life

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A no. of trials were made for fish between Station 5054 and 5055 no bites were felt, and none at the present Station

Left station 5055 at 1 P.M. at 1-30 came up to the wind got a good sounding, no fish, sounded at 2-10 no fish

" " 2-40 " "

" " 3- " "

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5085

Date, Feb. 16, 1889

Time of day, 12-30 m.; of tide, about half ebb

Locality, Gulf of Mexico

Exact position, Lat. 25-12-45 N.
Long 83°-14 W.

Depth, 32 fath

Nature of bottom, Broken Sh. fine, coral coarse & fine

Dredging instrument used, hand dredge

Direction of drift, S. W. ; distance, 1/8 mile

Temperature of air, 73 therm. No., 6815

" of surface water, 68.5 " "

" at depth of ~~32~~ fathoms, 68.5 " 1230

" at bottom, 68.5 " 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.118

State of sky, P. C.

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

Rain,

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. C.

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5056

This gives us little in the dredge, the bottom is probably quite smooth, being composed of light-colored sand and small shells.

No fish were caught between stations 5055 and 5056

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5056

Date, Feb. 16. 1889

Time of day, 3-20 P. M. ; of tide, about low water

Locality, Gulf of Mexico

Exact position, Lat 25°-12'-49" N.
Long 83-25-10 W.

Depth, 36 fathms.

Nature of bottom, Sand & Shells, moderately hard

Dredging instrument used, hand dredge

Direction of drift, S. ; distance, 1/8 mile

Temperature of air, 74 therm. No., 6816

" of surface water, 71 " "

" at depth of ~~36~~ fathoms, ~~69.5~~ " +230

" at bottom, 69.5 " 54"823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.08

State of sky, P. C. nearly overcast

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

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Commn

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5057

Anchored at 6-20 for the night, quite a strong current setting to the S.E., Wind E.S.E. a stiff breeze, had to take in mainsail, vessel laid in trough of sea all night, At 1-30 A.M. current changed to N.E., Cast dredge at 6-15 A.M. while weighing Anchor. got quite an amount of fine broken sh, sort of a Purplish red coral plant or algae. also some sand, and little mud. a portion of this haul Mr. Kendall calls "Crustations"

From 5056 to 5057, made a trial about 4-50 no fish
" " at 5-30 resulted in taking two large Snappers. 1 large Grouper in Lat. 25-02-41 N Long 83-32 W. This trial was made just before dark, we had a no. of bites and did not lay long enough to catch many fish, I have no doubt but, that if it had been earlier we should have had good fishing and large fish.

The above trial is No. 4 where fish were caught.

(Snappers) In 36 long 20 lbs	Groups In 35 long 20 lbs. weight
33 " 16	During Eve. 2 Groupers were caught lengths & weights below
In 21 long 5 lbs	Trial No. 5
" " 6 "	

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5157

Date, Feb. 17, 1889

Time of day, 6-15 A.M. of tide, one hour of H.W.

Locality, Gulf of Mexico

Exact position, Lat 25°-12'

Long. 83-34

Depth, 37 fathoms

Nature of bottom, Sh, sand, coral plant & Algae

Dredging instrument used, hand dredge

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

Temperature of air, 76 therm. No., 6815

" of surface water, 76 " "

" at depth of fathoms, "

" at bottom, 69.5 " 54823 ~~1230~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.114

State of sky, P.C. Partly overcast

Direction of wind, E by S. ; force, fair

Rain, — —

Direction of surface current N. E ; force, 1/2 Knots

" of bottom 3 judge " ; force, 1/2 "

Name of vessel, Sch Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5058

This Station finishes the the first Line, for dudging.

I steer N. by E ten miles after making corrections for current, or from Lat. 25-02 N. and Long. 83-48 W. having run W. about 4 1/4 miles by log from this Station to get 50 faths; and a strong current setting to the S.E. notwithstanding had about 57 faths.

Trial No. 6 made at 9 A.M. Feb. 17. 1889 Lat. 25-02 N. Long. 83-37, laid 10 mi. 1 large red Grouper caught length 28 in weight 19 lbs., ~~Lat. 25-02 Long. 83-37-30 W~~

Next trial no fish made at 10-15

At Sta. 5058 no fish were caught.

Run 4 1/2 Miles from 44 1/2 faths and had 57 faths. wind was blowing too fresh at the time to fish, tried, sounded with Tanner Machine and it took out 67 1/2 faths probably there was 10 faths stray. Will mention here that the Machine has been used at every dudging station thus far

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5158

Date, Feb. 17, 1889

Time of day, 11-40 a.m.; of tide, about 1/2 ebb.

Locality, Gulf of Mexico

Exact position, Lat 25-12 N.
Long 83-44 W.

Depth, 44 1/2 fathoms.

Nature of bottom, Sand & Shells

Dredging instrument used, hand dredge

Direction of drift, S. ; distance, 1/10 mile

Temperature of air, 79 therm. No., 6815

" of surface water, 72 " "

" at depth of fathoms, "

" at bottom, 69.5 " ~~1230~~ 5483?

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.04.

State of sky, B. C.

Direction of wind, S.E. by E; force, fair

Rain, —

Direction of surface current, S. E ; force, 2 k.

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Commn

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5059

The dredge brought up but little. a few broken shells

No food fish caught at the above station. A no. of small Sharks seen along side. one caught 2 feet. At 2-45 tried for fish. no bites No Flying fish were seen the 15th, but 3 were seen the 16th and only 1 seen to-day.

Made but one trial for fish between 5059 & 5060 the wind breezing up somewhat. run bout ten miles by log. found only 38 faths. bottom seems irregular

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5059

Date, Feb. 17, 1889

Time of day, 1-30 P. M.; of tide, Low water

Locality, Gulf of Mexico

Exact position, Lat - 25-12 N.
Long 83-46 W.

Depth, 511 faths.

Nature of bottom, broken shells & sand

Dredging instrument used, hand dredge

Direction of drift, N. E.; distance, 1/8 mile

Temperature of air, 75 therm. No., 6815

" of surface water, 76.5 " "

" at depth of fathoms, "

" at bottom, 71 " 54833 ~~1230~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 29.98

State of sky, B. C.

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

Rain, —

Direction of surface current, N. E.; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. E. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5060

Quite a portion of broken shells and unwholsome looking coral together with sand &c. devoid of much life

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No fish were caught or felt at this station.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5060

Date, Feb. 17, 1889

Time of day, 3-30 P.M. of tide, about 2 h. flood

Locality, Gulf of Mexico

Exact position, Lat. 25-12 N.
Long 83-36 W.

Depth, 38 faths

Nature of bottom, Coral, small shells & Sand

Dredging instrument used, hand dredge

Direction of drift, N. E. ; distance, 3/8 mile

Temperature of air, 76 therm. No., 68 15

" of surface water, 71 " "

" at depth of fathoms, " 54823

" at bottom, 69.5 " ~~1230~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 29.96

State of sky, P. C.

Direction of wind, S. E ; force, four

Rain, — — —

Direction of surface current, N. E Probably ; force, 1 knot

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5 11 61

Anchored on this station at 6-30 P.M. last Eve.

Tried for fish at 5 P.M. and found none. The bottom along here does not seem to be bad

Trial No. 1 while at anchor last Eve. one snapper was caught, length 28 in. weight 15 lbs. quite a no. of bites were felt but some of them were probably small fish.

E.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5161

Date, Feb. 18, 1889

Time of day, 6-15 a.m.; of tide,

Locality, Gulf of Mexico

Exact position, Lat 25-12 N.
Long 83-20-30 W.

Depth, 36

Nature of bottom, Sand & Shells

Dredging instrument used, hand dredge

Direction of drift, N.N.W. distance, 1/2 mile

Temperature of air, 70 therm. No., 6815

" of surface water, 70 "

" at depth of fathoms, "

" at bottom, 68 " 54833 1230

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 29.93

State of sky, P. C.

Direction of wind, S.E. by S.; force, three

Rain, — —

Direction of surface current, S. by S.; force, 1 knot

" of bottom apparently; force, the same

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5 1162

Very little came up this time, although the dredge was out a long time, it being very moderate the vessel got aback and had to be worn around. thought there would be a good haul. The bottom is probably quite hard. some few crustaceans came up

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Continuous trials have been made for fish since leaving station 5 1161 the lead taking bottom every time, it being very moderate. At 9-40 A.M. found a singular looking Porpoise, which I will have skinned and dissected and saved.

No fish felt or caught at the above station 5 1162 the bait was nice fresh smelt per. fish seem very scarce along here.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5 1162

Date, Feb. 18, 1879

Time of day, 10-15 a. m. of tide, ebb probably 1/2

Locality, Gulf of Mexico

Exact position, Lat 25-17 N.
Long 83-19 W.

Depth, 30 1/2 faths

Nature of bottom, S. sh. coral & black spks

Dredging instrument used, hand dredge

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

Temperature of air, 76 therm. No., 6815

" of surface water, 69 " "

" at depth of fathoms, " 54823

" at bottom, 70.5 " ~~1230~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30

State of sky, B. le

Direction of wind, E. by S. 1/2 S. force, one

Rain, — —

Direction of surface current, S. E ; force, 1 knot

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. G. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5-1163

About 1/2 bushel of mud and sand of a gray color with quite a portion of fine shells. Very little life.

Several trials since leaving station 5-1162 result in there being no fish caught although the bottom to all appearances seems as well adapted to fish as along the first line

No fish at the above station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5063

Date, Feb. 18, 1889

Time of day, 3-30 P.M.; of tide, 1½ h. ebb.

Locality, Gulf of Mexico

Exact position, Lat. 25-17 N.
Long 82-54-30 W.

Depth, 27 faths

Nature of bottom, Shells and sand

Dredging instrument used, hand dudge

Direction of drift, N. E. ; distance, 1/8

Temperature of air, 77 therm. No., 6815

" of surface water, 70 " "

" at depth of fathoms, " 54823

" at bottom, 67.5 " 1230

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 29.95

State of sky, P. C. partially overcast

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

Rain, —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5464

Came to anchor at 6-20 last night. The S.E. current while being very moderate has taken the vessel beyond each station a mile or more further than I called her, the Log failing also to record what is actually sailed, therefore I dredge here to even up the stations, having gone 5.8 miles by Log only.

This station shows little in the dredge but mud, sand and a few broken shells with a few pieces of broken sponge.

The bottom is so soft and sticky along here that we find no fish with continued trials, a man at the rail with the line quite a portion of the time, tries so frequently while I am writing, that it is hardly possible to keep a record of each trial, when no fish are caught

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5064

Date, Feb. 19, 1885

Time of day, 6+10 a.m.; of tide, young flood

Locality, Gulf of Mexico.

Exact position, Lat. 25-17 N.
Long. 82°-49'-15" W.

Depth, 24 fathoms

Nature of bottom, mud, soft, Gray

Dredging instrument used, hand dredge

Direction of drift, N. ; distance, 1/8

Temperature of air, 69 therm. No., 6815

" of surface water, 68 "

" at depth of fathoms, "

" at bottom, 67 " 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30

State of sky, B. C.

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

Rain, —

Direction of surface current, S. E. ; force, 1 knot

" of bottom " " ; force, "

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 51165

Quite a portion of small broken shells with sand came up in the dredge. A few worms also came up.

Since leaving Station 51164, the bottom has continued very soft, with no fish.

No. 8 At the above station Grouper were quite plentiful, 12 were caught also 3 Snappers. About 4 lines out for 12 or 15 minutes. At one time saw 4 or 5 Groupers up in the water

	Weight	Length	
"	8½ lbs	23⅔ in	for average
Grouper	9 "	23⅓ "	" "

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5065

Date, Feb. 19, 188

Time of day, 10 a.m. ; of tide, flood

Locality, Gulf of Mexico

Exact position, Lat. 28°-15' N.
Long. 82°-39'-15" W.

Depth, 19½ fathoms

Nature of bottom, gray sand and (hard) Sh

Dredging instrument used, hand dredge

Direction of drift, E. by S. ; distance, 1/10 mile

Temperature of air, 77 therm. No., 68115

" of surface water, 69 " "

" at depth of fathoms, "

" at bottom, 67 " ~~1231~~ 54523

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.06

State of sky, B. c.

Direction of wind, S. E. W. ; force, one

Rain, —

Direction of surface current, Prob S. E. ; force, 1/2

" of bottom " ; force,

Name of vessel, U. S. F. Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5066

Quite a portion of gravel and broken shells came up in the dredge, small shells of various kinds come up in abundance

Since leaving station 5065 we have good depths of water for fish but find none, although continued trials have been made

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5466

Date, Feb. 19, 1889

Time of day, 12-30 m.; of tide, nearly high water

Locality, Gulf of Mexico

Exact position, Lat 25-13 N.
Long 82-28 W.

Depth, 17 fathoms

Nature of bottom, gravel & broken sh.

Dredging instrument used, hand dredge

Direction of drift, E. ; distance, 1/10 mile

Temperature of air, 80 therm. No., 6815

" of surface water, 69.5 " "

" at depth of fathoms, "

" at bottom, 66 " 54823 / 1234

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.06

State of sky, P. C.

Direction of wind, S.S.W. ; force, two

Rain, —— ——

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Schr Grampus

Service to which attached, U.S.F. Corwin

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5067

Very little came in the dredge this time although it was moderate, very little life appears here.

This finishes up the 2nd line, which we leave steering N. N. W. for the third. It has been very moderate most of the time so we could hardly make four lines per day

---

Since leaving station 5066 can find no fish.

At this station saw a Turtle and a large Shark

Sea birds of all kinds are very scarce, hardly one has been seen for 2 or 3 days

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5 11 67

Date, Feb. 19, 1889

Time of day, 3-45 P.M.; of tide,

Locality, Gulf of Mexico

Exact position, Lat 25-13 N.
Long 82-17

Depth, 14 1/2

Nature of bottom, hard, Coral & Shells

Dredging instrument used, hand dredge

Direction of drift, E. ; distance, 1/8

Temperature of air, 83 therm. No., 68 15-

" of surface water, 71 "

" at depth of fathoms, "

" at bottom, 66 " 54823 / 12311

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30,02

State of sky, B. le

Direction of wind, S. S. W. ; force, two

Rain,

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 51168

Have left one station on the East end of this line, Last night at 10-11 P.M. Rebecca Shoal light bore E. 2 miles dist. Wind E.N.E Course N. by E. 50 miles to the 15 fath. on this line ~~above~~ station. At daylight wind veered to the N. and blew a fresh breeze, At 9-15 A.M. 2 reefed mainsial, At 12 M. wind moderates, making slow progress, towards east station, so begin as above, and make a fair wind.

Quite a quantity of black or dark coarse gravel came in the dredge, with fine broken coral, and a few broken shells of very small size

---

No bites were felt at the above station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5068

Date, Feb. 26. 1889

Time of day, 1 P.M. ; of tide, low water

Locality, West Coast - Florida

Exact position, Long 82-32 W.
Lat. 25-23 N

Depth, 17 faths. by Tanner So Machine

Nature of bottom, dark gravel. brk co. & brk. sh.

Dredging instrument used, hand dredge

Direction of drift, W. ; distance, 1/8 mile

Temperature of air, 70 therm. No. 6813

" of surface water, 66 " "

" at depth of fathoms, "

" at bottom, 65.5 " ~~12311~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.32

State of sky, B. C.

Direction of wind, N.E. by E ; force, four

Rain, — — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S.F. Conin

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 51169

Soft gray mud was about all that came in the dredge

Since leaving station 5068 two trials by letting the vessels come up in the wind for a good sound have been made. The hooks have been baited with snapper and spanish mackerel taken from the Well. No bites have been felt to-day

This station turns out the same. All we can catch is what people here call Spanish mackerel, but they look much and taste much like Bonitas

(Frigate-mackerel (Auxis thazard) Kendall

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5 11 6 9

Date, Feb. 26, 1889

Time of day, 2-45 .; of tide, young flood

Locality, West Coast Florida

Exact position, Long. 82-43 W.
Lat 25-23 N.

Depth, 23 faths

Nature of bottom, Soft gray mud

Dredging instrument used, hand dredge

Direction of drift, W. ; distance, 1/10 mile

Temperature of air, 69 therm. No., 6813

" of surface water, 66 " "

" at depth of fathoms, "

" at bottom, 66 " ~~1230~~ 54833

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.28

State of sky, P. C.

Direction of wind, N.E. by E force, fine

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

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

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5070

Two little crabs and a sponge together with a very few broken shells

---

Three trials were made from last station to this and

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5071

Date, Feb. 26, 1889

Time of day, 4-45 P.M.; of tide,

Locality, Gulf of Mexico

Exact position, Lat. 25-23 N.
Long 82-54-30 W

Depth, 26 1/2 fathoms

Nature of bottom, Shells & sand

Dredging instrument used, hand dredge

Direction of drift, N.; distance, 1/10

Temperature of air, 68 therm. No., 6813

" of surface water, 65.5 " "

" at depth of fathoms, "

" at bottom, 67 " ~~12311~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.28

State of sky, P.C.

Direction of wind, N.E. by E.; force, four

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm

Name and rank of commanding officer, A.G. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5071

The bottom here was rather hard. A sea urchin & sponge, with some signs of life

---

No Fish at this station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5071

Date, Feb. 28, 1889

Time of day, 7-55 a.m. of tide,

Locality, Gulf of Mexico

Exact position, Lat 25°-24'-30" N.
Long 83-06 W.

Depth, 30 fathoms

Nature of bottom, fine gray sand, black specs

Dredging instrument used, hand dredge

Direction of drift, W. ; distance, 1/11

Temperature of air, 69 therm. No., 6818

" of surface water, 67 " "

" at depth of fathoms, "

" at bottom, 69 " 54823 / 1234

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.24

State of sky, B.C. Partly overcast

Direction of wind, N.E. by E; force, three

Rain, —

Direction of surface current, E.S.E ; force, 1/10 mile

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm.

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5072

The dredge brings up sponge, coral, encrustations &c. with some life, but the bottom seems soft to the lead, although indications with dredge show the nature of the bottom to be better adapted for food fish than this line has before shown

---

A no. of trials between 5071 and this result in taking no fish.

The bottom here is soft — no fish.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5072

Date, Feb. 28, 1889

Time of day, 9-50 a.m.; of tide,

Locality, Gulf of Mexico

Exact position, Lat 25°-23'-30" N.
Long 83°-17' W

Depth, 33½ faths.

Nature of bottom, Sponge coral & Crustations

Dredging instrument used, hand dredge

Direction of drift, W. ; distance, 1/10 mile

Temperature of air, 71 therm. No., 6813

" of surface water, 68.5 " "

" at depth of fathoms, " 54823

" at bottom, 68.5 " ~~1230~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.23

State of sky, C.

Direction of wind, E. by N.; force, four

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Corvin

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5173

The dredge brought up a good showing at this station comprising a mixture of coral sponge, shells, star fish, sea urchins, crabs, and a variety of small animal life

---

A no. of trials between the last station and this result in no fish being caught.

Also with three lines out at station no bites were felt, although the bottom seemed well adapted to fish

Flying fish have been quite numerous throughout the day. A no. of Porpoises were seen at 2-15 P.M but did not come near enough to be captured

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5073

Date, Feb. 28, 1889

Time of day, 11-35 a.m. of tide,

Locality, Gulf of Mexico

Exact position, Lat. 25°-23' N.
Long. 83°-28' W.

Depth, 38 faths.

Nature of bottom, coral, br. sh. and live bottom

Dredging instrument used, hand dredge

Direction of drift, W. ; distance, 1/10

Temperature of air, 71 therm. No., 6813

" of surface water, 72 " "

" at depth of fathoms, "

" at bottom, 69 " ~~1230~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.20

State of sky, Overcast

Direction of wind, E, ; force, five

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Corrin

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5074

A few crustations only
come in the dredge

The wind and weather
in my judgement did not
allow me to try for fish bet-
ween the two last stations
for with a falling Bar.
and increasing wind I can
use all the time befor dark
in trying for the 2nd station
on next line in order to
get less than 50 faths for
an anchorage with our
short cable, a good trial
for fish with two kinds
of fresh bait resulted in
not feeling a bite so ends
this line without taking
a fish

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5174

Date, Feb. 28, 1889

Time of day, 1-30 P.M.; of tide,

Locality, Gulf of Mexico

Exact position, Lat. 25°-24' N.
Long. 83-40 W.

Depth, 52 fathoms

Nature of bottom, hard. crustations

Dredging instrument used, hand dredge

Direction of drift, N. ; distance, 1/10 mile

Temperature of air, 76 therm. No., 6813

" of surface water, 75 " "

" at depth of fathoms, "

" at bottom, 69 " 54823 ~~1234~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.14

State of sky, B. C

Direction of wind, E. ; force, six

Rain, — ——

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Str. Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5075

Gray sand of a soft nature
& broken coral.

No fish could be caught
at this station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5175

Date, Feb. 28, 1889

Time of day, 3-10 P.M.; of tide,

Locality, Gulf of Mexico

Exact position, Lat 25-34 N.
Long 83-39-30

Depth, 5-2½ fathm.

Nature of bottom, fine Gray sand & coral

Dredging instrument used, hand dredge

Direction of drift, N. W ; distance, 1/10 mile

Temperature of air, 74 therm. No., 6813

" of surface water, 70 " "

" at depth of fathoms, "

" at bottom, 71 " 54823 ~~1230~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.16

State of sky, Overcast

Direction of wind, E by S. ; force, four

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S.F.Comm

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5076

The dredge brought quite a variety. Coarse gray sand, with fine broken coral, small spider like, live animals. minute crabs. sea urchins a few very small shrimp like fishes, with broken shells. crustaceans

---

No fish were caught between station 5075 and this. Fish trial No. 9 when ~~when fish~~ were caught. A large grouper was hauled to the surface of the water, also another fish which they say was ~~probably~~ a grouper as he was in sight ~~or snapper~~ was lost off. the wind is rather too strong this Am. for good trials for fish. although if they were very plenty they would take the bait as we have fresh bait from the well all the time.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5076

Date, Mar. 1, 1889

Time of day, 7-45 a.m. of tide,

Locality, Gulf of Mexico

Exact position, Lat. 25°-34' N.
Long. 83°-28' W.

Depth, 39 fathms.

Nature of bottom, Gravel, coral, fine shells

Dredging instrument used, hand dredge

Direction of drift, N.W. ; distance, 1/10 mile

Temperature of air, 69 therm. No., 6813

" of surface water, 68 " "

" at depth of fathoms, "

" at bottom, 69 " ~~1230~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.24

State of sky, P. C.

Direction of wind, E ; force, fine

Rain,

Direction of surface current, E. ; force, 1/4 knot

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Commission

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5977

A good haul came up in the dredge, composed mostly of ~~of~~ gray coarse sand with only a few shells and other material.

Three tacks were made to get on this station, the wind being dead ahead. A trial for fish was had each time we tacked and no fish were caught.

A good plump sound was had at this station but no bites were felt

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5177

Date, Mar. 1, 1889

Time of day, 11-50 a.m. of tide,

Locality, Gulf of Mexico

Exact position, Lat. 25°-38'-21" N.
Long 83°-18'- W.

Depth, 33 faths.

Nature of bottom, Coarse gray gravel. sh. cord

Dredging instrument used, hand dredge

Direction of drift, N. W. ; distance, 1/4 mile

Temperature of air, 70 therm. No., 6813

" of surface water, 68 " "

" at depth of fathoms, "

" at bottom, 68.5 " ~~12-30~~ 57823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.22

State of sky, B. C.

Direction of wind, E. ; force, trace

Rain, — —

Direction of surface current, E ; force, 1/10

" of bottom " ~~weight~~ ; force, slight

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5078

The dredge brought up little, or nothing of any importance

Anchored at dark

No fish, as usual from last station to this

No fish at this station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5078

Date, Mar. 1. 1889

Time of day, 3-30 P.M.; of tide,

Locality, Gulf of Mexico

Exact position, Lat 25°-34 N.
Long 83-07 W.

Depth, 30 faths

Nature of bottom, fine sand & black specks

Dredging instrument used, hand dredge

Direction of drift, N. W. ; distance, 1/10 mile

Temperature of air, 71 therm. No., 6813

" of surface water, 68 "

" at depth of fathoms, "

" at bottom, 68.5 " 67823 ~~1234~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.14

State of sky, P. C.

Direction of wind, E. ; force, two

Rain, —— ——

Direction of surface current, hardly; force, perceptible

" of bottom " ; force, slight

Name of vessel, Sch. Grampus

Service to which attached, U.S.F. Corsair

Name and rank of commanding officer, A. E. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5079

The dredge brought nothing up after being down 15 or 20 minutes, so we let it down again, and after hauling with the same result ~~except~~ excepting a little crab or two we conclude that the bottom is ~~too~~ hard to be affected by the dredge

---

After getting under way washed down decks and arrived at this station before trying for fish, but no fish were caught at the anchorage last night, and none at this station.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5079

Date, Mar. 2, 1889

Time of day, 9 A.M. ; of tide,

Locality, Gulf of Mexico

Exact position, Lat 25-34-30 N.
Long 83-01 W.

Depth, 27 fathms.

Nature of bottom, fine sand, bk. spks. hard

Dredging instrument used, hand dredge

Direction of drift, S. W. ; distance, 1/10

Temperature of air, 68 therm. No., 6813

" of surface water, 66.5 " "

" at depth of fathoms, "

" at bottom, 68 " ~~1230~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.18

State of sky, P. C.

Direction of wind, E. ; force, three

Rain, — —

Direction of surface current, E ; force, 1/10 mile

" of bottom " very slight, ~~force~~, force

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5080

Quite a variety of surface life including sponge of a coral shape, crabs of curious shapes, and shells with some life in them

I wish I could describe the apparent animal life hauled from the bottom in terms, appropriate

---

No fish have been caught from the last station to this, have had two trials

~~Two~~

No. 10 Fish trial worthy of record gives us one large snapper caught at this station

Length	Weight
30 In.	18 Lbs.

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5180

Date, Mar. 2, 1885

Time of day, 1-30 P.M.; of tide,

Locality, Gulf of Mexico

Exact position, Lat 25°-34' N.
Long 82°-51' W.

Depth, 25 fathms.

Nature of bottom, light sand & broken shells

Dredging instrument used, hand dredge

Direction of drift, N. W. ; distance, 1/8

Temperature of air, 72 therm. No., 6813

" of surface water, 66 " "

" at depth of fathoms, "

" at bottom, 67 " ~~1230~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.10

State of sky, B. C

Direction of wind, E by S. ; force, three

Rain, —— ——

Direction of surface current, no current ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Commn

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5081

Broken shells, and soft sandy mud of a grayish color.

No fish taken between 5080 and this

No fish caught here

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5081

Date, Mar 3, 1889

Time of day, 6 A.M. ; of tide,

Locality, Gulf of Mexico

Exact position, Lat 28°-33'-38" N.
Long 82-39

Depth, 20 fathoms

Nature of bottom, fine sand

Dredging instrument used, hand dredge

Direction of drift, N.W. ; distance, 1/8 mile

Temperature of air, 67 therm. No., 6818

" of surface water, 66 " "

" at depth of fathoms, " "

" at bottom, 67 " ~~1230~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.01

State of sky, B, C. 1

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

Rain, —— ——

Direction of surface current, ——; force, ——

" of bottom " ——; force, ——

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm

Name and rank of commanding officer, A.C. Adam

Name and position of observer,

NOTES RELATING TO STATION NO. 5082

Dredge brings a little grass and a fragment or two of sponge.

Dead, barren, bottom about here

Between last station and this could catch nothing but an unknown fish on the drail line Clevalle. Nothing at this station.

At 10-40 A.M. bear up for Punta Rasa course N. by E. Dist. about 55 miles

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5082

Date, Mar. 3, 1889

Time of day, 10-15 a.m.; of tide,

Locality, Gulf of Mexico

Exact position, Lat. 25°-34' N.
Long 82-27

Depth, 15 1/2 fathm.

Nature of bottom, gray sand

Dredging instrument used, hand dredge

Direction of drift, N. E. ; distance, 1/10 mile

Temperature of air, 71 therm. No., 6813

" of surface water, 67 " " "

" at depth of fathoms, "

" at bottom, 67,5 " ~~1230~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer,

Barometer reading, 30.02

State of sky, Cloudy

Direction of wind, S. by E. ; force, one

Rain, —— ——

Direction of surface current, —— ; force, ——

" of bottom " —— ; force, ——

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm

Name and rank of commanding officer, A. E. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5183

While just drifting along with hardly steerage way a Meridian alt of the ☉ lower limb gives us a Lat. of 25° 44' 32" and about 15 fathoms of water first in now station of 5th line. The dredge brings up plenty of black gravel broken shells, ~~sponge~~ & coral

---

No. 11 Eleventh trial where fish have been caught, shows good fishing, we having taken 32 Snappers and 2 Groupers at the above station.

I think that Groupers & Snappers are quite ~~plenty~~ along here in this depth of water for Mr. Conly (2nd Mate) put a line over to get the depth about 1/2 mile north of this and caught a grouper and I saw 4 or 5 others following the line up but the vessel soon soaked along past them as he caught no more.

Length and weight of fish as follows

	Av. length	Av weight
Snappers 32	25.1 in	8.4 lbs.
Groupers 2	27 "	9.5 "

643

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5183

Date, Mar. 11, 1889

Time of day, 1 P. M.; of tide,

Locality, West coast Florida

Exact position, Lat 25°-44'-32" N.
Long. 82-26-15 W

Depth, 15 fathms.

Nature of bottom, bk. Sp. G. brk. Sh. & Co.

Dredging instrument used, hand dredge

Direction of drift, S. W. ; distance, 1/10

Temperature of air, 68 therm. No., 6810

" of surface water, 66 " "

" at depth of fathoms, "

" at bottom, 66.5 " 54523 ~~12.54~~

Density at surface, 26 temp., 66

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.16

State of sky, B.

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

Rain, —

Direction of surface current, — ; force, —

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5084

The dredge brought up quite a portion of Coral like Algae with a few broken shells

---

No fish could be caught from station 5083 to this, with several trials

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5084

Date, Mar 10, 1889

Time of day, 5-20 P.M.; of tide,

Locality, West Coast of Florida

Exact position, Lat. 25-44-32

Long 82-37-15

Depth, 19 fathm.

Nature of bottom, S. & Coral-like Algae

Dredging instrument used, hand dredge

Direction of drift, W. S. W.; distance, 1/10

Temperature of air, 66 therm. No., 6810

" of surface water, 65 " "

" at depth of fathoms, "

" at bottom, 65.5 " 54833 / 1230

Density at surface, 26.4 temp., 65

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.14

State of sky, P. C.

Direction of wind, N.; force, thru

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, H. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5085

A liberal quantity of broken shells and some coral, came in the dredge

Quite windy.

too rough for good work

No fish caught at the above station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5085

Date, March 11, 1889

Time of day, 6-15 am of tide,

Locality, West coast of Florida

Exact position, Lat 25-44-32 N.
Long 82-48-15 W.

Depth, 24 fathms.

Nature of bottom, brk. sh. fm. S. & W.

Dredging instrument used, hand dredge

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

Temperature of air, 59 therm. No., 6810

" of surface water, 64 " "

" at depth of fathoms, "

" at bottom, 66.5 " 5-4823 ~~7234~~

Density at surface, 26.4 temp., 64

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.16

State of sky, B. C

Direction of wind, N. N. E ; force, fine

Rain, — —

Direction of surface current, No current ; force,

" of bottom " — ; force, —

Name of vessel, Sch. Grampus

Service to which attached, U.S.F. Comm

Name and rank of commanding officer, H. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5086

Contents of dredge,
Mud and broken shells,
no life.

No fish could be caught
at the above station
It is rather rough to
do anything between stations,
hope it will moderate
soon. The wind here in
the Gulf comes in puffs
and squalls so with a
little wind it gets quite
rough

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5086

Date, March, 11, 1889

Time of day, 8 A.M. ; of tide,

Locality, West-coast of Florida

Exact position, Lat. 25-44-22 N.
Long. 82-59-18 W.

Depth, 28 fathms.

Nature of bottom, M. gr. S. bk. Sp

Dredging instrument used, hand dredge

Direction of drift, W. S. W. ; distance, 1/10

Temperature of air, 58 therm. No., 6810

" of surface water, 64 " "

" at depth of fathoms, "

" at bottom, 66 " 54823

Density at surface, 26.4 temp., 64

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.20

State of sky, Cloudy

Direction of wind, N. N. E ; force, fine

Rain, —

Direction of surface current, — ; force, —

" of bottom " — ; force, probably none

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Commn

Name and rank of commanding officer, A. E. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5087

Dredge brings up a small portion of sponge and shells

One trial from No. 5086 to this station. no fish

No fish at this station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5087

Date, March 11. 1889

Time of day, 9-30 a.m. of tide,

Locality, West coast of Florida

Exact position, Lat 25°-44'-32" N.
Long 83-10-15 W.

Depth, 31 faths.

Nature of bottom, fine S. & sponge

Dredging instrument used, hand dudge

Direction of drift, W.S.W.; distance, 1/10

Temperature of air, 56 therm. No., 6810

" of surface water, 70 " "

" at depth of fathoms, "

" at bottom, 68 " ~~1230~~ 54823

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5838

Barometer reading, 30.20

State of sky, Cloudy

Direction of wind, N.E. by N. force, fine

Rain, — —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5088

Dredge brings up sea-urchins star fish coral and broken shells.

One trial between last and this and no fish.

No fish felt at this station although there seems to be some life and if it was smooth to day, and the vessel was perfectly still I think a fish could be caught, but it is very evident that there is not an abundance here for when we are where they are plenty they snap at the baits very quickly

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5088

Date, March 11, 1889

Time of day, 11-05 A.M. of tide,

Locality, West coast of Florida

Exact position, Lat 25-44-32 N
Long 83-21-15 W.

Depth, 34 faths

Nature of bottom, fine S.

Dredging instrument used, hand dredge

Direction of drift, W.S.W. ; distance, 1/10

Temperature of air, 60 therm. No., 6810

" of surface water, 73 " "

" at depth of fathoms, "

" at bottom, 69 " ~~+230~~ 54823

Density at surface, 26.4 temp., 73

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.20

State of sky, B. C

Direction of wind, N.N.E ; force, Six

Rain, — —

Direction of surface current, — ; force, —

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S. F. Comm

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5087

Dredge brought up
a small amount of algae

No fish can be caught
along here

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5089

Date, Mar. 11. 1889

Time of day, 12-40 M; of tide,

Locality, West coast of Florida

Exact position, Lat 25-41 N.
Long 83-32 W

Depth, 38 faths.

Nature of bottom, fine S. & Sh.

Dredging instrument used, hand dredge

Direction of drift, W. S. W.; distance, 1/10 mile

Temperature of air, 60 therm. No., 6810

" of surface water, 73 " "

" at depth of fathoms, "

" at bottom, 68.5 " ~~1230~~ 54823

Density at surface, 26.4 temp., 73

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.14

State of sky, Overcast

Direction of wind, N. E. by E. force, six

Rain, —

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5090

Dredge brought up star fish and broken shells

No fish can be caught at this station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5190

Date, March 11, 1889

Time of day, 2-15 P.M.; of tide,

Locality, West coast of Florida

Exact position, Lat 25-44 N.
Long. 83-43 W.

Depth, 53 fathm

Nature of bottom, S. & Sh.

Dredging instrument used, hand dredge

Direction of drift, W. S. W.; distance, 1/10

Temperature of air, 58 therm. No., 68110

" of surface water, 69 " "

" at depth of fathoms, "

" at bottom, 68 " 54823 ~~12310~~

Density at surface, temp.,

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.10

State of sky, Overcast

Direction of wind, N.E. by N. force, fine

Rain,

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U.S.F. Comm

Name and rank of commanding officer, A.C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5 (191)

The dredge brought up broken shells

No fish, as usual, although it has been too rough for good trials, but I doubt that any amt. of fish could be caught here

A Porpoise was harpooned this P.M. The hide was tow and it was a poor specimen so did not save it

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5791

Date, March 11, 1889

Time of day, 5 P. M.; of tide,

Locality, West coast of Florida

Exact position, Lat. 25-50-15 N.
Long 83-41-30 W.

Depth, 49 faths

Nature of bottom, fine S. brk. Sh.

Dredging instrument used, hand dredge

Direction of drift, W. S. W.; distance, 1/10

Temperature of air, 55 therm. No., 6810

" of surface water, 68 " "

" at depth of fathoms, "

" at bottom, 68 " ~~1230~~ 54823

Density at surface, 27 temp., 68

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.12

State of sky, Overcast

Direction of wind, N. N. E.; force, four

Rain,

Direction of surface current, — ; force, —

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Commission

Name and rank of commanding officer, A. G. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5092

Dredge brings gray sand and gravel, with broken shells, a sea-urchin, star fish crab & sand flea all small

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March 11. 1889 Anchored at 7-05 P.M. for the night

Mar. 12. 1889

8 A.M. Stormy, so remain at anchor here, and try for fish

Trial No. 12 where fish were caught, gives us four large snappers and 2 large groupers this A.M. depth 4 0 fath. Lat. 25°-52 N. Long. 83-31 W. by this P.M. D. R. also 2 more snappers caught they seem quite plenty, but do not hold on well, or take the hook well. At 8 P.M. blowing fresh and vessel went adrift, intended to dredge and take temperatures at the above positon if we had not gone adrift, drifted N. W. 2 miles and fetche up. 1 large snapper and 1 grouper caught this A.M. the 13th Lat. 25-53 Long. 83-32

No 12	No.	Average	Length	Weight
Snappers	4	"	31 1/2 In	18 1/4 lbs
Groupers	2	"	33 "	19 "
No. 13 Snap	1	"	32 "	20 "
Group	1	"	38	23

no fish at this station

643

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5092

Date, March 18, 1889

Time of day, 8-25 A.M.; of tide,

Locality, West Coast of Florida

Exact position, Lat. 25-54 N.
Long 83-21 W.

Depth, 31 fathoms

Nature of bottom, ~~gray~~ S. blk. sp. brk Sh.

Dredging instrument used, hand dredge

Direction of drift, E.S.E ; distance, 1/8

Temperature of air, 66 therm. No., 6810

" of surface water, 70 " "

" at depth of fathoms, "

" at bottom, 69 " ~~1230~~ 54823

Density at surface, 27 temp., 70

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 29.88

State of sky, B. C

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

Rain, — —

Direction of surface current, N. E. ; force, .5 mile

" of bottom " ; force,

Name of vessel, Schr. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5083

Dredge brings up gray sand, black gravel, broken shells sea-mat. one shrimp one star fish &c.

No fish caught from last station to this

Nothing fell at this station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5193

Date, March 16, 1889

Time of day, 11-45 a.m. of tide,

Locality, West coast of Florida

Exact position, Lat — 25-54-02 N.

Long 83-09

Depth, 28 fathm.

Nature of bottom, S. brk. Sh. bk Spks.

Dredging instrument used, hand dredge

Direction of drift, E. N. E. ; distance, 1/10

Temperature of air, 70 therm. No., 6811

" of surface water, 71 " "

" at depth of fathoms, " 54823 ~~1230~~

" at bottom, 69 "

Density at surface, 26.4 temp., 71

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 29.88

State of sky, B

Direction of wind, W. by N. ; force, two

Rain, —

Direction of surface current, N. E. ; force, Probably .5 mile

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, Ale. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5114

Coarse gravel and broken shells come up in the dredge. also a compound ascidian ~~sponge~~ with a small crab in it.

Trial No. 14 when fish were caught, four lines were out. Three lines caught nothing 1 line caught 3 snappers they seem rather scattering for this is a fine day and between stations we get good soundings and no fish

3 Snappers	Av. length 24 3/8 in	Av. Weight 8 1/3 lbs

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5094

Date, March 15, 1889

Time of day, 2-45 P.M. of tide,

Locality, West coast of Florida

Exact position, 25°-54'-02" N. Lat.
82°-58' W. Long

Depth, 25 fathoms.

Nature of bottom, Sh. & Co.

Dredging instrument used, hand dredge

Direction of drift, E. ; distance, 1/10 mile

Temperature of air, 75 therm. No., 6810

" of surface water, 65 " "

" at depth of fathoms, "

" at bottom, 67 " ~~1230~~ 54823

Density at surface, 26.4 temp., 67

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 29.85

State of sky, B

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

Rain, —

Direction of surface current, Probably very slight ; force,

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm.

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5095

Gray mud, a shrimp, a crab and an eel came up in the dredge

No fish caught between last station and this

We anchor at this station for the night.

Mar. 16, 1882

No fish can be caught here this morning

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5095

Date, March 15, 1889

Time of day, 6 PM. ; of tide,

Locality, West coast Florida

Exact position, Lat 25-54 N.
Long 82°-42'-65" W. by Ch.

Depth, 20 1/2 faths

Nature of bottom, gray mud

Dredging instrument used, hand dredge

Direction of drift, E. S. E ; distance, 1/14

Temperature of air, 64 therm. No., 68/19

" of surface water, 65 " "

" at depth of fathoms, " "

" at bottom, 65.5 " 54823 ~~1230~~

Density at surface, 26.4 temp., 66

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 29.87

State of sky, P. C.

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

Rain, ——

Direction of surface current, ; force,

" of bottom " ; force,

Name of vessel, Schr Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5096

Dredge brings up sandy mud

March 16, 1895 at 6 A.M. got under way and stand East trying for fish, wind moderate

No 15

A small grouper was caught at 10 A.M. Lat 25°-5'-4" S. Long. 82°-40' W. depth 19 fathoms hard. No fish at this station

1	Grouper	length 19 in	weight 4½ lbs

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5096

Date, March 16, 1889

Time of day, 3 P. M. ; of tide,

Locality, West coast coast Fla.

Exact position, 25-54 N. Lat

Long 82-29

Depth, 16 faths.

Nature of bottom, grey S. & M.

Dredging instrument used, hand dredge

Direction of drift, E. S. E. ; distance, 1/14 miles

Temperature of air, 74 therm. No., 6810

" of surface water, 65 "

" at depth of fathoms, "

" at bottom, 66.5 " 54823 ~~4230~~

Density at surface, 26.3 temp., 68

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 29.97

State of sky, b

Direction of wind, S. W. ; force, one

Rain, —

Direction of surface current, — ; force, —

" of bottom " — ; force, —

Name of vessel, Schr. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5117

Dredge brings broken shells, and a shrimp

Not a fish caught at this station

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5097

Date, March 17, 1889

Time of day, 11 a.m. ; of tide,

Locality, West coast Florida

Exact position, Lat 26°-11' N.
Long 82°-27' W.

Depth, 12 fathm.

Nature of bottom, fine gray sand

Dredging instrument used, hand dredge

Direction of drift, S. S. W. ; distance, 1/10

Temperature of air, 76 therm. No., 6810

" of surface water, 65 " "

" at depth of fathoms, "

" at bottom, 65 " ~~1230~~ 54823

Density at surface, 26.4 temp., 67

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 30.04

State of sky, b.

Direction of wind, E. S. E ; force, ~~two~~

Rain, — — —

Direction of surface current, N.E. ~~very~~ ; force, slight

" of bottom " — ; force, —

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, A. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO. 5098

The dredge brought up coarse sponge, and crabs.

No 16

One grouper caught at this station, nothing caught from 5097 to this station

	Length	Weight
1 Grouper	23½ In	6 lbs

RECORD OF DREDGING,

TEMPERATURE AND DENSITY.

Station No. 5098

Date, March 17, 1889

Time of day, 2 P. M. ; of tide,

Locality, West coast Florida

Exact position, Lat. 26-07-30 N.
Long 82-38 W.

Depth, 18 faths

Nature of bottom, hard S.

Dredging instrument used, hand dredge

Direction of drift, W. N. W.; distance, 1/10 mile

Temperature of air, 71.5 therm. No., 6810

" of surface water, 65 " "

" at depth of fathoms, "

" at bottom, 66 " 54823 ~~1236~~

Density at surface, 26.2 temp., 67

" at depth of fathoms, "

" at bottom, "

Number of salinometer, 5338

Barometer reading, 29.98

State of sky, b.

Direction of wind, S. E. by E.; force, three

Rain, —

Direction of surface current, N. E ; force, very slight

" of bottom " ; force,

Name of vessel, Sch. Grampus

Service to which attached, U. S. F. Comm

Name and rank of commanding officer, H. C. Adams

Name and position of observer,

NOTES RELATING TO STATION NO._____