Nancy S.
#94004

BRANCH OF ATLANTIC MARINE GEOLOGY
U.S. GEOLOGICAL SURVEY
Woods Hole, MA 02543

CRUISE REPORT

January 3, 1995

Ship name: NOAA Ship Ferrel

Cruise no: 9409

Project: Sea Floor Habitat Mapping

Funding agency: USGS, NOAA

Areas of operations:
Stellwagen Bank National Marine Sanctuary

Cruise dates: October 11-16, 23-25, 1994

Chief scientist: Page Valentine

Scientific party: Page Valentine, USGS
Dann Blackwood, USGS
Eric Schmuck, USGS
Ken Parolski, USGS

Ship's captain: John Novaro

Cruise purposes:

Document the character and distribution of fisheries habitats in the southeastern part of Stellwagen Bank NMS using sidescan sonar and bottom observations with video and still cameras and samplers. Resurvey and resample selected areas on the bank crest and southwestern part that were studied in April 1993 and September 1993; evaluate changes in dredge disturbance patterns on the sea bed. Data will be used to compile maps of sea floor sediment distribution and biological habitats.

Navigation: USGS GPS, and differential GPS

Scientific equipment:
100 kHz sidescan sonar; video and still cameras; bottom sampler

Stations occupied: (see attached sheets)

Bottom sample stations: 133 attempted, 122 successful
Bottom video camera stations: 133
Bottom still camera stations: 52
Sidescan sonar: total of 622 km of tracklines and an area of 102 km^2 mapped

Sample processing and archival:

Sidescan sonar data, sediment grab samples, video tapes, and still photos will be processed and archived by the USGS, Woods Hole, MA.

Preliminary results:

Previous cruises have imaged the southwestern part of Stellwagen Bank, and this cruise expanded sidescan sonar coverage to the eastward. Bottom sediment is coarse sand and gravel on the southeastern part of the bank, and it is the source of sand that is moved westward during large storms from the northeast. Several sidescan lines that were surveyed in April and September 1993 were resurveyed on this cruise. The distribution of storm deposits has not changed since the earlier surveys, and no large northeasters have occurred since December 1992. These observations support the hypothesis that the bank surface is unaffected by tidal currents and minor storms. Large storms and fishing gear (dredges and trawls) apparently are the major causes of habitat disturbance on the bank.

Ferrel 9409 Stations
Gear: USGS modified Van Veen grab with video and still cameras

Sta	Lat N	Long	Depth (m)	Video	Still	Sample
890	42 13.0952	70 17.8097	32.1	x	x	x
891	42 13.1656	70 17.2520	28.7	x	x	x
892	42 13.1452	70 16.9026	28.2	x	x	x
893	42 13.1530	70 16.4401	27.2	x	x	-
893A	42 13.2380	70 16.4753	27.5	x	x	x
894	42 13.4262	70 16.3276	27.9	x	-	x
895	42 13.1286	70 15.7384	27.4	x	x	x
896	42 13.1280	70 14.9211	27.4	x	x	x
897	42 13.1225	70 14.3488	29.2	x	x	x
898	42 13.1591	70 13.7778	31.4	x	x	x
899	42 13.1521	70 13.1357	34.3	x	x	x
900	42 13.1443	70 12.4018	36.4	x	x	-
900A	42 13.1792	70 12.4059	37.2	x	x	x
901	42 13.0707	70 11.7835	38.4	x	x	-
901A	42 13.0919	70 11.8507	38.1	x	x	x
902	42 13.0770	70 11.0197	40.8	x	-	-
902A	42 12.9537	70 10.9536	41.0	x	-	x
903	42 13.7000	70 11.4000	40.2	x	x	-
903A	42 13.7000	70 11.4000	40.2	x	-	x
904	42 13.6602	70 11.7198	38.7	x	-	x
905	42 13.5943	70 12.3304	36.0	x	x	x
906	42 13.5076	70 12.8877	33.6	x	x	-
906A	42 13.4538	70 12.8102	34.0	x	-	x
907	42 13.6585	70 13.8278	29.6	x	x	-
907A	42 13.6117	70 13.7820	29.7	x	-	x
908	42 13.6506	70 14.4320	27.7	x	x	x
909	42 13.6643	70 15.0744	26.5	x	x	x
910	42 13.6466	70 15.7093	25.7	x	x	x
911	42 13.6197	70 16.3381	25.3	x	-	x
912	42 13.6363	70 16.7306	25.3	x	-	x
913	42 13.6285	70 17.4398	26.8	x	x	x
914	42 13.8338	70 17.0018	26.4	x	x	x
915	42 14.3570	70 17.7443	30.4	x	-	x
916	42 14.5825	70 17.3783	28.1	x	x	x
917	42 14.3745	70 17.2089	27.5	x	-	x
918	42 14.4877	70 16.7359	27.1	x	-	x
919	42 14.4745	70 15.4507	27.9	x	-	x
920	42 14.4617	70 14.9310	28.5	x	x	x
921	42 14.5084	70 14.5047	29.4	x	-	x
922	42 14.4703	70 14.2128	30.5	x	-	x
923	42 14.4660	70 13.5580	32.9	x	x	x
924	42 14.5402	70 12.8781	36.0	x	-	-
924A	42 14.5024	70 12.9107	36.0	x	-	x
956	42 14.1024	70 13.1254	34.5	x	-	x
957	42 14.1763	70 12.3230	38.4	x	-	x
925	42 14.5103	70 12.2735	39.0	x	-	x
926	42 14.4395	70 11.7630	40.7	x	x	x
927	42 14.4676	70 11.4509	42.2	x	-	-
927A	42 14.5581	70 11.4041	42.5	x	-	x
928	42 14.8970	70 11.4100	43.1	x	-	x

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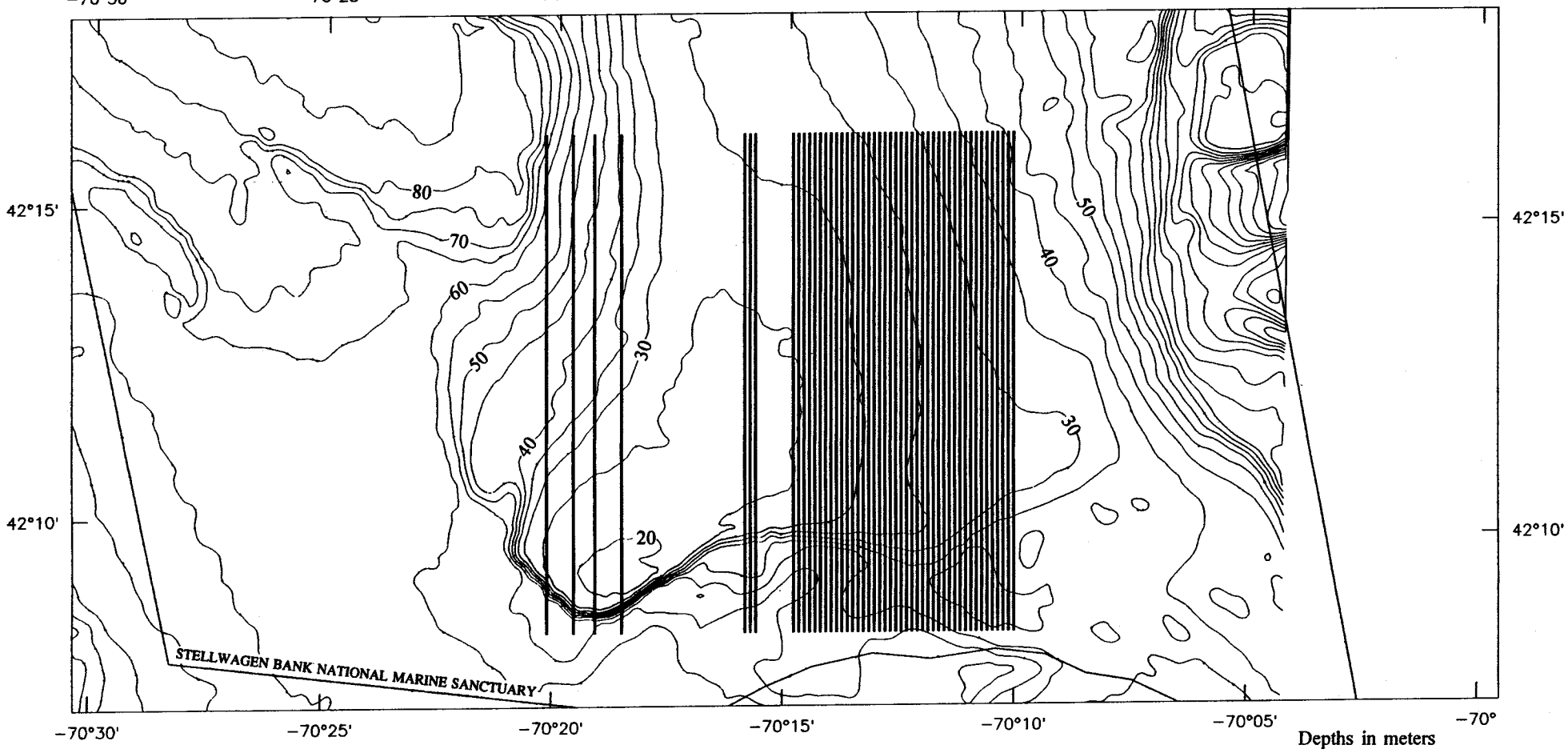
Gear: USGS modified Van Veen grab with video and still cameras

Sta	Lat N	Long	Depth (m)	Video	Still	Sample
929	42 14.9192	70 11.9517	40.8	x	-	x
930	42 14.9099	70 12.6364	38.3	x	-	-
930A	42 14.9736	70 12.4548	38.8	x	-	x
931	42 14.9188	70 13.3308	35.3	x	-	x
932	42 14.9434	70 13.9786	33.6	x	-	x
958	42 10.6226	70 20.9904	49.8	x	x	x
964	42 10.7848	70 20.9767	46.6	x	x	-
964A	42 10.8815	70 20.0301	33.9	x	x	x
965	42 10.8658	70 20.4747	40.3	x	x	x
966	42 10.9139	70 20.8427	43.5	x	-	x
967	42 10.8421	70 21.2786	44.4	x	-	x
968	42 10.7413	70 21.5624	44.8	x	-	x
969	42 10.8855	70 22.0084	60.0	x	-	x
970	42 11.1697	70 21.8787	48.7	x	-	x
971	42 11.0673	70 22.4818	63.1	x	-	x
972	42 10.9218	70 22.9127	62.8	x	-	x
973	42 10.9854	70 23.3280	68.0	x	x	x
974	42 11.5872	70 22.2201	51.0	x	x	x
975	42 11.8924	70 22.3540	53.8	x	x	x
976	42 11.7520	70 22.9579	62.4	x	x	x
977	42 11.7872	70 23.3417	63.4	x	x	x
980	42 12.7185	70 22.4313	59.4	x	x	x
979	42 12.4781	70 23.0273	63.5	x	x	x
978	42 12.5853	70 23.3671	64.0	x	x	x
981	42 12.8996	70 23.3632	64.7	x	x	x
982	42 12.8645	70 22.8036	62.1	x	x	x
983	42 12.9061	70 22.5427	61.0	x	-	x
984	42 12.8860	70 21.8310	54.2	x	-	x
985	42 12.8690	70 21.1628	50.3	x	x	x
986	42 12.8929	70 20.7383	48.1	x	x	x
987	42 12.8505	70 20.3293	45.3	x	x	x
988	42 12.7304	70 20.1943	44.6	x	-	x
989	42 12.8243	70 19.6962	43.4	x	-	x
990	42 12.8363	70 19.1757	39.9	x	-	x
991	42 12.8380	70 18.8219	38.9	x	-	x
992	42 12.9882	70 18.3932	36.9	x	-	x
993	42 13.8287	70 18.4194	35.7	x	-	x
994	42 13.4291	70 18.7932	40.1	x	-	x
995	42 13.6769	70 19.3056	45.4	x	-	x
996	42 13.2819	70 19.3906	44.9	x	-	x
997	42 13.2065	70 20.2460	48.6	x	-	x
998	42 13.1062	70 20.3853	48.7	x	-	x
999	42 13.0647	70 20.7053	50.5	x	-	x
1000	42 13.0482	70 20.8328	50.5	x	-	x
1001	42 13.1715	70 21.2299	55.3	x	-	x
1001A	42 13.2770	70 21.2306	55.4	x	-	x
1002	42 13.0954	70 22.0419	57.9	x	-	x
1003	42 13.3078	70 22.4497	62.1	x	-	x

Ferrel 9409 Stations
Gear: USGS modified Van Veen grab with video and still cameras

Sta	Lat N		Long		Depth (m)	Video	Still	Sample
1004	42	13.5011	70	22.4307	62.6	x	-	x
1005	42	13.2600	70	21.8758	58.0	x	-	x
1006	42	13.3355	70	21.5527	53.7	x	-	x
1007	42	13.3520	70	20.9117	53.1	x	-	x
1008	42	13.6105	70	20.5056	53.8	x	-	x
1009	42	13.7805	70	20.0204	51.8	x	-	x
1010	42	14.0355	70	19.9793	53.9	x	-	x
1022	42	10.2482	70	22.0031	60.8	x	x	x
958A	42	10.0721	70	20.9707	55.3	x	x	x
959	42	10.3501	70	21.0240	52.2	x	x	x
809	42	10.6747	70	20.8967	45.4	x	x	x
812	42	10.9460	70	21.6565	43.4	x	x	x
810	42	12.0622	70	20.7962	42.8	x	-	x
811	42	12.3418	70	22.2730	56.8	x	-	x
1023	42	12.6214	70	22.3113	57.7	x	-	x
1011	42	13.8793	70	21.2807	60.3	x	x	x
1014	42	14.0542	70	21.5753	64.5	x	-	x
1012	42	13.8308	70	21.5661	60.8	x	-	x
1013	42	13.8814	70	21.9539	62.0	x	x	x
1015	42	14.0596	70	21.9412	65.3	x	x	x
1027	42	14.3477	70	22.0966	68.7	x	-	x
1016	42	14.0195	70	22.6730	62.2	x	-	x
1017	42	14.2195	70	22.9652	65.0	x	-	x
1024	42	13.6395	70	23.1915	67.2	x	-	x
1025	42	13.5861	70	23.5474	69.1	x	-	x
1026	42	14.2495	70	23.5298	68.2	x	-	x
1018	42	14.6162	70	23.4888	69.9	x	-	x
1019	42	14.8859	70	23.5391	77.3	x	-	x
1020	42	15.6270	70	23.3951	85.2	x	-	x
1021	42	15.6249	70	22.9074	85.5	x	-	x
1028	42	15.1738	70	22.3666	79.8	x	-	x
1029	42	15.2848	70	21.6227	82.4	x	-	x
1030	42	15.7352	70	21.9829	85.7	x	-	x
1031	42	15.7169	70	21.0059	83.0	x	-	x
1032	42	15.7619	70	20.3872	69.4	x	-	x

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