

Dive Code: 1990 Heceta Bank, Station 1, Dive A (90H1A)

Delta Dive: 2097

Date: 9/17/90

Time: 1538-1645

Minimum Depth: 231 ft (70 m)

Maximum Depth: 291 ft (89 m)

Remarks: 40+ feet visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes helvomaculatus</u>	243.2	---	4.6	167.5	71.1	---	---	---
<u>Sebastes wilsoni</u>	160.6	158.3	2.3	---	---	---	---	---
<u>Rathbunella</u> sp.	48.2	---	48.2	---	---	---	---	---
<u>Hexagrammos decagrammus</u>	29.8	---	---	---	2.3	27.5	---	---
<u>Sebastes flavidus</u>	16.1	---	---	---	2.3	13.8	---	---
<u>Paricelius hopliticus</u>	13.8	---	13.8	---	---	---	---	---
<u>Sebastes ruberrimus</u>	9.2	---	---	---	---	6.9	2.3	---
unknown small flatfish	6.9	6.9	---	---	---	---	---	---
<u>Coryphopterus nicholsii</u> (?)	4.6	---	4.6	---	---	---	---	---
<u>Hydrolagus colliei</u>	2.3	---	---	---	---	2.3	---	---
<u>Sebastes pinniger</u>	2.3	---	---	---	---	---	2.3	---
<u>Ophiodon elongatus</u>	2.3	---	---	---	---	---	2.3	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	3946.3	3946.3	---	---	---	---	---	---
<u>Sebastes flavidus</u>	68.8	---	---	---	---	---	68.8	---
ALL FISHES:								
Total density:	4554.3							
Diversity indices:	Richness (S) = 11	Evenness (J) = 0.19	Diversity (H') = 0.45					

INVERTEBRATES: (83.26 % of videotape usable)

	Estimated density (#/hectare)
<u>Scypha/Iophon</u>	35122.2
<u>Henricia</u> sp.	252.4
<u>Parastichopus</u> spp.	188.1
<u>Gorgonocephalus eucinemis</u>	73.4
<u>Mediaster aequalis</u>	50.5
<u>Gephyreaster swifti</u>	34.4
<u>Hippasterias</u> spp.	27.5
<u>Archidoris odhneri</u>	20.6
<u>Pycnopodia/Rathbunaster</u>	13.8
<u>Aphrocallistes</u> -like	11.5
Ophiurida	11.5
<u>Ceremaster patagonicus</u>	6.9
<u>Pteraster</u> spp.	6.9
<u>Allocentrotus fragilis</u>	4.6
<u>Poraniopsis inflata</u>	4.6
<u>Allopora californica</u>	2.3
<u>Corallimorphus?</u>	2.3
<u>Evasterias troschelii</u>	2.3
<u>Lophaster/Asterias</u>	2.3
<u>Ophiacantha</u> sp.	2.3
Pachastrellidae-like	2.3
<u>Urticina piscivora</u>	2.3

Diversity indices: Richness (S) = 22 Evenness (J) = 0.04 Diversity (H') = 0.14

OTHER ORGANISMS PRESENT:

Encrusting Red Algae

(Dive 90H1A continued)

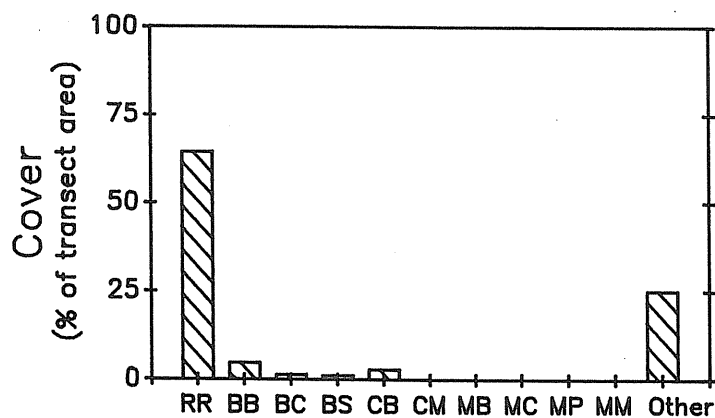
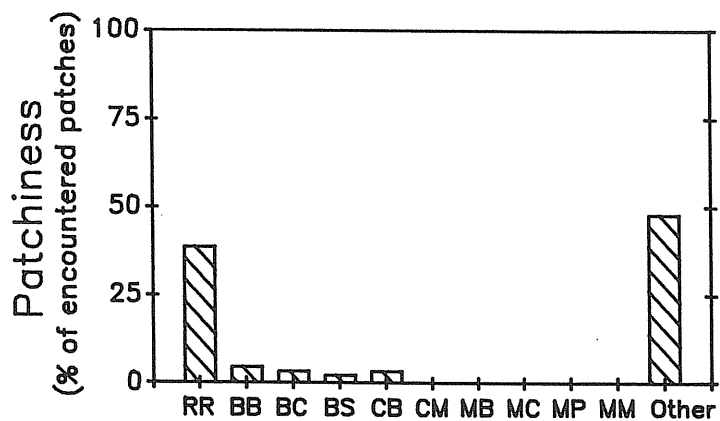
BOTTOM TYPE: (82% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
RR	Rock Ridge	64.5	38.6
CC	Cobble	8.6	12.5
SS	Sand	6.3	17.0
BB	Boulder	4.8	4.5
CS	Cobble + Sand	4.0	5.7
CB	Cobble + Boulder	2.9	3.4
SC	Sand + Cobble	2.7	5.7
PS	Pebble + Sand	1.9	2.3
BC	Boulder + Cobble	1.5	3.4
BS	Boulder + Sand	1.2	2.3
PC	Pebble + Cobble	0.8	1.1
SR	Sand + Rock Ridge	0.4	1.1
CP	Cobble + Pebble	0.4	2.3

Richness (S) = 13

Patchiness: Evenness (J) = 0.77 Diversity (H') = 1.98

Cover: Evenness (J) = 0.55 Diversity (H') = 1.42



Bottom type

Dive Code: 1990 Heceta Bank, Station 1, Dive B (90H1B)

Delta Dive: 2098

Date: 9/17/90

Time: 1733-1845

Minimum Depth: 220 ft

Maximum Depth: 280 ft

Remarks: 50-60 feet visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes helvomaculatus</u>	125.1	---	20.1	84.9	20.1	---	---	---
<u>Sebastes wilsoni</u>	64.8	55.8	6.7	2.2	---	---	---	---
<u>Lycodes cortezianus</u>	13.4	---	13.4	---	---	---	---	---
unknown fish	11.2	8.9	2.2	---	---	---	---	---
<u>Sebastes</u> sp. (juvenile)	11.2	8.9	2.2	---	---	---	---	---
unknown mottled sculpin	11.2	---	11.2	---	---	---	---	---
<u>Sebastes flavidus</u>	8.9	---	---	---	4.5	4.5	---	---
<u>Sebastes ruberrimus</u>	8.9	---	---	---	---	4.5	2.2	2.2
<u>Hexagrammos decagrammus</u>	8.9	---	---	---	4.5	4.5	---	---
<u>Hydrolagus colliei</u>	4.5	---	---	---	---	4.5	---	---
<u>Icelinus filamentosus</u>	4.5	---	4.5	---	---	---	---	---
<u>Rathbunella</u> sp.	4.5	2.2	2.2	---	---	---	---	---
<u>Sebastes pinniger</u>	2.2	---	---	---	---	2.2	---	---
<u>Ophiodon elongatus</u>	2.2	---	---	---	---	---	---	2.2

SCHOOLING FISHES:

<u>Sebastes wilsoni</u>	6362.1	3459.1	2903.0	---	---	---	---	---
<u>Sebastes</u> sp. (juvenile)	357.3	357.3	---	---	---	---	---	---

ALL FISHES:

Total density: 7000.7

Diversity indices: Richness (S) = 12 Evenness (J) = 0.07 Diversity (H') = 0.17

INVERTEBRATES: (80.2 % of videotape usable)

	Estimated density (#/hectare)
<u>Scypha/Iophon</u>	19876.7
<u>Ophiacantha</u> sp.	305.9
<u>Parastichopus</u> spp.	263.5
<u>Henricia</u> sp.	196.5
<u>Gorgonocephalus eucinemis</u>	75.9
<u>Mediaster aequalis</u>	75.9
<u>Gephyreaster swifti</u>	42.4
<u>Archidoris odhneri</u>	35.7
<u>Pycnopodia/Rathbunaster</u>	33.5
<u>Ceremaster patagonicus</u>	20.1
<u>Allocentrotus fragilis</u>	13.4
<u>Evasterias troschelii</u>	8.9
<u>Lophaster/Asterias</u>	6.7
<u>Lophogorgia</u> -like	6.7
<u>Allopora californica</u>	4.5
<u>Aphrocallistes</u> -like	4.5
<u>Henricia sanguinolenta</u>	4.5
<u>Poraniopsis inflata</u>	4.5
<u>Pteraster</u> spp.	4.5
<u>Laqueus californianus</u>	2.2
Pachastrellidae-like	2.2
<u>Stylasterias forreri</u>	2.2

Diversity indices: Richness (S) = 22 Evenness (J) = 0.10 Diversity (H') = 0.32

OTHER ORGANISMS PRESENT:

Codium sp.
Encrusting Red Algae

(Dive 90H1B continued)

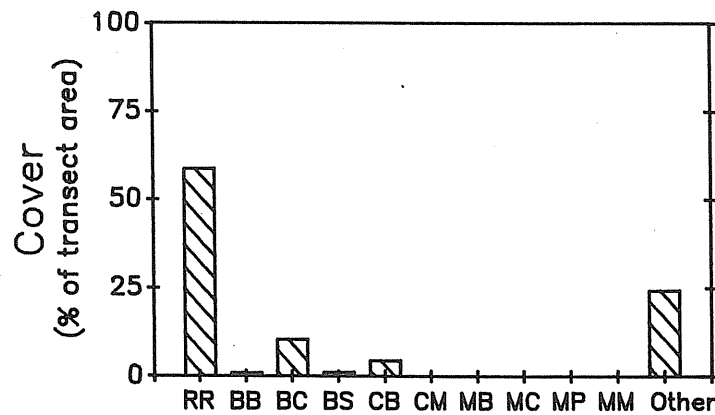
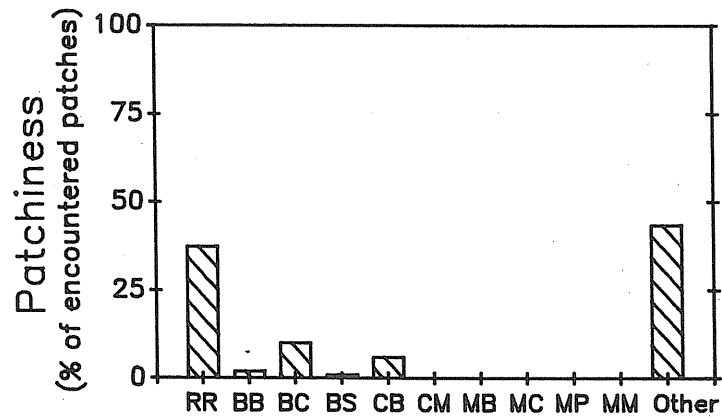
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
RR	Rock Ridge	58.7	37.4
BC	Boulder + Cobble	10.4	10.1
CC	Cobble	9.5	13.1
SC	Sand + Cobble	6.1	10.1
CB	Cobble + Boulder	4.5	6.1
SS	Sand	3.0	13.1
CS	Cobble + Sand	2.8	4.0
PC	Pebble + Cobble	1.8	1.0
BS	Boulder + Sand	1.1	1.0
BB	Boulder	1.0	2.0
BR	Boulder + Rocky Ridge	0.8	1.0
SB	Sand + Boulder	0.3	1.0

Richness (S) = 12

Patchiness: Evenness (J) = 0.78 Diversity (H') = 1.93

Cover: Evenness (J) = 0.61 Diversity (H') = 1.51



Bottom type

Dive Code: 1990 Heceta Bank, Station 2, Dive A (90H2A)

Delta Dive: 2095

Date: 9/17/90

Time: 0933-1108

Minimum Depth: 488 ft (149 m)

Maximum Depth: 525 ft (160 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	179.0	---	40.2	138.8	---	---	---	---
<u>Sebastes helvomaculatus</u>	104.1	---	23.7	69.4	11.0	---	---	---
<u>Sebastes elongatus</u>	76.7	---	7.3	32.9	31.0	5.5	---	---
unknown mottled sculpin	49.3	---	32.9	11.0	5.5	---	---	---
<u>Lycodes cortezianus</u>	36.5	---	20.1	16.4	---	---	---	---
<u>Glyptocephalus zachirus</u>	31.0	---	---	5.5	20.1	5.5	---	---
<u>Lyopsetta exilis</u>	25.6	---	21.9	3.7	---	---	---	---
<u>Microstomus pacificus</u>	21.9	---	3.7	5.5	11.0	1.8	---	---
<u>Sebastes zacentrus</u>	14.6	---	---	14.6	---	---	---	---
<u>Rathbunella</u> sp.	14.6	---	14.6	---	---	---	---	---
<u>Icelinus filamentosus</u>	11.0	---	3.7	5.5	1.8	---	---	---
<u>Agonus acipenserinus</u>	9.1	---	1.8	7.3	---	---	---	---
unknown fish	5.5	---	1.8	1.8	---	---	---	---
unknown mottled poacher	5.5	---	1.8	3.7	---	---	---	---
unknown flatfish	3.7	---	---	1.8	1.8	---	---	---
<u>Eptatretus</u> sp.	3.7	---	---	---	3.7	---	---	---
unknown small flatfish	1.8	---	1.8	---	---	---	---	---
<u>Hydrolagus colliei</u>	1.8	---	---	---	---	---	1.8	---
<u>Raja binoculata</u>	1.8	---	---	---	---	---	---	1.8
<u>Sebastes chlorostictus</u>	1.8	---	---	---	---	---	1.8	---
<u>Sebastes pinniger</u>	1.8	---	---	---	---	1.8	---	---
<u>Parophrys vetulus</u>	1.8	---	---	---	---	---	1.8	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	241.0	21.9	91.3	127.8	---	---	---	---
<u>Lycodes cortezianus</u>	1.8	---	---	1.8	---	---	---	---
ALL FISHES:								
Total density:	845.5							
Diversity indices:	Richness (S) = 19	Evenness (J) = 0.62	Diversity (H') = 1.83					

INVERTEBRATES: (100.0 % of videotape usable)

	Estimated density (#/hectare)
<u>Allocentrotus fragilis</u>	6822.1
<u>Scypha/Lophon</u>	268.4
<u>Ophiacantha sp.</u>	226.4
<u>Aphrocallistes-like</u>	38.3
<u>Pachastrellidae-like</u>	34.7
<u>Staurocalyptus-like</u>	25.6
<u>Lopholithodes foraminatus</u>	23.7
<u>Ophiura sarsii</u>	16.4
<u>Luidia foliolata</u>	12.8
<u>Mediaster aequalis</u>	5.5
Neptuneidae	5.5
<u>Florometra serrastissima</u>	3.7
<u>Swiftia sp.</u>	3.7
<u>Henricia sp.</u>	1.8
<u>Lophaster/Asterias</u>	1.8
<u>Poraniopsis inflata</u>	1.8

Diversity indices:

Richness (S) = 16

Evenness (J) = 0.16

Diversity (H') = 0.45

OTHER ORGANISMS PRESENT:

None

(Dive 90H2A continued)

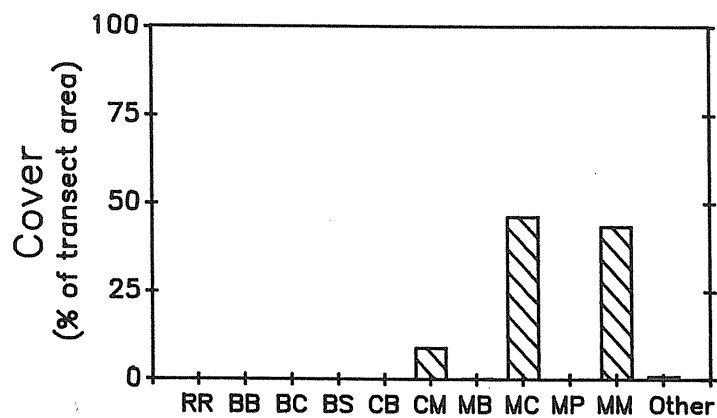
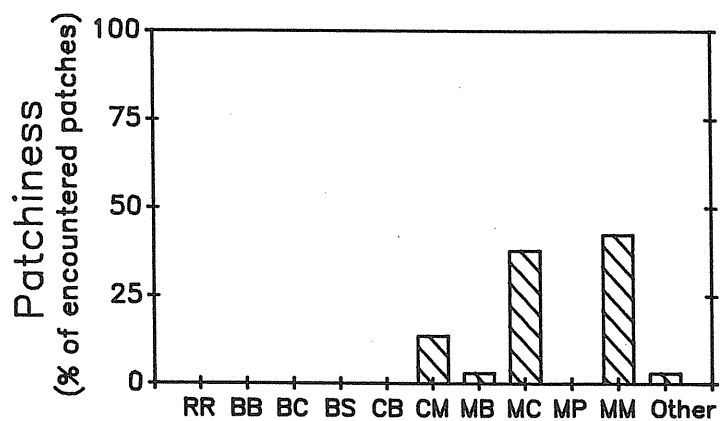
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MC	Mud + Cobble	46.3	37.9
MM	Mud	43.4	42.4
CM	Cobble + Mud	9.0	13.6
BM	Boulder + Mud	1.0	3.0
MB	Mud + Boulder	0.3	3.0

Richness (S) = 5

Patchiness: Evenness (J) = 0.75 Diversity (H') = 1.21

Cover: Evenness (J) = 0.62 Diversity (H') = 1.00



Bottom type

Dive Code: 1990 Heceta Bank, Station 2, Dive B (90H2B)

Delta Dive: 2096

Date: 9/17/90

Time: 1211-1329

Minimum Depth: 480 ft (146 m)

Maximum Depth: 520 ft (158 m)

Remarks: Poor visibility (10-20 feet)

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	175.7	---	52.7	107.2	15.8	---	---	---
<u>Sebastes helvomaculatus</u>	135.3	---	42.2	86.1	5.3	---	---	---
<u>Sebastes elongatus</u>	124.8	---	3.5	68.5	51.0	1.8	---	---
<u>Sebastes zacentrus</u>	94.9	---	36.9	58.0	---	---	---	---
<u>Microstomus pacificus</u>	42.2	---	1.8	8.8	14.1	14.1	3.5	---
<u>Rathbunella</u> sp.	40.4	---	40.4	---	---	---	---	---
unknown mottled sculpin	38.7	---	38.7	---	---	---	---	---
<u>Glyptocephalus zachirus</u>	12.3	---	---	1.8	10.5	---	---	---
<u>Icelinus</u> sp. (?)	10.5	---	---	10.5	---	---	---	---
unknown flatfish	7.0	---	---	5.3	---	---	---	---
<u>Agonus acipenserinus</u>	7.0	---	1.8	5.3	---	---	---	---
<u>Parophrys vetulus</u>	5.3	---	---	1.8	3.5	---	---	---
unknown fish	3.5	---	1.8	---	---	---	---	---
<u>Eptatretus</u> sp.	3.5	---	---	1.8	1.8	---	---	---
<u>Sebastes</u> sp. (blotched)	3.5	---	3.5	---	---	---	---	---
<u>Sebastes</u> sp. (large)	3.5	---	1.8	1.8	---	---	---	---
unknown mottled poacher	3.5	---	1.8	1.8	---	---	---	---
<u>Raja binoculata</u>	1.8	---	---	---	---	---	---	1.8
<u>Lycodes corteziianus</u>	1.8	---	1.8	---	---	---	---	---
<u>Sebastes chlorostictus</u>	1.8	---	---	---	---	---	1.8	---
<u>Sebastes diploproa</u>	1.8	---	---	---	---	1.8	---	---
unknown blenny-like fish	1.8	---	---	1.8	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes pinniger</u>	43.9	---	---	---	---	---	43.9	---
<u>Sebastes wilsoni</u>	17.6	---	---	17.6	---	---	---	---
<u>Sebastes zacentrus</u>	17.6	---	---	17.6	---	---	---	---

ALL FISHES:

Total density: 799.6

Diversity indices: Richness (S) = 22 Evenness (J) = 0.71 Diversity (H') = 2.21

INVERTEBRATES: (100.0 % of videotape usable)

	Estimated density (#/hectare)
<u>Allocentrotus fragilis</u>	2966.5
<u>Ophiacantha</u> sp.	548.3
<u>Scypha/Iophon</u>	45.7
Pachastrellidae-like	29.9
<u>Lopholithodes foraminatus</u>	28.1
<u>Aphrocallistes</u> -like	19.3
<u>Luidia foliolata</u>	12.3
<u>Staurocalyptus</u> -like	10.5
<u>Swiftia</u> sp.	3.5
<u>Dendronotus dalli</u>	1.8
<u>Octopus</u> sp.	1.8
<u>Foraniopsis inflata</u>	1.8
<u>Stomphia</u> sp.	1.8

Diversity indices: Richness (S) = 13 Evenness (J) = 0.26 Diversity (H') = 0.67

OTHER ORGANISMS PRESENT:

Beggiotoa spp. (bacterial mat)

(Dive 90H2B continued)

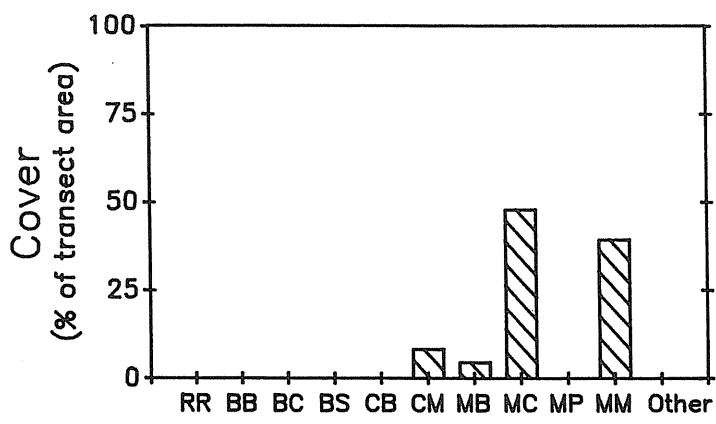
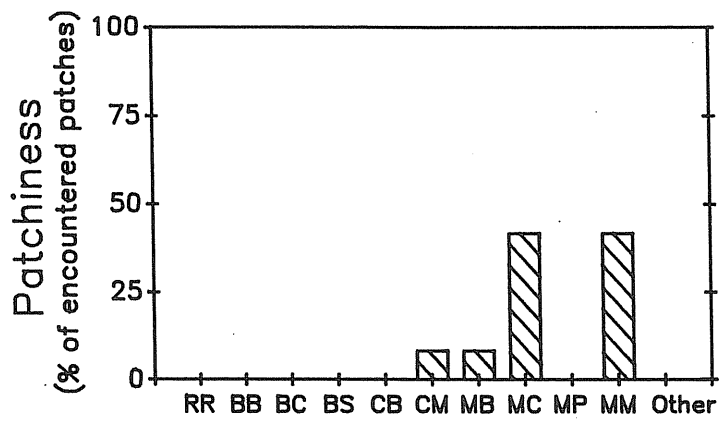
BOTTOM TYPE: (82% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MC	Mud + Cobble	47.8	41.7
MM	Mud	39.4	41.7
CM	Cobble + Mud	8.3	8.3
MB	Mud + Boulder	4.5	8.3

Richness (S) = 4

Patchiness: Evenness (J) = 0.82 Diversity (H') = 1.14

Cover: Evenness (J) = 0.77 Diversity (H') = 1.07



Bottom type

Dive Code: 1990 Heceta Bank, Station 3, Dive A (90H3A)

Delta Dive: 2089

Date: 9/16/90

Time: 0855-1012

Minimum Depth: 240 ft (73 m)

Maximum Depth: 440 ft (134 m)

Remarks: 50 feet visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes helvomaculatus</u>	88.0	---	39.1	43.0	2.0	---	---	---
unknown mottled sculpin	88.0	---	58.6	2.0	---	---	---	---
<u>Sebastes wilsoni</u>	84.1	---	45.0	3.9	---	---	---	---
<u>Sebastes elongatus</u>	58.6	---	7.8	43.0	5.9	---	---	---
<u>Sebastes flavidus</u>	29.3	---	---	---	3.9	19.5	5.9	---
unknown flatfish	15.6	---	3.9	9.8	---	---	---	---
<u>Paricelius hopliticus</u>	15.6	---	11.7	---	---	---	---	---
unknown blenny-like fish	9.8	---	5.9	---	---	---	---	---
unknown fish	7.8	---	---	2.0	2.0	---	---	---
<u>Raja kincaidii</u>	3.9	---	---	---	2.0	---	---	2.0
<u>Sebastes</u> sp. (blotched)	3.9	---	---	---	---	---	---	---
<u>Sebastes</u> sp. (juvenile)	3.9	---	2.0	---	---	---	---	---
<u>Sebastes</u> sp. (large)	3.9	---	---	---	---	2.0	---	---
<u>Ophiodon elongatus</u>	3.9	---	---	---	---	---	---	3.9
<u>Citharichthys</u> sp.	3.9	---	3.9	---	---	---	---	---
<u>Eptatretus</u> sp.	2.0	---	---	---	---	2.0	---	---
<u>Hydrolagus colliei</u>	2.0	---	---	---	---	2.0	---	---
<u>Raja binoculata</u>	2.0	---	---	---	---	---	---	---
<u>Raja rhina</u>	2.0	---	---	---	---	---	---	2.0
<u>Sebastes babcocki</u>	2.0	---	---	---	---	2.0	---	---
<u>Sebastes chlorostictus</u>	2.0	---	---	---	---	---	2.0	---
<u>Sebastes diploproa</u>	2.0	---	---	---	2.0	---	---	---
<u>Sebastes ruberrimus</u>	2.0	---	---	---	---	---	2.0	---
<u>Hexagrammos decagrammus</u>	2.0	---	---	2.0	---	---	---	---
<u>Rathbunella</u> sp.	2.0	---	2.0	---	---	---	---	---
<u>Glyptocephalus zachirus</u>	2.0	---	---	---	2.0	---	---	---
<u>Microstomus pacificus</u>	2.0	---	---	---	---	2.0	---	---
<u>Parophrys vetulus</u>	2.0	---	---	---	2.0	---	---	---

SCHOOLING FISHES:

<u>Sebastes wilsoni</u>	3558.0	---	2834.7	---	---	---	---	---
-------------------------	--------	-----	--------	-----	-----	-----	-----	-----

ALL FISHES:

Total density: 4003.7

Diversity indices: Richness (S) = 25 Evenness (J) = 0.15 Diversity (H') = 0.47

INVERTEBRATES: (100.0 % of videotape usable)

	Estimated density (#/hectare)
<u>Florometra serratissima</u>	856.3
<u>Scypha/Iophon</u>	314.7
<u>Pachastrellidae-like</u>	21.5
<u>Ophiacantha</u> sp.	13.7
<u>Hippasterias</u> spp.	9.8
<u>Parastichopus</u> spp.	5.9
<u>Pycnopodia/Rathbunaster</u>	5.9
<u>Henricia</u> sp.	2.0
<u>Mediaster aequalis</u>	2.0

Diversity indices: Richness (S) = 9 Evenness (J) = 0.38 Diversity (H') = 0.83

OTHER ORGANISMS PRESENT:

Encrusting Red Algae

(Dive 90H3A continued)

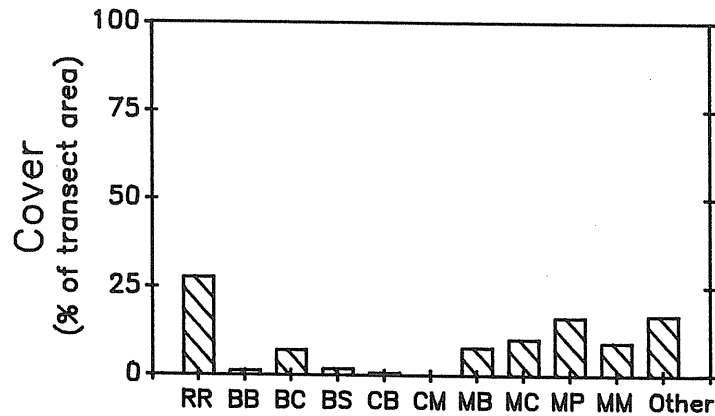
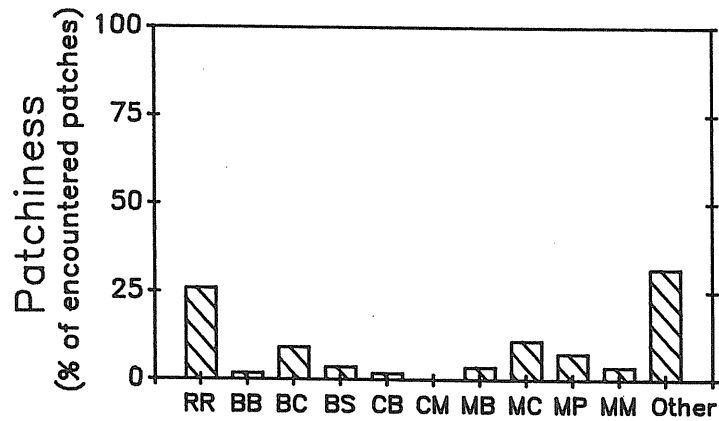
BOTTOM TYPE: (90% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
RR	Rock Ridge	27.7	25.9
MP	Mud + Pebble	16.4	7.4
MC	Mud + Cobble	10.3	11.1
MM	Mud	9.4	3.7
MB	Mud + Boulder	8.0	3.7
BC	Boulder + Cobble	7.2	9.3
SS	Sand	5.5	9.3
SP	Sand + Pebble	4.1	7.4
CS	Cobble + Sand	3.7	3.7
BS	Boulder + Sand	1.9	3.7
BB	Boulder	1.3	1.9
SC	Sand + Cobble	1.1	3.7
SB	Sand + Boulder	1.1	1.9
CB	Cobble + Boulder	0.8	1.9
CP	Cobble + Pebble	0.7	1.9
RB	Rock Ridge + Boulder	0.6	1.9
PP	Pebble	0.3	1.9

Richness (S) = 17

Patchiness: Evenness (J) = 0.87 Diversity (H') = 2.47

Cover: Evenness (J) = 0.80 Diversity (H') = 2.26



Bottom type

Dive Code: 1990 Heceta Bank, Station 1, Dive B (90H3B)

Delta Dive: 2090

Date: 9/16/90

Time: 1141-1254

Minimum Depth: 250 ft (76 m)

Maximum Depth: 455 ft (139 m)

Remarks: Temperature 47 degrees F; audio failure second half of transect

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Paricelius hopliticus</u>	535.6	8.4	481.2	46.0	---	---	---	---
<u>Sebastes elongatus</u>	372.4	---	8.4	330.6	33.5	---	---	---
<u>Sebastes helvomaculatus</u>	184.1	---	---	167.4	16.7	---	---	---
<u>Sebastes wilsoni</u>	142.3	---	58.6	83.7	---	---	---	---
<u>Microstomus pacificus</u>	67.0	---	16.7	8.4	41.8	---	---	---
<u>Rathbunella sp.</u>	46.0	---	20.9	25.1	---	---	---	---
unknown flatfish	25.1	---	---	---	---	25.1	---	---
<u>Lyopsetta exilis</u>	25.1	---	16.7	8.4	---	---	---	---
<u>Sebastes pinniger</u>	16.7	---	---	---	8.4	---	8.4	---
<u>Ophiodon elongatus</u>	8.4	---	---	---	---	---	---	8.4
unknown mottled sculpin	8.4	---	---	---	8.4	---	---	---
unknown mottled poacher	8.4	---	8.4	---	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	5188.9	---	5021.6	167.4	---	---	---	---
ALL FISHES:								
Total density:	6628.4							
Diversity indices:	Richness (S) = 11	Evenness (J) = 0.33	Diversity (H') = 0.78					

INVERTEBRATES: (99.0 % of videotape usable)

	Estimated density (#/hectare)
<u>Scypha/Iophon</u>	3021.3
<u>Florometra serratissima</u>	1481.4
<u>Ophiacantha sp.</u>	577.5
<u>Pycnopodia/Rathbunaster</u>	163.2
<u>Henricia sp.</u>	142.3
<u>Allocentrotus fragilis</u>	108.8
<u>Pachastrellidae-like</u>	87.9
<u>Parastichopus spp.</u>	87.9
<u>Mediaster aequalis</u>	79.5
<u>Peridontaster crassus</u>	54.4
<u>Aphrocallistes/Mycale</u>	16.7
<u>Stylasterias forreri</u>	16.7
<u>Lophaster/Asterias</u>	12.6
<u>Hippasterias spp.</u>	8.4
<u>Crossaster papposus</u>	4.2
<u>Orthasterias koehleri</u>	4.2

Diversity indices:

Richness (S) = 16

Evenness (J) = 0.53

Diversity (H') = 1.48

OTHER ORGANISMS PRESENT:

None

(Dive 90H3B continued)

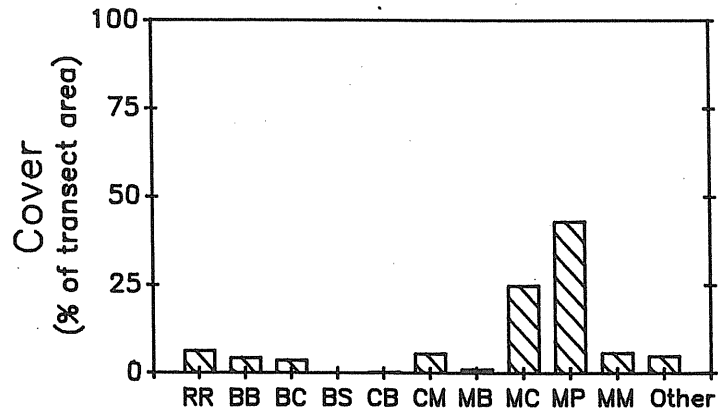
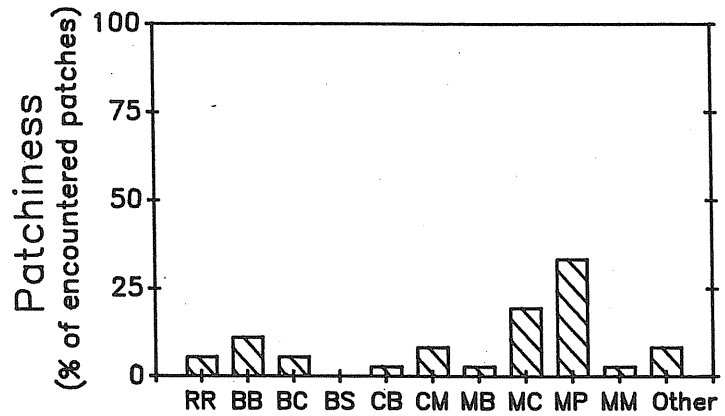
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MP	Mud + Pebble	43.0	33.3
MC	Mud + Cobble	24.8	19.4
RR	Rock Ridge	6.4	5.6
MM	Mud	5.9	2.8
CM	Cobble + Mud	5.6	8.3
BB	Boulder	4.4	11.1
BC	Boulder + Cobble	3.7	5.6
CC	Cobble	2.6	5.6
SC	Sand + Cobble	2.3	2.8
MB	Mud + Boulder	1.1	2.8
CB	Cobble + Boulder	0.3	2.8

Richness (S) = 11

Patchiness: Evenness (J) = 0.84 Diversity (H') = 2.02

Cover: Evenness (J) = 0.72 Diversity (H') = 1.72



Bottom type

Dive Code: 1990 Heceta Bank, Station 3, Dive B (90H3B)

Delta Dive: 2093

Date: 9/17/90

Time: 1903-1940

Minimum Depth: ---

Maximum Depth: 338 ft (103 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 cm</u>	<u>1 cm</u>	<u>2 cm</u>	<u>3 cm</u>	<u>4 cm</u>	<u>5 cm</u>	<u>> 5 cm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	1490.6	150.2	765.9	563.2	11.3	---	---	---
<u>Sebastes helvomaculatus</u>	304.1	---	15.0	221.5	67.6	---	---	---
<u>Sebastes flavidus</u>	108.9	---	---	---	3.8	63.8	41.3	---
<u>Paricelius hopliticus</u>	75.1	---	71.3	3.8	---	---	---	---
<u>Rathbunella sp.</u>	18.8	---	18.8	---	---	---	---	---
<u>Microstomus pacificus</u>	18.8	---	3.8	3.8	11.3	---	---	---
<u>Hexagrammos decagrammus</u>	7.5	---	---	3.8	---	3.8	---	---
<u>Ophiodon elongatus</u>	7.5	---	---	---	---	---	---	7.5
<u>Raja binoculata</u>	3.8	---	---	---	---	---	---	3.8
<u>Sebastes pinniger</u>	3.8	---	---	---	---	---	3.8	---
unknown mottled sculpin	3.8	---	3.8	---	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	10783.2	796.0	5444.2	4543.1	---	---	---	---
<u>Sebastes flavidus</u>	187.7	---	---	---	---	---	187.7	---
ALL FISHES:								
Total density:	13013.4							
Diversity indices:	Richness (S) = 11	Evenness (J) = 0.12	Diversity (H') = 0.29					

INVERTEBRATES: (82.4 % of videotape usable)

	Estimated density (#/hectare)
<u>Scypha/Iophon</u>	32905.3
<u>Florometra serrastissima</u>	19253.6
<u>Pachastrellidae-like</u>	184.0
<u>Henricia</u> sp.	180.2
<u>Ophiacantha</u> sp.	101.4
<u>Mediaster aequalis</u>	93.9
<u>Parastichopus</u> spp.	86.4
<u>Gorgonocephalus eucinemis</u>	78.8
purple globular sponge	78.8
<u>Pycnopodia/Rathbunaster</u>	63.8
<u>Poraniopsis inflata</u>	48.8
<u>Aphrocallistes/Mycale</u>	37.5
<u>Peridontaster crassus</u>	15.0
<u>Pteraster</u> spp.	11.3
<u>Allocentrotus fragilis</u>	7.5
<u>Hippasterias</u> spp.	7.5
<u>Stylasterias forreri</u>	7.5
<u>Archidoris odhneri</u>	3.8
<u>Crossaster papposus</u>	3.8
<u>Orthasterias koehleri</u>	3.8

Diversity indices: Richness (S) = 20 Evenness (J) = 0.26 Diversity (H') = 0.79

OTHER ORGANISMS PRESENT:

Encrusting Red Algae

(Dive 90H3B continued)

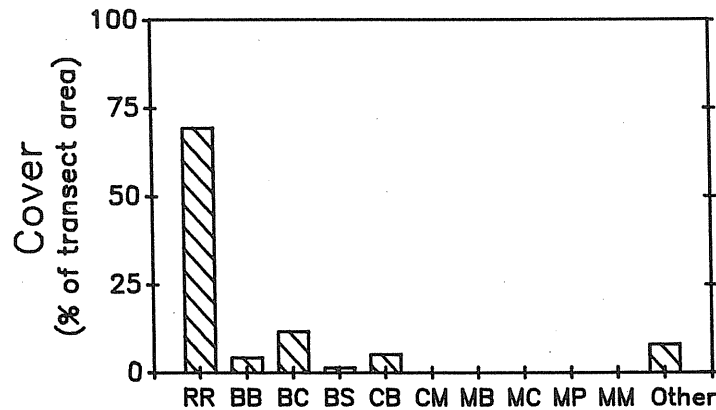
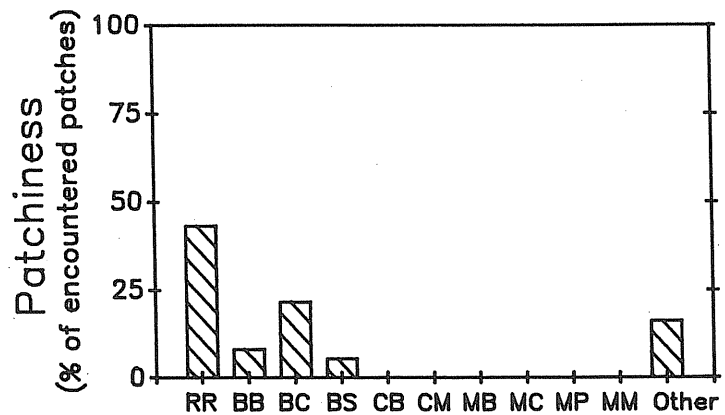
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
RR	Rock Ridge	69.3	43.2
BC	Boulder + Cobble	11.7	21.6
SS	Sand	6.5	5.4
CB	Cobble + Boulder	5.2	5.4
BB	Boulder	4.3	8.1
BS	Boulder + Sand	1.5	5.4
SC	Sand + Cobble	0.9	5.4
PP	Pebble	0.4	2.7
CS	Cobble + Sand	0.2	2.7

Richness (S) = 9

Patchiness: Evenness (J) = 0.78 Diversity (H') = 1.72

Cover: Evenness (J) = 0.51 Diversity (H') = 1.11



Bottom type

Dive Code: 1990 Heceta Bank, Station 4, Dive A (90H4A)

Delta Dive: 2099

Date: 9/18/90

Time: 0831-0943

Minimum Depth: 375 ft (114 m)

Maximum Depth: 420 ft (128 m)

Remarks: None

Estimated density (#/hectare) by total length

Scientific Name	Total	0 dm	1 dm	2 dm	3 dm	4 dm	5 dm	≥ 5 dm
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	2497.6	224.8	465.4	1803.0	4.5	---	---	---
<u>Sebastes</u> sp. (juvenile)	161.9	161.9	---	---	---	---	---	---
<u>Sebastes helvomaculatus</u>	155.1	---	38.2	98.9	18.0	---	---	---
<u>Sebastes zacentrus</u>	152.9	---	123.6	27.0	2.2	---	---	---
unknown mottled sculpin	87.7	22.5	65.2	---	---	---	---	---
<u>Sebastes elongatus</u>	29.2	---	9.0	18.0	2.2	---	---	---
<u>Paricelius hopliticus</u>	27.0	---	27.0	---	---	---	---	---
<u>Sebastes flavidus</u>	18.0	---	---	---	---	11.2	6.7	---
<u>Sebastes</u> sp. (large)	11.2	---	---	6.7	4.5	---	---	---
<u>Rathbunella</u> sp.	11.2	---	11.2	---	---	---	---	---
<u>Microstomus pacificus</u>	9.0	2.2	4.5	---	2.2	---	---	---
<u>Sebastes</u> sp. (blotched)	6.7	---	---	6.7	---	---	---	---
<u>Icelinus</u> sp. (?)	6.7	---	2.2	4.5	---	---	---	---
unknown fish	4.5	2.2	2.2	---	---	---	---	---
unknown flatfish	4.5	2.2	2.2	---	---	---	---	---
<u>Sebastes ruberrimus</u>	4.5	---	---	---	2.2	---	2.2	---
unknown blenny-like fish	4.5	2.2	2.2	---	---	---	---	---
<u>Glyptocephalus zachirus</u>	4.5	---	2.2	2.2	---	---	---	---
<u>Eptatretus</u> sp.	2.2	---	---	---	---	---	2.2	---
<u>Raja rhina</u>	2.2	---	---	---	---	---	---	2.2
<u>Sebastes pinniger</u>	2.2	---	---	---	---	2.2	---	---
<u>Hexagrammos decagrammus</u>	2.2	---	---	2.2	---	---	---	---
<u>Ophiodon elongatus</u>	2.2	---	---	---	---	---	---	2.2
<u>Agonus acipenserinus</u>	2.2	---	2.2	---	---	---	---	---

SCHOOLING FISHES:

<u>Sebastes zacentrus</u>	4721.0	4496.2	224.8	---	---	---	---	---
<u>Sebastes wilsoni</u>	607.0	---	---	607.0	---	---	---	---
<u>Sebastes</u> sp. (juvenile)	427.1	359.7	67.4	---	---	---	---	---
<u>Sebastes</u> sp. (large)	134.9	67.4	67.4	---	---	---	---	---

ALL FISHES:

Total density: 9100.3

Diversity indices: Richness (S) = 23 Evenness (J) = 0.32 Diversity (H') = 1.01

INVERTEBRATES: (82.5 % of videotape usable)

	Estimated density (#/hectare)
<u>Scypha/Iophon</u>	13904.5
<u>Florometra serratissima</u>	11026.9
<u>Ophiacantha</u> sp.	3846.5
<u>Allocentrotus fragilis</u>	768.9
<u>Pachastrellidae-like</u>	114.7
<u>Ophiurida</u>	89.9
white fenestrated sponge	87.7
<u>Pycnopodia/Rathbunaster</u>	36.0
<u>Henricia</u> sp.	29.2
<u>Archidoris odhneri</u>	13.5
<u>Corallimorphus?</u>	11.2
<u>Trididemnum</u> sp.	11.2
<u>Ceremaster patagonicus</u>	9.0
<u>Stylasterias forreri</u>	9.0
<u>Aphrocallistes-like</u>	6.7
<u>Gephyreaster swifti</u>	6.7
<u>Crossaster papposus</u>	4.5
<u>Luidia foliolata</u>	4.5
<u>Gorgonocephalus eucinemis</u>	2.2
<u>Hippasterias</u> spp.	2.2
<u>Lophaster/Asterias</u>	2.2
<u>Parastichopus</u> spp.	2.2
<u>Pteraster tessellatus</u>	2.2
galathidid	2.2

Diversity indices:

Richness (S) = 24

Evenness (J) = 0.37

Diversity (H') = 1.18

OTHER ORGANISMS PRESENT:

None

(Dive 90H4A continued)

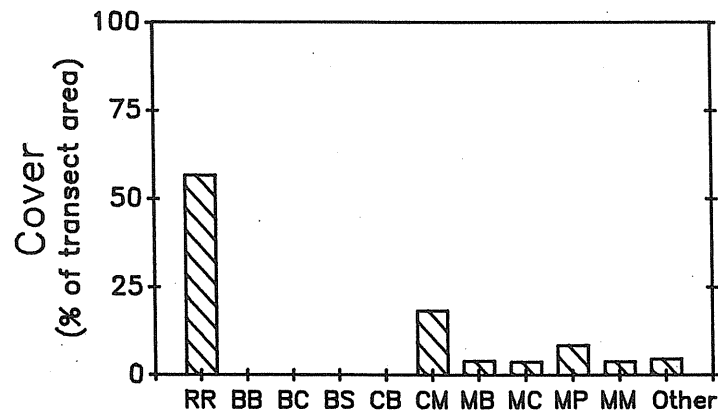
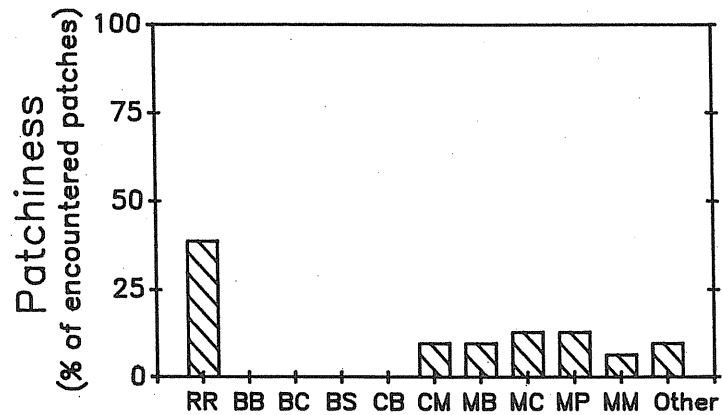
BOTTOM TYPE: (77% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
RR	Rock Ridge	56.6	38.7
CM	Cobble + Mud	18.4	9.7
MP	Mud + Pebble	8.5	12.9
BM	Boulder + Mud	4.7	9.7
MB	Mud + Boulder	4.1	9.7
MM	Mud	3.9	6.5
MC	Mud + Cobble	3.8	12.9

Richness (S) = 7

Patchiness: Evenness (J) = 0.90 Diversity (H') = 1.75

Cover: Evenness (J) = 0.70 Diversity (H') = 1.37



Bottom type

Dive Code: 1990 Heceta Bank, Station 4, Dive B (90H4B)

Delta Dive: 2100

Date: 9/18/90

Time: 1036-1145

Minimum Depth: 395 ft (120 m)

Maximum Depth: 436 ft (133 m)

Remarks: 10-30 feet visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes</u> sp. (juvenile)	593.7	593.7	---	---	---	---	---	---
<u>Sebastes wilsoni</u>	253.3	120.7	49.5	81.1	2.0	---	---	---
<u>Sebastes helvomaculatus</u>	186.0	---	4.0	164.3	17.8	---	---	---
<u>Paricelius hopliticus</u>	138.5	9.9	126.7	2.0	---	---	---	---
<u>Sebastes elongatus</u>	83.1	---	7.9	43.5	29.7	2.0	---	---
<u>Rathbunella</u> sp.	41.6	---	39.6	2.0	---	---	---	---
<u>Sebastes zacentrus</u>	19.8	---	---	13.9	5.9	---	---	---
unknown mottled sculpin	19.8	---	17.8	2.0	---	---	---	---
<u>Sebastes flavidus</u>	17.8	---	---	---	---	2.0	13.9	2.0
<u>Lyopsetta exilis</u>	13.9	---	4.0	2.0	7.9	---	---	---
unknown small flatfish	7.9	7.9	---	---	---	---	---	---
<u>Sebastes pinniger</u>	7.9	---	---	---	---	2.0	2.0	4.0
<u>Raja binoculata</u>	4.0	---	---	---	---	---	2.0	2.0
<u>Microstomus pacificus</u>	4.0	---	---	---	4.0	---	---	---
<u>Raja rhina</u>	2.0	---	---	---	---	---	---	2.0
<u>Sebastes chlorostictus</u>	2.0	---	---	---	2.0	---	---	---
<u>Hexagrammos decagrammus</u>	2.0	---	---	---	2.0	---	---	---
<u>Ophiodon elongatus</u>	2.0	---	---	---	---	---	---	2.0
unknown prickleback (?)	2.0	---	2.0	---	---	---	---	---
<u>Atheresthes stomias</u>	2.0	---	---	---	---	2.0	---	---

SCHOOLING FISHES:

<u>Sebastes flavidus</u>	197.9	---	---	---	---	---	197.9	---
<u>Sebastes</u> sp. (juvenile)	197.9	197.9	---	---	---	---	---	---
<u>Sebastes wilsoni</u>	59.4	---	---	59.4	---	---	---	---

ALL FISHES:

Total density: 1858.27

Diversity indices: Richness (S) = 18 Evenness (J) = 0.67 Diversity (H') = 1.94

INVERTEBRATES: (88.0 % of videotape usable)

	Estimated density (#/hectare)
<u>Florometra serrastissima</u>	13073.2
<u>Scypha/Iophon</u>	11917.4
<u>Ophiacantha</u> sp.	3534.5
<u>Allocentrotus fragilis</u>	686.7
white fennistrate sponge	197.9
<u>Staurocalyptus</u> -like	98.9
Henricia sp.	25.7
<u>Pteraster militaris</u>	21.8
<u>Pycnopodia/Rathbunaster</u>	21.8
Pachastrellidae-like	19.8
<u>Hippasterias</u> spp.	17.8
<u>Archidoris odhneri</u>	15.8
<u>Stylasterias forreri</u>	15.8
<u>Trididemnum</u> sp.	15.8
<u>Mediaster aequalis</u>	9.9
<u>Pteraster tessellatus</u>	7.9
<u>Gephyreaster swifti</u>	5.9
<u>Henricia sanguinolenta</u>	5.9
<u>Luidia foliolata</u>	5.9
<u>Aphrocallistes</u> -like	4.0
<u>Crossaster papposus</u>	4.0
<u>Lophaster/Asterias</u>	4.0
<u>Parastichopus</u> spp.	4.0
<u>Poraniopsis inflata</u>	4.0
<u>Anthomastus ritteri?</u>	2.0
<u>Corallimorphus?</u>	2.0

Diversity indices: Richness (S) = 26 Evenness (J) = 0.36 Diversity (H') = 1.18

OTHER ORGANISMS PRESENT:

None

(Dive 90H4B continued)

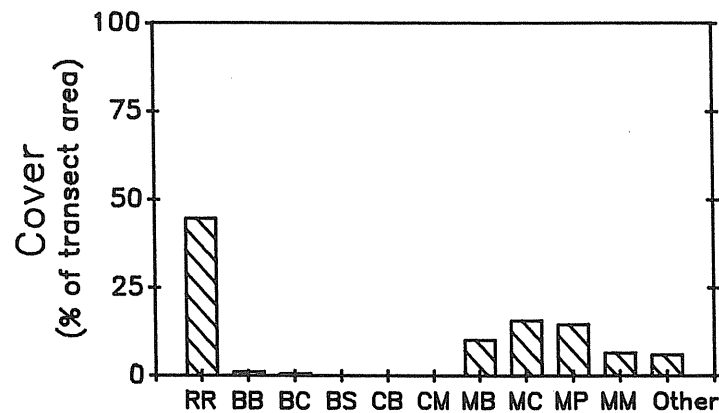
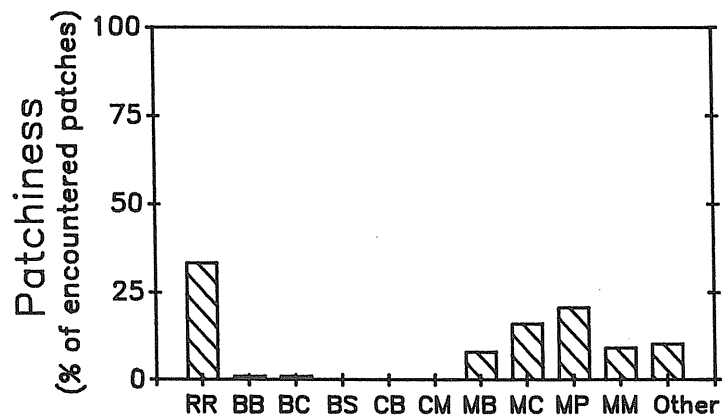
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
RR	Rock Ridge	44.7	33.3
MC	Mud + Cobble	15.7	16.1
MP	Mud + Pebble	14.6	20.7
MB	Mud + Boulder	10.3	8.0
MM	Mud	6.6	9.2
BM	Boulder + Mud	6.0	9.2
BB	Boulder	1.2	1.1
BC	Boulder + Cobble	0.7	1.1
PM	Pebble + Mud	0.1	1.1

Richness (S) = 9

Patchiness: Evenness (J) = 0.81 Diversity (H') = 1.78

Cover: Evenness (J) = 0.73 Diversity (H') = 1.61



Bottom type

Dive Code: 1990 Heceta Bank, Station 5, Dive A (90H5A)

Delta Dive: 2102

Date: 9/18/90

Time: 1600-1811

Minimum Depth: 742 ft (226 m)

Maximum Depth: 1200 ft (366 m)

Remarks: Poor visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Microstomus pacificus</u>	127.4	---	---	15.9	45.8	51.8	11.9	2.0
<u>Lycodes corteziianus</u>	123.4	---	13.9	59.7	39.8	10.0	---	---
<u>Glyptocephalus zachirus</u>	107.5	33.8	6.0	33.8	25.9	6.0	2.0	---
unknown mottled poacher	105.5	---	19.9	85.6	---	---	---	---
<u>Sebastes alascanus</u>	85.6	11.9	21.9	41.8	10.0	---	---	---
<u>Agonus acipenserinus</u>	69.7	---	2.0	65.7	2.0	---	---	---
<u>Lyopsetta exilis</u>	55.7	---	17.9	37.8	---	---	---	---
<u>Eptatretus</u> sp.	17.9	15.9	---	---	---	---	2.0	---
<u>Hydrolagus colliei</u>	13.9	---	---	---	4.0	6.0	4.0	---
unknown fish	11.9	6.0	---	2.0	---	4.0	---	---
<u>Sebastes diploproa</u>	10.0	---	---	8.0	2.0	---	---	---
<u>Anoplopoma fimbria</u>	8.0	---	---	---	---	---	6.0	2.0
unknown small flatfish	6.0	---	2.0	---	---	---	---	---
unknown flatfish	6.0	2.0	---	2.0	2.0	---	---	---
<u>Raja kincaidii</u>	6.0	---	---	---	---	2.0	4.0	---
<u>Careproctus melanurus</u>	6.0	---	---	2.0	4.0	---	---	---
unknown lanternfish	4.0	---	4.0	---	---	---	---	---
<u>Atheresthes stomias</u>	4.0	---	---	2.0	---	2.0	---	---
<u>Sebastes helvomaculatus</u>	2.0	---	---	---	---	---	2.0	---
<u>Sebastes pinniger</u>	2.0	---	---	---	---	---	2.0	---
<u>Sebastes</u> sp. (rockfish)	2.0	---	---	---	---	---	2.0	---
<u>Rathbunella</u> sp.	2.0	2.0	---	---	---	---	---	---
<u>Parophrys vetulus</u>	2.0	---	---	---	---	2.0	---	---
SCHOOLING FISHES:								
unknown fish	83.6	83.6	---	---	---	---	---	---
<u>Lycodes corteziianus</u>	4.0	---	---	---	4.0	---	---	---
<u>Lyopsetta exilis</u>	2.0	---	---	2.0	---	---	---	---
ALL FISHES:								
Total density:	868.0							
Diversity indices:	Richness (S) = 20	Evenness (J) = 0.76	Diversity (H') = 2.29					

INVERTEBRATES: (100.0 % of videotape usable)

	Estimated density (#/hectare)
<u>Allocentrotus fragilis</u>	1461.2
pagurids	485.7
<u>Parastichopus</u> spp.	197.1
<u>Pycnopodia/Rathbunaster</u>	129.4
<u>Mediaster aequalis</u>	15.9
<u>Luidia foliolata</u>	11.9
<u>Henricia</u> sp.	10.0
<u>Lopholithodes foraminatus</u>	10.0
<u>Pandalus</u> sp.	4.0
<u>Hippasterias</u> spp.	2.0
<u>Octopus</u> sp.	2.0
<u>Rossia pacifica</u>	2.0

Diversity indices: Richness (S) = 12 Evenness (J) = 0.45 Diversity (H') = 1.13

OTHER ORGANISMS PRESENT:

None

(Dive 90H5A continued)

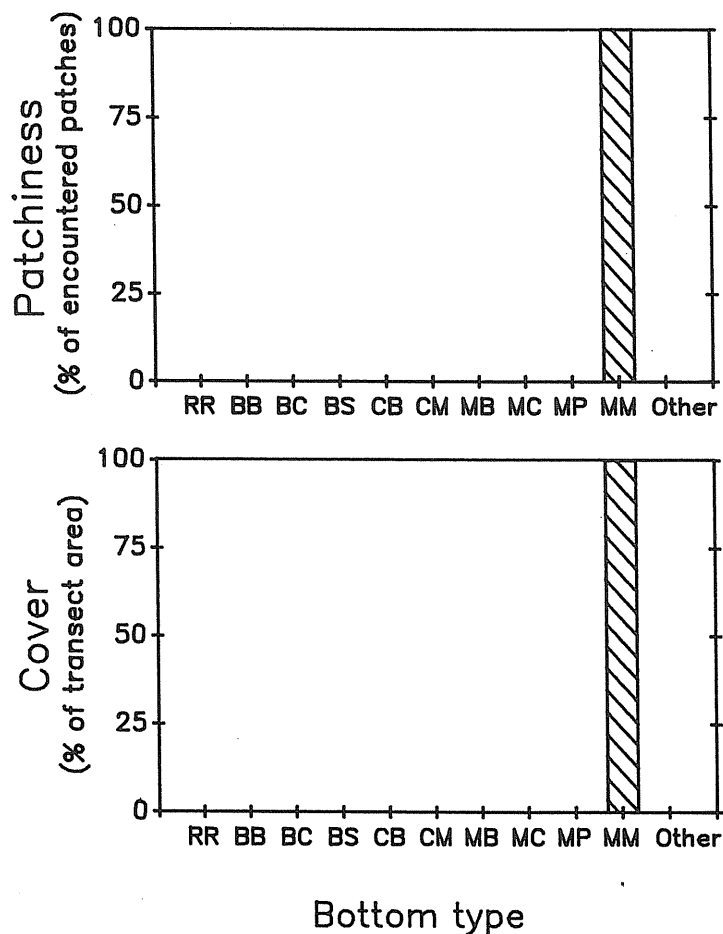
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	100.0	100.0

Richness (S) = 1

Patchiness: Evenness (J) = 0 Diversity (H') = 0

Cover: Evenness (J) = 0 Diversity (H') = 0



Bottom type

Dive Code: 1990 Heceta Bank, Station 5, Dive B (90H5B)

Delta Dive: 2106

Date: 9/23/90

Time: 0754-0908

Minimum Depth: 730 ft (222 m)

Maximum Depth: 1010 ft (308 m)

Remarks: Trawl tracks at start of transect

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
unknown mottled poacher	265.6	---	74.8	190.8	---	---	---	---
<u>Microstomus pacificus</u>	120.0	---	27.5	59.0	17.7	15.7	---	---
<u>Lycodes corteziianus</u>	92.5	---	7.9	55.1	29.5	---	---	---
<u>Glyptocephalus zachirus</u>	76.7	---	7.9	41.3	27.5	---	---	---
<u>Lyopsetta exilis</u>	61.0	---	27.5	31.5	2.0	---	---	---
<u>Sebastolobus alascanus</u>	51.2	---	7.9	33.4	9.8	---	---	---
<u>Sebastes elongatus</u>	31.5	---	---	9.8	21.6	---	---	---
<u>Squalus acanthias</u>	27.5	---	---	---	2.0	7.9	15.7	2.0
<u>Sebastes helvomaculatus</u>	21.6	---	---	11.8	9.8	---	---	---
<u>Anoplopoma fimbria</u>	21.6	---	---	---	---	9.8	11.8	---
unknown small flatfish	17.7	---	9.8	3.9	2.0	---	---	2.0
<u>Agonus acipenserinus</u>	17.7	---	5.9	11.8	---	---	---	---
unknown flatfish	13.8	---	7.9	2.0	3.9	---	---	---
<u>Sebastes diploproa</u>	11.8	---	2.0	7.9	2.0	---	---	---
<u>Hydrolagus colliei</u>	7.9	---	---	---	2.0	5.9	---	---
<u>Sebastes</u> sp. (large)	7.9	---	---	3.9	2.0	2.0	---	---
<u>Icelinus</u> sp. (?)	7.9	---	---	5.9	2.0	---	---	---
unknown slender eelpout (?)	3.9	---	2.0	2.0	---	---	---	---
<u>Sebastes zacentrus</u>	3.9	---	2.0	---	2.0	---	---	---
<u>Icelinus tenuis</u>	3.9	---	---	3.9	---	---	---	---
unknown mottled sculpin	3.9	---	2.0	2.0	---	---	---	---
<u>Raja binoculata</u>	2.0	---	---	---	---	---	---	2.0
<u>Raja kincaidii</u>	2.0	---	---	---	2.0	---	---	---
<u>Raja rhina</u>	2.0	---	---	---	---	---	---	2.0
unknown blacksmelt	2.0	---	2.0	---	---	---	---	---
<u>Oncorhynchus</u> sp.	2.0	---	---	---	---	---	2.0	---
<u>Merluccius productus</u>	2.0	---	---	---	2.0	---	---	---
<u>Sebastes babcocki</u>	2.0	---	---	---	2.0	---	---	---
<u>Sebastes chlorostictus</u>	2.0	---	---	2.0	---	---	---	---
<u>Sebastes</u> sp. (blotched)	2.0	---	---	2.0	---	---	---	---
<u>Careproctus melanurus</u>	2.0	---	---	2.0	---	---	---	---
<u>Parophrys vetulus</u>	2.0	---	---	2.0	---	---	---	---

SCHOOLING FISHES:

None

ALL FISHES:

Total density:

891.2

Diversity indices:

Richness (S) = 30

Evenness (J) = 0.70

Diversity (H') = 2.39

INVERTEBRATES: (96.1 % of videotape usable)

	Estimated density (#/hectare)
<u>Allocentrotus fragilis</u>	2980.5
<u>Parastichopus</u> spp.	1011.2
<u>Florometra serrastissima</u>	188.9
<u>Scypha/Iophon</u>	27.5
Pachastrellidae-like	23.6
<u>Lopholithodes foraminatus</u>	19.7
<u>Pycnopodia/Rathbunaster</u>	13.8
<u>Pandalus</u> sp.	11.8
pagurids	7.9
<u>Henricia</u> sp.	5.9
Octopus sp.	5.9
galathidid	3.9
<u>Acantholithodes hispidus</u>	2.0
<u>Cancer</u> sp.	2.0
<u>Luidia foliolata</u>	2.0
<u>Rossia pacifica</u>	2.0
<u>Stylasterias forreri</u>	2.0
<u>Stylatula elongata</u>	2.0

Diversity indices: Richness (S) = 18 Evenness (J) = 0.31 Diversity (H') = 0.91

OTHER ORGANISMS PRESENT:

None

(Dive 90H5B continued)

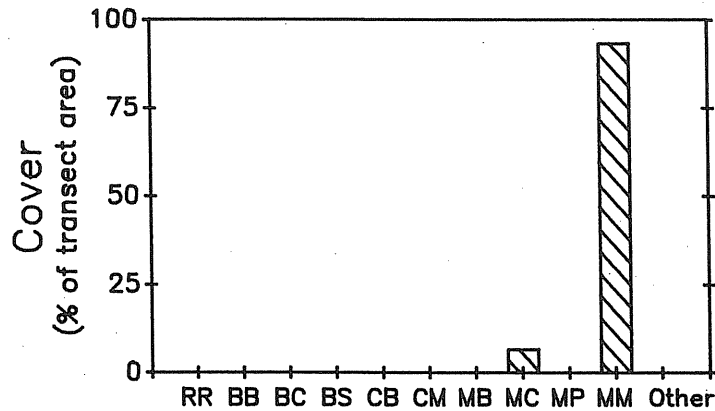
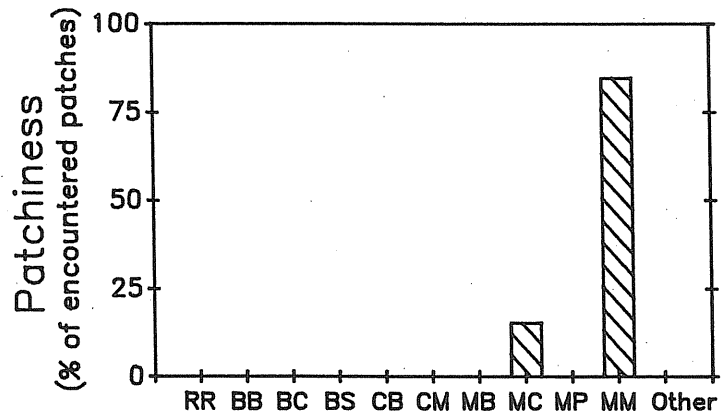
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	93.3	84.6
MC	Mud + Cobble	6.7	15.4

Richness (S) = 2

Patchiness: Evenness (J) = 0.62 Diversity (H') = 0.43

Cover: Evenness (J) = 0.35 Diversity (H') = 0.24



Bottom type

Dive Code: 1990 Heceta Bank, Station 6, Dive A (90H6A)

Delta Dive: 2103

Date: 9/22/90

Time: 1321-1433

Minimum Depth: 445 ft (136 m)

Maximum Depth: 1180 ft (335 m)

Remarks: 20-30 feet visibility; strong current

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes zacentrus</u>	2241.7	49.3	157.8	1896.5	103.6	34.5	---	---
<u>Sebastolobus alascanus</u>	138.1	7.4	56.7	49.3	24.7	---	---	---
<u>Microstomus pacificus</u>	138.1	---	7.4	32.1	76.5	22.2	---	---
<u>Sebastes helvomaculatus</u>	128.2	---	---	98.6	29.6	---	---	---
unknown mottled poacher	113.4	---	41.9	71.5	---	---	---	---
<u>Lycodes corteziianus</u>	59.2	---	---	12.3	37.0	9.9	---	---
<u>Hydrolagus colliei</u>	49.3	---	---	---	4.9	39.5	2.5	2.5
<u>Anoplopoma fimbria</u>	39.5	---	---	---	---	9.9	27.1	2.5
<u>Sebastes diploproa</u>	19.7	---	---	7.4	9.9	2.5	---	---
<u>Careproctus melanurus</u>	14.8	---	---	---	14.8	---	---	---
<u>Squalus acanthias</u>	12.3	---	---	---	---	4.9	7.4	---
<u>Raja binoculata</u>	12.3	---	---	---	2.5	9.9	---	---
<u>Lycodapus mandibularis</u> (?)	12.3	---	12.3	---	---	---	---	---
<u>Sebastes elongatus</u>	7.4	---	---	2.5	4.9	---	---	---
unknown mottled sculpin	7.4	---	---	2.5	4.9	---	---	---
<u>Sebastes babcocki</u>	4.9	---	---	---	4.9	---	---	---
<u>Glyptocephalus zachirus</u>	4.9	---	---	---	4.9	---	---	---
<u>Lyopsetta exilis</u>	4.9	---	2.5	2.5	---	---	---	---
unknown fish	2.5	---	---	---	---	2.5	---	---
<u>Chilara taylori</u>	2.5	---	---	---	2.5	---	---	---
<u>Ophiodon elongatus</u>	2.5	---	---	---	---	---	---	2.5
<u>Paricelius hopliticus</u>	2.5	---	---	2.5	---	---	---	---

SCHOOLING FISHES:

None

ALL FISHES:

Total density: 3018.6

Diversity indices: Richness (S) = 21 Evenness (J) = 0.38 Diversity (H') = 1.17

INVERTEBRATES: (98.3 % of videotape usable)

	Estimated density (#/hectare)
Pachastrellidae-like	1393.4
<u>Allocentrotus fragilis</u>	1028.4
<u>Florometra serratissima</u>	895.2
<u>Parastichopus</u> spp.	441.4
<u>Pycnopodia/Rathbunaster</u>	276.2
<u>Scypha/Iophon</u>	133.2
<u>Ophiacantha</u> sp.	98.6
<u>Stomphia</u> sp.	37.0
pagurids	37.0
<u>Mediaster aequalis</u>	32.1
<u>Henricia</u> sp.	29.6
<u>Pandalus</u> sp.	27.1
<u>Aphrocallistes/Mycale</u>	22.2
Terebratulida	22.2
<u>Urticina piscivora</u>	22.2
<u>Anthomastus ritteri?</u>	19.7
<u>Luidia foliolata</u>	19.7
galathidid	14.8
Neogastropoda	12.3
<u>Staurocalyptus</u> -like	7.4
<u>Stylasterias forreri</u>	7.4
<u>Aphrocallistes</u> -like	4.9
<u>Rossia pacifica</u>	4.9
<u>Ceremaster patagonicus</u>	2.5
<u>Cerianthid anemone</u>	2.5
<u>Ptylosarcos</u> sp.	2.5

Diversity indices: Richness (S) = 27 Evenness (J) = 0.60 Diversity (H') = 1.98

OTHER ORGANISMS PRESENT:

None

(Dive 90H6A continued)

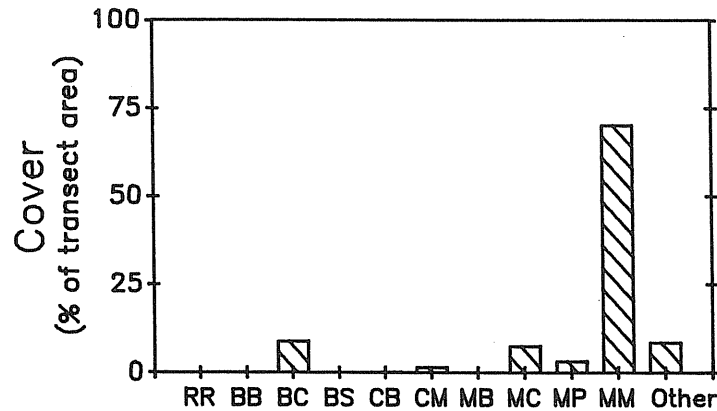
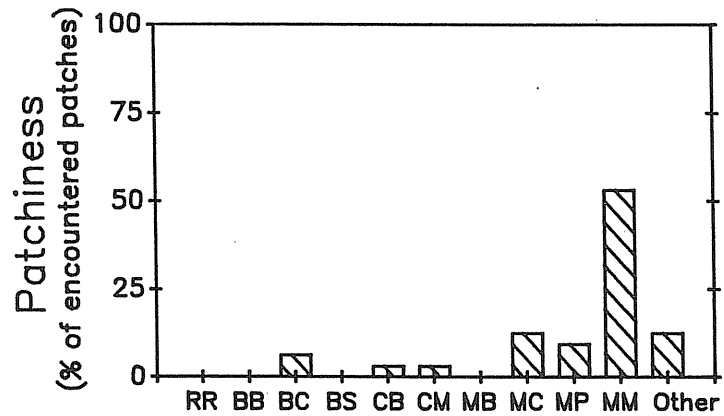
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	70.1	53.1
BC	Boulder + Cobble	8.9	6.3
MC	Mud + Cobble	7.6	12.5
CC	Cobble	5.2	6.3
MP	Mud + Pebble	3.3	9.4
CP	Cobble + Pebble	1.9	3.1
CM	Cobble + Mud	1.5	3.1
PM	Pebble + Mud	1.5	3.1
CB	Cobble + Boulder	0.1	3.1

Richness (S) = 9

Patchiness: Evenness (J) = 0.73 Diversity (H') = 1.60

Cover: Evenness (J) = 0.51 Diversity (H') = 1.13



Bottom type

Dive Code: 1990 Heceta Bank, Station 6, Dive B (90H6B)

Delta Dive: 2104

Date: 9/22/90

Time: 1552-1703

Minimum Depth: 464 ft (141 m)

Maximum Depth: 1175 ft (358 m)

Remarks: Poor visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	247.8	---	77.6	170.2	---	---	---	---
<u>Sebastes zacentrus</u>	235.3	---	10.0	210.3	15.0	---	---	---
<u>Sebastolobus alascanus</u>	125.2	10.0	62.6	35.0	15.0	2.5	---	---
<u>Sebastes helvomaculatus</u>	97.6	---	17.5	80.1	---	---	---	---
unknown mottled poacher	77.6	---	5.0	65.1	7.5	---	---	---
<u>Microstomus pacificus</u>	40.0	---	---	5.0	20.0	12.5	2.5	---
<u>Lycodes corteziianus</u>	35.0	---	---	10.0	20.0	5.0	---	---
<u>Lyopsetta exilis</u>	35.0	---	10.0	22.5	2.5	---	---	---
<u>Hydrolagus colliei</u>	25.0	---	---	---	---	12.5	12.5	---
<u>Anoplopoma fimbria</u>	15.0	---	---	---	---	7.5	---	7.5
unknown mottled sculpin	7.5	---	5.0	2.5	---	---	---	---
<u>Raja kincaidii</u>	5.0	---	---	---	---	2.5	2.5	---
<u>Merluccius productus</u>	5.0	5.0	---	---	---	---	---	---
<u>Sebastes alutus</u>	5.0	---	---	---	5.0	---	---	---
<u>Sebastes babcocki</u>	5.0	---	---	---	---	5.0	---	---
<u>Sebastes elongatus</u>	5.0	---	---	5.0	---	---	---	---
<u>Glyptocephalus zachirus</u>	5.0	---	---	2.5	2.5	---	---	---
unknown fish	2.5	2.5	---	---	---	---	---	---
unknown small flatfish	2.5	---	2.5	---	---	---	---	---
unknown flatfish	2.5	---	---	---	2.5	---	---	---
<u>Squalus acanthias</u>	2.5	---	---	---	---	---	---	2.5
<u>Sebastes diploproa</u>	2.5	---	---	---	2.5	---	---	---
<u>Sebastes proriger</u>	2.5	---	---	2.5	---	---	---	---
<u>Rathbunella</u> sp.	2.5	2.5	---	---	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes zacentrus</u>	583.2	---	---	332.9	250.3	---	---	---
<u>Sebastes wilsoni</u>	122.7	---	30.0	92.6	---	---	---	---
<u>Hydrolagus colliei</u>	2.5	---	---	---	---	---	2.5	---
<u>Sebastes helvomaculatus</u>	2.5	---	---	2.5	---	---	---	---
unknown mottled poacher	2.5	---	---	2.5	---	---	---	---
<u>Microstomus pacificus</u>	2.5	---	---	---	2.5	---	---	---

ALL FISHES:

Total density: 1704.6

Diversity indices: Richness (S) = 21 Evenness (J) = 0.56 Diversity (H') = 1.71

INVERTEBRATES: (100.0 % of videotape usable)

	Estimated density (#/hectare)
<u>Scypha/Iophon</u>	1844.8
<u>Allocentrotus fragilis</u>	1772.2
Pachastrellidae-like	1694.6
<u>Florometra serrastissima</u>	941.2
<u>Ophiacantha</u> sp.	595.7
<u>Parastichopus</u> spp.	463.1
<u>Pycnopodia/Rathbunaster</u>	205.3
<u>Mediaster aequalis</u>	85.1
<u>Pandalus</u> sp.	85.1
white fennistrate sponge	77.6
galathidid	62.6
<u>Stomphia</u> sp.	30.0
Neptuneidae	27.5
<u>Staurocalyptus</u> -like	20.0
<u>Aphrocallistes</u> -like	12.5
pagurids	12.5
<u>Corallimorphus?</u>	10.0
<u>Luidia foliolata</u>	10.0
<u>Stylasterias forreri</u>	10.0
<u>Henricia</u> sp.	7.5
<u>Anthomastus ritteri?</u>	5.0
<u>Octopus</u> sp.	5.0
<u>Archidoris odhneri</u>	2.5
<u>Lophaster/Asterias</u>	2.5
<u>Lopholithodes foraminatus</u>	2.5
<u>Pteraster tessellatus</u>	2.5
<u>Swiftia</u> sp.	2.5

Diversity indices: Richness (S) = 27 Evenness (J) = 0.61 Diversity (H') = 2.02

OTHER ORGANISMS PRESENT:

None

(Dive 90H6B continued)

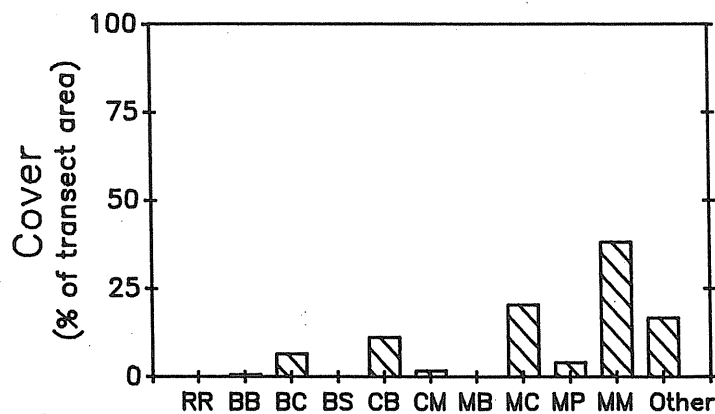
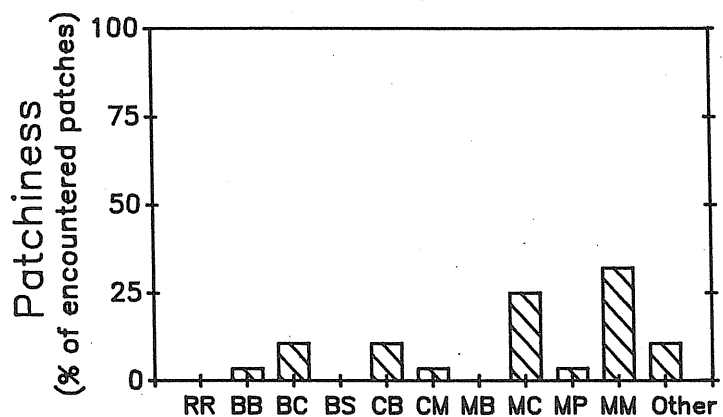
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	38.2	32.1
MC	Mud + Cobble	20.5	25.0
CB	Cobble + Boulder	11.3	10.7
CC	Cobble	9.1	3.6
BC	Boulder + Cobble	6.6	10.7
FM	Flat Rock + Mud	4.7	3.6
MP	Mud + Pebble	4.2	3.6
PM	Pebble + Mud	3.0	3.6
CM	Cobble + Mud	1.8	3.6
BB	Boulder	0.7	3.6

Richness (S) = 10

Patchiness: Evenness (J) = 0.83 Diversity (H') = 1.90

Cover: Evenness (J) = 0.79 Diversity (H') = 1.82



Bottom type

Dive Code: 1990 Coquille Bank, Station 1, Dive A (90C1A)

Delta Dive: 2108

Date: 9/23/90

Time: 1820-1933

Minimum Depth: 600 ft (183 m)

Maximum Depth: 705 ft (215 m)

Remarks: Poor visibility

Estimated density (#/hectare) by total length

Scientific Name	Total	0 dm	1 dm	2 dm	3 dm	4 dm	5 dm	≥ 5 dm
NON-SCHOOLING FISHES:								
<u>Lyopsetta exilis</u>	355.7	3.4	229.3	121.4	1.7	---	---	---
unknown mottled poacher	121.4	---	11.8	109.6	---	---	---	---
<u>Glyptocephalus zachirus</u>	121.4	---	23.6	69.1	27.0	1.7	---	---
<u>Hydrolagus colliei</u>	48.9	---	20.2	28.7	---	---	---	---
<u>Anoplopoma fimbria</u>	38.8	---	---	---	---	6.7	23.6	8.4
<u>Microstomus pacificus</u>	38.8	---	1.7	10.1	25.3	1.7	---	---
<u>Rathbunella</u> sp.	28.7	1.7	27.0	---	---	---	---	---
<u>Sebastes zacentrus</u>	25.3	---	---	15.2	10.1	---	---	---
<u>Sebastes alutus</u>	23.6	---	---	16.9	6.7	---	---	---
<u>Sebastes diploproa</u>	21.9	---	1.7	18.5	1.7	---	---	---
unknown small flatfish	16.9	---	3.4	11.8	1.7	---	---	---
<u>Parophrys vetulus</u>	16.9	---	---	---	3.4	10.1	1.7	1.7
<u>Eptatretus</u> sp.	15.2	---	---	---	10.1	5.1	---	---
<u>Lycodes corteziianus</u>	13.5	---	1.7	6.7	1.7	3.4	---	---
<u>Sebastes elongatus</u>	11.8	---	---	3.4	6.7	1.7	---	---
<u>Agonus acipenserinus</u>	11.8	---	---	11.8	---	---	---	---
unknown fish	10.1	---	---	10.1	---	---	---	---
<u>Atheresthes stomias</u>	10.1	---	---	---	5.1	5.1	---	---
unknown flatfish	8.4	---	3.4	5.1	---	---	---	---
<u>Sebastolobus alascanus</u>	6.7	---	1.7	3.4	1.7	---	---	---
<u>Pleuronichthys</u> sp.	6.7	---	---	3.4	3.4	---	---	---
<u>Merluccius productus</u>	5.1	---	---	---	1.7	1.7	1.7	---
<u>Sebastes crameri</u>	5.1	---	---	3.4	1.7	---	---	---
<u>Raja kincaidii</u>	3.4	---	---	---	3.4	---	---	---
<u>Chilara taylori</u>	3.4	---	---	3.4	---	---	---	---
unknown mottled sculpin	3.4	---	3.4	---	---	---	---	---
<u>Citharichthys</u> sp.	3.4	---	---	3.4	---	---	---	---

SCHOOLING FISHES:

<u>Lyopsetta exilis</u>	5.1	---	5.1	---	---	---	---	---
unknown mottled poacher	1.7	---	---	1.7	---	---	---	---

ALL FISHES:

Total density: 982.8

Diversity indices: Richness (S) = 24 Evenness (J) = 0.71 Diversity (H') = 2.26

INVERTEBRATES: species present

Allocentrotus fragilis

Asteronyx loveni

Balticinia sp.

Buccinidae

Hippasterias sp.

Lopholithodes foraminatus

Ophiura sarsii

Pagurus spp.

Stylatula elongata

Tritonia sp.

Virgularia sp.

(Dive 90C1A continued)

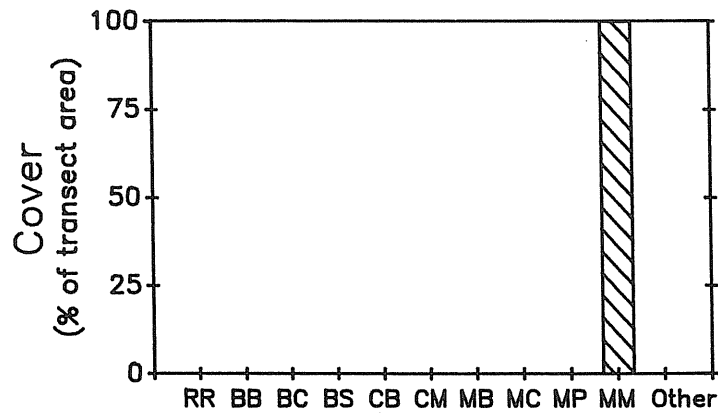
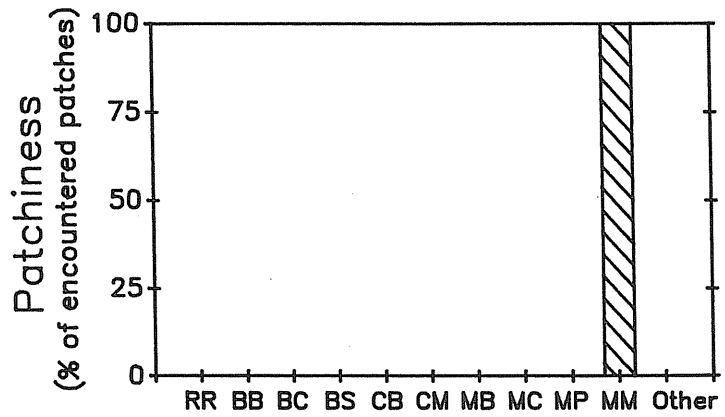
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	100.0	100.0

Richness (S) = 1

Patchiness: Evenness (J) = 0 Diversity (H') = 0

Cover: Evenness (J) = 0 Diversity (H') = 0



Bottom type

Dive Code: 1990 Coquille Bank, Station 2, Dive A (90C2A)

Delta Dive: 2109

Date: 9/24/90

Time: 0840-0953

Minimum Depth: 345 ft (105 m)

Maximum Depth: 400 ft (122 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	3293.8	2.9	2964.8	324.6	1.5	---	---	---
<u>Sebastes helvomaculatus</u>	412.3	7.3	40.9	296.8	67.2	---	---	---
<u>Sebastes elongatus</u>	133.0	---	---	80.4	51.2	1.5	---	---
<u>Rathbunella</u> sp.	43.9	1.5	42.4	---	---	---	---	---
<u>Paricelius hopliticus</u>	35.1	---	35.1	---	---	---	---	---
<u>Sebastes chlorostictus</u>	30.7	---	2.9	13.2	10.2	2.9	1.5	---
<u>Sebastes zacentrus</u>	19.0	---	5.8	13.2	---	---	---	---
unknown mottled sculpin	14.6	---	14.6	---	---	---	---	---
unknown small flatfish	11.7	---	---	---	11.7	---	---	---
<u>Microstomus pacificus</u>	11.7	---	---	1.5	8.8	1.5	---	---
<u>Sebastes</u> sp. (large)	5.8	1.5	2.9	1.5	---	---	---	---
<u>Ophiodon elongatus</u>	4.4	---	---	---	---	1.5	2.9	---
<u>Eptatretus</u> sp.	2.9	---	---	---	2.9	---	---	---
unknown blenny-like fish	2.9	---	1.5	1.5	---	---	---	---
<u>Pleuronichthys</u> sp.	2.9	---	---	---	2.9	---	---	---
unknown fish	1.5	---	1.5	---	---	---	---	---
<u>Hexagrammos decagrammus</u>	1.5	---	---	---	1.5	---	---	---
<u>Eopsetta jordani</u>	1.5	---	---	---	1.5	---	---	---
<u>Glyptocephalus zachirus</u>	1.5	---	1.5	---	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	14824.1	73.1	3728.0	*****	---	---	---	---
<u>Sebastes zacentrus</u>	1769.0	14.6	731.0	1023.4	---	---	---	---
<u>Sebastes</u> sp. (large)	869.9	51.2	307.0	453.2	58.5	---	---	---
<u>Sebastes</u> sp. (juvenile)	95.0	95.0	---	---	---	---	---	---
<u>Scomber japonicus</u>	14.6	---	---	---	---	14.6	---	---
<u>Sebastes elongatus</u>	1.5	---	---	1.5	---	---	---	---

ALL FISHES:

Total density: 21604.6

Diversity indices: Richness (S) = 18 Evenness (J) = 0.22 Diversity (H') = 0.64

INVERTEBRATES: species present

Allocentrotus fragilis

Florometra serrastissima

Lophogorgia-like

Ophiacantha sp.

Scypha/Iophon

Swiftia spp.

(Dive 90C2A continued)

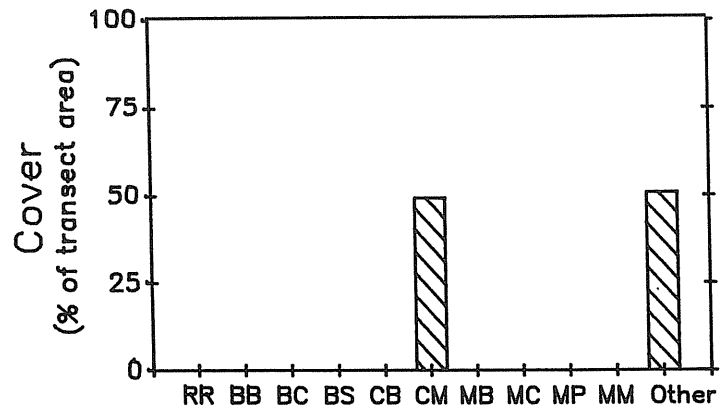
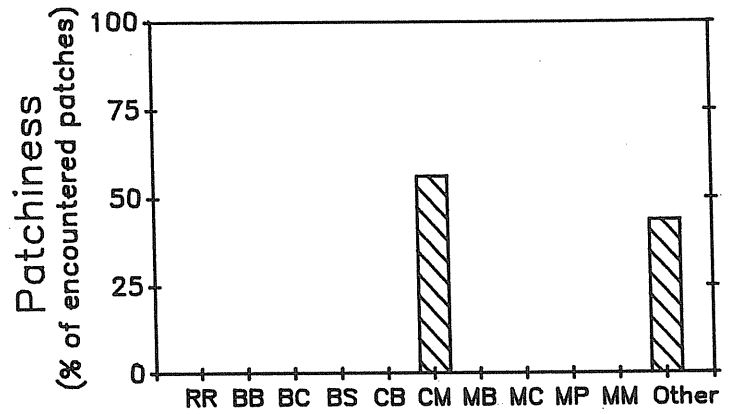
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BM	Boulder + Mud	50.7	43.8
CM	Cobble + Mud	49.3	56.3

Richness (S) = 2

Patchiness: Evenness (J) = 0.99 Diversity (H') = 0.68

Cover: Evenness (J) = 1.00 Diversity (H') = 0.69



Bottom type

Dive Code: 1990 Coquille Bank, Station 3, Dive A (90C3A)

Delta Dive: 2110

Date: 9/24/90

Time: 1046-1217

Minimum Depth: 383 ft (117 m)

Maximum Depth: 502 ft (153 m)

Remarks: 10-20 feet visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	472.3	---	19.8	452.6	---	---	---	---
<u>Sebastes helvomaculatus</u>	283.7	---	10.8	158.0	106.0	9.0	---	---
<u>Microstomus pacificus</u>	118.5	---	10.8	55.7	39.5	12.6	---	---
<u>Sebastes elongatus</u>	93.4	---	3.6	23.3	61.1	5.4	---	---
<u>Rathbunella</u> sp.	93.4	---	80.8	12.6	---	---	---	---
<u>Parophrys vetulus</u>	37.7	---	12.6	23.3	1.8	---	---	---
<u>Paricelius hopliticus</u>	35.9	---	34.1	1.8	---	---	---	---
<u>Lyopsetta exilis</u>	16.2	---	10.8	3.6	1.8	---	---	---
<u>Glyptocephalus zachirus</u>	12.6	---	1.8	7.2	3.6	---	---	---
<u>Sebastes zacentrus</u>	10.8	---	---	3.6	7.2	---	---	---
<u>Eptatretus</u> sp.	9.0	---	---	---	3.6	5.4	---	---
unknown mottled poacher	7.2	---	1.8	5.4	---	---	---	---
<u>Anoplopoma fimbria</u>	1.8	---	---	---	---	1.8	---	---
<u>Ophiodon elongatus</u>	1.8	---	---	---	---	---	---	1.8
<u>Radulinus asprellus</u>	1.8	---	1.8	---	---	---	---	---
<u>Eopsetta jordani</u>	1.8	---	---	1.8	---	---	---	---
<u>Hipoglossus stenolepis</u>	1.8	---	---	---	---	---	---	1.8
SCHOOLING FISHES:								
<u>Anoplopoma fimbria</u>	359.2	---	---	---	---	359.2	---	---
ALL FISHES:								
Total density:	1558.8							
Diversity indices:	Richness (S) = 17	Evenness (J) = 0.68	Diversity (H') = 1.93					

INVERTEBRATES: species present

Allocentrotus fragilis

Archidoris odhneri

Ceremaster patagonicus

Florometra serratissima

Gorgonocephalus eucinemis

Henricia spp.

Hippasterias sp.

Lopholithodes foraminatus

Luidia foliolata

Munida quadrispina

Octopus spp.

Ophiacantha sp.

Parastichopus californicus

Poraniopsis inflata

Pteraster militaris

Pycnopodia helianthoides

Scypha/Iophon

Swiftia spp.

(Dive 90C3A continued)

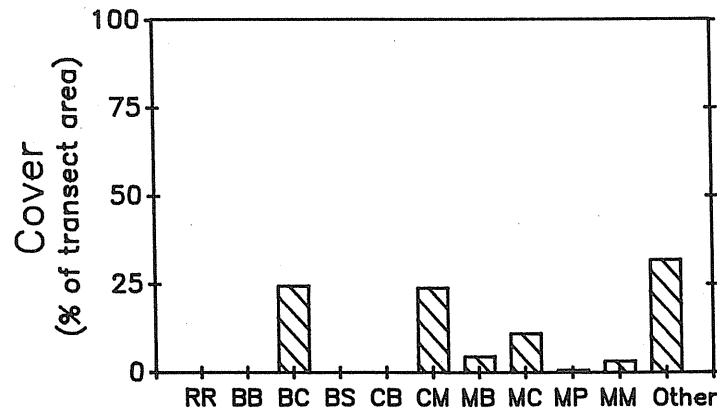
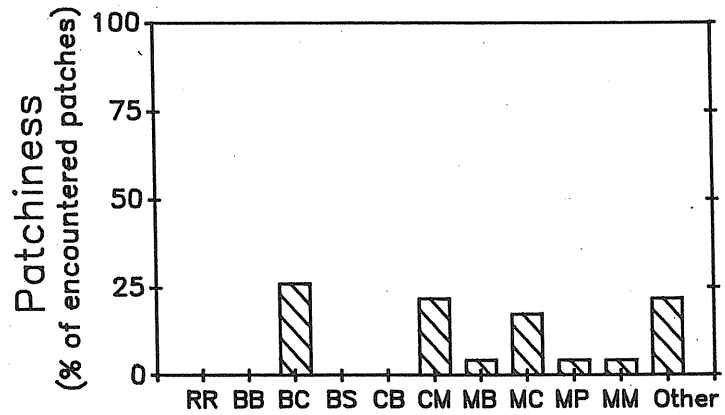
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BM	Boulder + Mud	31.3	17.4
BC	Boulder + Cobble	24.6	26.1
CM	Cobble + Mud	23.9	21.7
MC	Mud + Cobble	11.1	17.4
MB	Mud + Boulder	4.6	4.3
MM	Mud	3.3	4.3
MP	Mud + Pebble	0.7	4.3
CC	Cobble	0.6	4.3

Richness (S) = 8

Patchiness: Evenness (J) = 0.88 Diversity (H') = 1.84

Cover: Evenness (J) = 0.77 Diversity (H') = 1.61



Bottom type

Dive Code: 1990 Coquille Bank, Station 4, Dive A (90C4A)

Delta Dive: 2115

Date: 9/25/90

Time: 1118-1225

Minimum Depth: 470 ft (143 m)

Maximum Depth: 484 ft (147 m)

Remarks: Visibility 2-3 feet; very strong current

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	2314.2	5.0	290.5	1968.5	50.1	---	---	---
<u>Scomber japonicus</u>	255.5	---	---	---	---	20.0	160.3	75.1
<u>Sebastes helvomaculatus</u>	75.1	---	15.0	45.1	15.0	---	---	---
<u>Sebastes elongatus</u>	40.1	---	---	25.0	15.0	---	---	---
<u>Microstomus pacificus</u>	40.1	---	5.0	10.0	---	10.0	15.0	---
<u>Eptatretus sp.</u>	20.0	5.0	---	---	---	10.0	5.0	---
unknown mottled sculpin	10.0	---	5.0	5.0	---	---	---	---
<u>Merluccius productus</u>	5.0	---	---	---	---	5.0	---	---
<u>Lycodes cortezianus</u>	5.0	---	---	5.0	---	---	---	---
<u>Sebastes sp. (rockfish)</u>	5.0	---	---	5.0	---	---	---	---
unknown mottled poacher	5.0	---	---	5.0	---	---	---	---
<u>Glyptocephalus zachirus</u>	5.0	---	---	5.0	---	---	---	---
<u>Lyopsetta exilis</u>	5.0	---	5.0	---	---	---	---	---
SCHOOLING FISHES:								
<u>Scomber japonicus</u>	1577.8	---	---	---	---	---	75.1	1502.7
ALL FISHES:								
Total density:	4362.8							
Diversity indices:	Richness (S) = 14	Evenness (J) = 0.36	Diversity (H') = 0.95					

INVERTEBRATES: species present

Allocentrotus fragilis

Anthomastus ritteri

Ceremaster patagonicus

Chorilia longipes

Crossaster papposus

Gorgonacea

Gorgonocephalus eucinemis

Henricia spp.

Lophogorgia-like

Munida quadrispina

Octopus spp.

Ophiacantha sp

Ophiactidae

Ophiura sarsii

Pagurus spp.

Parastichopus californicus

Poraniopsis inflata

Psolus spp.

Pteraster militaris

Pycnopodia helianthoides

Scypha/Iophon

Staurocalyptus-like

Swiftia spp.

Terebratulida

Tritonia festiva

unknown purple globular sponge

(Dive 90C4A continued)

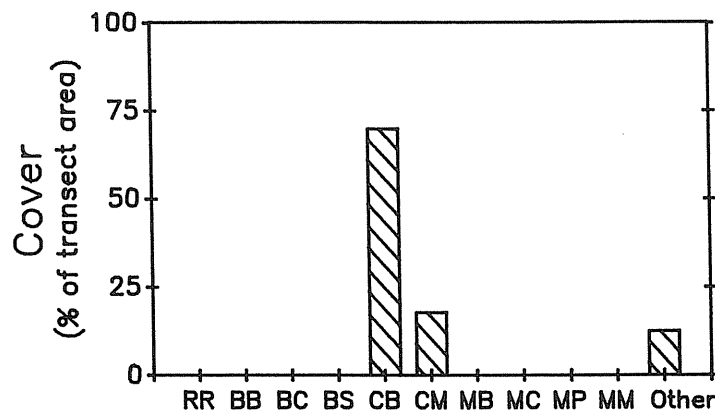
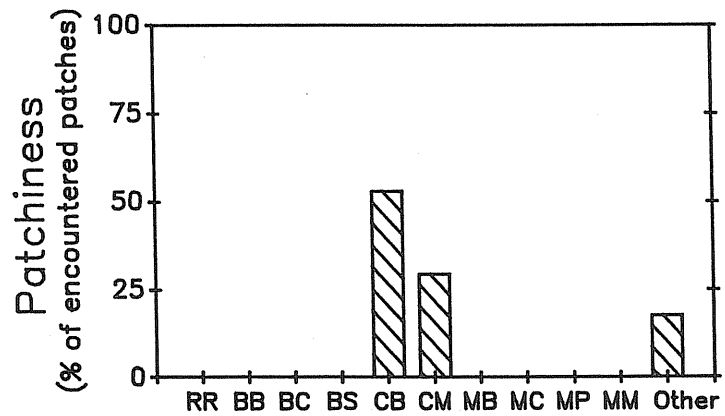
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
CB	Cobble + Boulder	69.6	52.9
CM	Cobble + Mud	17.8	29.4
CC	Cobble	12.6	17.6

Richness (S) = 3

Patchiness: Evenness (J) = 0.91 Diversity (H') = 1.00

Cover: Evenness (J) = 0.75 Diversity (H') = 0.82



Bottom type

Dive Code: 1990 Coquille Bank, Station 5, Dive A (90C5A)

Delta Dive: 2107

Date: 9/23/90

Time: 1556-1708

Minimum Depth: 483 ft (147 m)

Maximum Depth: 672 ft (205 m)

Remarks: Visibility approximately 15 feet

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes zacentrus</u>	2187.2	---	---	1684.4	501.1	1.8	---	---
<u>Sebastes wilsoni</u>	1828.3	---	1.8	1821.2	5.3	---	---	---
<u>Microstomus pacificus</u>	310.9	---	135.0	140.4	33.8	1.8	---	---
<u>Sebastes helvomaculatus</u>	104.8	---	5.3	81.7	17.8	---	---	---
<u>Lyopsetta exilis</u>	58.6	---	44.4	14.2	---	---	---	---
<u>Sebastes elongatus</u>	55.1	---	---	12.4	42.6	---	---	---
<u>Glyptocephalus zachirus</u>	37.3	---	---	10.7	24.9	1.8	---	---
<u>Hydrolagus colliei</u>	28.4	---	---	---	---	21.3	7.1	---
unknown prickleback (?)	28.4	---	17.8	10.7	---	---	---	---
<u>Paricelius hopliticus</u>	24.9	---	12.4	12.4	---	---	---	---
unknown mottled poacher	23.1	---	7.1	16.0	---	---	---	---
<u>Eptatretus sp.</u>	21.3	---	---	---	21.3	---	---	---
unknown mottled sculpin	14.2	---	---	5.3	8.9	---	---	---
<u>Lycodes corteziianus</u>	12.4	---	---	12.4	---	---	---	---
<u>Pleuronichthys sp.</u>	10.7	---	---	5.3	5.3	---	---	---
<u>Sebastes proriger</u>	8.9	---	---	---	8.9	---	---	---
<u>Anoplopoma fimbria</u>	7.1	---	---	---	---	7.1	---	---
<u>Icelinus filamentosus</u>	7.1	---	3.6	3.6	---	---	---	---
<u>Sebastolobus alascanus</u>	3.6	---	---	---	3.6	---	---	---
<u>Agonus acipenserinus</u>	3.6	---	---	3.6	---	---	---	---
<u>Sebastes babcocki</u>	1.8	---	---	1.8	---	---	---	---
<u>Rathbunella sp.</u>	1.8	---	1.8	---	---	---	---	---
SCHOOLING FISHES:								
<u>Anoplopoma fimbria</u>	99.5	---	---	---	---	88.8	10.7	---
ALL FISHES:								
Total density:	4879.1							
Diversity indices:	Richness (S) = 22	Evenness (J) = 0.46	Diversity (H') = 1.43					

INVERTEBRATES: species present

Allocentrotus fragilis

Aphrocallistes vastus

Balticinia sp.

Ceremaster patagonicus

Gephyreaster swifti

Henricia spp.

Hippasterias sp.

Lopholithodes foraminatus

Munida quadrispina

Mycale sp.

Octopus spp.

Ophiacantha sp.

Pandalus platyceros

Pandalus spp.

Poraniopsis inflata

Pycnopodia helianthoides

Scypha/Iophon

Staurocalyptus sp.

Stylatula elongata

Swiftia spp.

unknown prickly sponge

unknown purple globular sponge

unknown tubular sponge

OTHER ORGANISMS PRESENT:

Beggiotoa spp. (bacterial mat)

(Dive 90C5A continued)

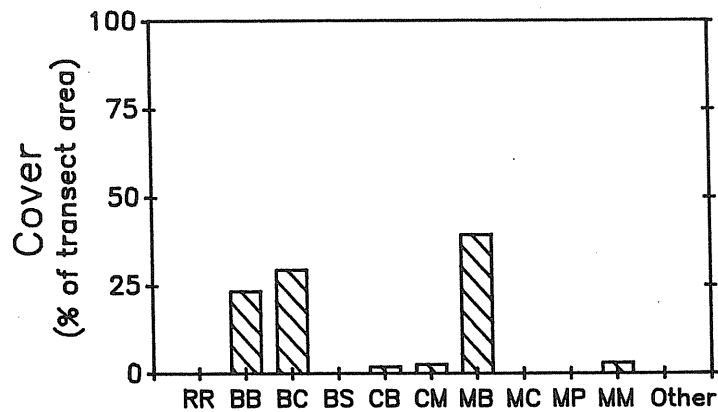
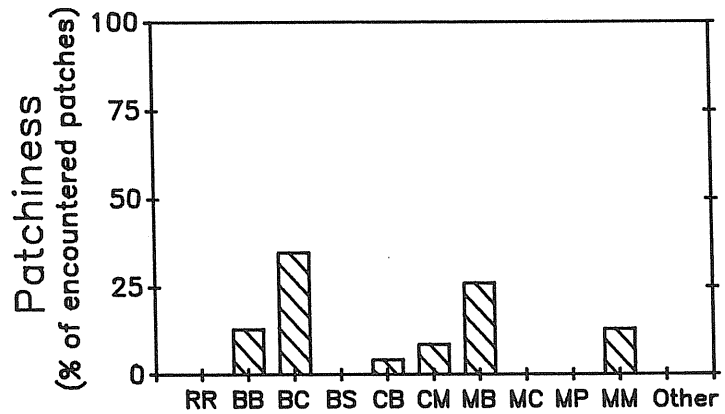
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MB	Mud + Boulder	39.4	26.1
BC	Boulder + Cobble	29.5	34.8
BB	Boulder	23.4	13.0
MM	Mud	3.1	13.0
CM	Cobble + Mud	2.6	8.7
CB	Cobble + Boulder	2.0	4.3

Richness (S) = 6

Patchiness: Evenness (J) = 0.89 Diversity (H') = 1.60

Cover: Evenness (J) = 0.75 Diversity (H') = 1.35



Bottom type

Dive Code: 1990 Coquille Bank, Station 5, Dive B (90C5B)

Delta Dive: 2123

Date: 9/26/90

Time: 1549-1702

Minimum Depth: 475 ft (145 m)

Maximum Depth: 685 ft (209 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	443.2	3.2	312.9	125.5	1.6	---	---	---
<u>Sebastes zacentrus</u>	397.1	---	93.7	249.4	54.0	---	---	---
<u>Sebastes helvomaculatus</u>	84.2	---	22.2	57.2	4.8	---	---	---
<u>Lyopsetta exilis</u>	50.8	1.6	39.7	9.5	---	---	---	---
unknown mottled sculpin	22.2	---	14.3	7.9	---	---	---	---
<u>Glyptocephalus zachirus</u>	19.1	---	1.6	11.1	6.4	---	---	---
<u>Rathbunella</u> sp.	17.5	---	12.7	4.8	---	---	---	---
<u>Eptatretus</u> sp.	14.3	4.8	---	---	1.6	6.4	1.6	---
<u>Microstomus pacificus</u>	12.7	---	3.2	6.4	1.6	1.6	---	---
<u>Sebastes</u> sp. (rockfish)	9.5	---	---	9.5	---	---	---	---
<u>Sebastes elongatus</u>	7.9	---	---	7.9	---	---	---	---
<u>Lycodes corteziianus</u>	3.2	---	---	3.2	---	---	---	---
<u>Sebastes ruberrimus</u>	3.2	---	3.2	---	---	---	---	---
<u>Anoplopoma fimbria</u>	3.2	---	---	---	---	---	3.2	---
<u>Hydrolagus colliei</u>	1.6	---	---	---	---	---	1.6	---
<u>Sebastes alutus</u>	1.6	---	---	---	1.6	---	---	---
<u>Hexagrammos decagrammus</u>	1.6	---	---	---	---	1.6	---	---

SCHOOLING FISHES:

<u>Sebastes wilsoni</u>	31.8	---	28.6	3.2	---	---	---	---
<u>Sebastes zacentrus</u>	17.5	---	11.1	6.4	---	---	---	---
<u>Anoplopoma fimbria</u>	15.9	---	---	---	---	---	15.9	---
<u>Rathbunella</u> sp.	1.6	---	1.6	---	---	---	---	---

ALL FISHES:

Total density: 1159.6

Diversity indices: Richness (S) = 18 Evenness (J) = 0.55 Diversity (H') = 1.60

INVERTEBRATES: species present

Acantholithodes hispidus

Actiniidae

Allocentrotus fragilis

Aphrocallistes vastus

Archidoris odhneri

Buccinidae

Ceremaster patagonicus

Chorilia longipes

Crossaster papposus

Dirona albolineata

Fusitriton oregonensis

Gephyreaster swifti

Gorgonacea

Henricia spp.

Lophogorgia-like

Lopholithodes foraminatus

Mediaster aequalis

Munida quadrispina

Mycale sp.

Octopus spp.

Ophiacantha sp.

Pandalus platyceros

Pandalus spp.

Parastichopus californicus

Pteraster militaris

Scypha/Iophon

Staurocalyptus-like

Stylatula elongata

Terebratulida

unknown prickly sponge

unknown purple globular sponge

unknown tongue sponge

(Dive 90C5B continued)

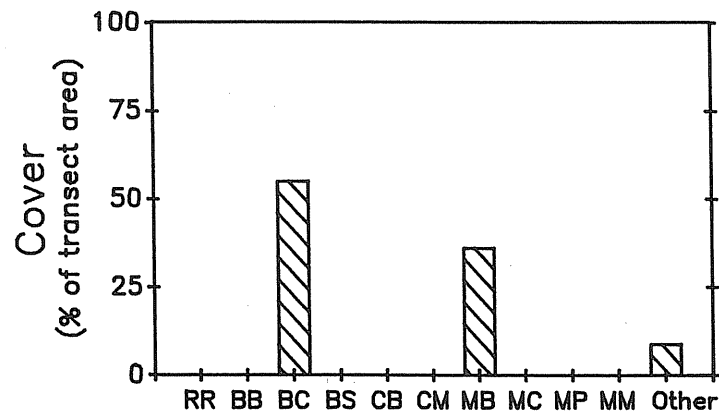
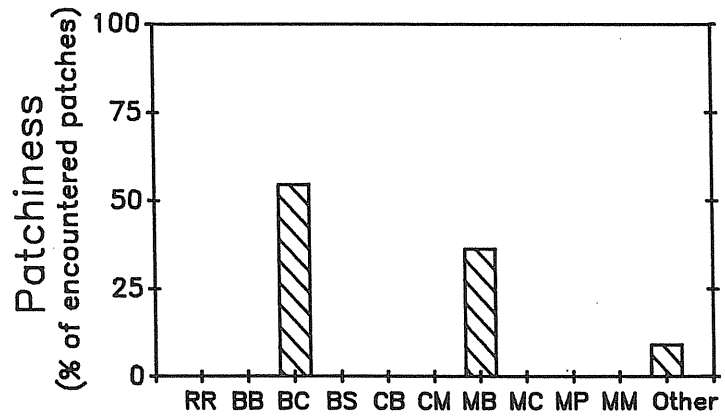
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BC	Boulder + Cobble	55.0	54.5
MB	Mud + Boulder	36.1	36.4
BM	Boulder + Mud	8.9	9.1

Richness (S) = 3

Patchiness: Evenness (J) = 0.83 Diversity (H') = 0.92

Cover: Evenness (J) = 0.83 Diversity (H') = 0.91



Bottom type

Dive Code: 1990 Coquille Bank, Station 6, Dive A (90C6A)

Delta Dive: 2112

Date: 9/24/90

Time: 1645-1801

Minimum Depth: 900 ft (274 m)

Maximum Depth: 1180 ft (335 m)

Remarks: Heavily trawled first three quarters of dive

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Lycodes corteziianus</u>	80.5	---	---	8.4	52.0	20.1	---	---
<u>Eptatretus sp.</u>	77.2	---	3.4	15.1	20.1	31.9	6.7	---
<u>Microstomus pacificus</u>	73.8	---	---	11.7	25.2	30.2	6.7	---
<u>Glyptocephalus zachirus</u>	68.8	3.4	8.4	25.2	26.8	5.0	---	---
<u>Lycodapus mandibularis (?)</u>	47.0	---	30.2	16.8	---	---	---	---
<u>Sebastolobus alascanus</u>	36.9	---	5.0	13.4	16.8	1.7	---	---
<u>Lyopsetta exilis</u>	28.5	---	5.0	21.8	1.7	---	---	---
unknown small flatfish	13.4	---	3.4	5.0	3.4	1.7	---	---
unknown mottled poacher	13.4	---	1.7	11.7	---	---	---	---
<u>Sebastes babcocki</u>	10.1	---	---	---	1.7	8.4	---	---
<u>Hydrolagus colliei</u>	3.4	---	---	---	---	3.4	---	---
<u>Sebastes diploproa</u>	3.4	---	---	---	---	3.4	---	---
<u>Lycodes diapterus</u>	1.7	---	---	1.7	---	---	---	---
<u>Sebastes chlorostictus</u>	1.7	---	---	---	---	1.7	---	---
<u>Anoplopoma fimbria</u>	1.7	---	---	---	---	---	1.7	---
<u>Careproctus melanurus</u>	1.7	---	---	---	1.7	---	---	---
<u>Eopsetta jordani</u>	1.7	---	---	1.7	---	---	---	---

SCHOOLING FISHES:

None

ALL FISHES:

Total density: 464.6

Diversity indices: Richness (S) = 17 Evenness (J) = 0.77 Diversity (H') = 2.19

INVERTEBRATES: species present

Allocentrotus fragilis

Balticinia sp.

Chorilia longipes

Fusitriton oregonensis

Henricia spp.

Lophaster/Asterias

Lopholithodes foraminatus

Luidia foliolata

Mediaster aequalis

Octopus spp.

Pagurus spp.

Pandalus spp.

Parastichopus californicus

Pycnopodia helianthoides

Rathbunaster californicus

(Dive 90C6A continued)

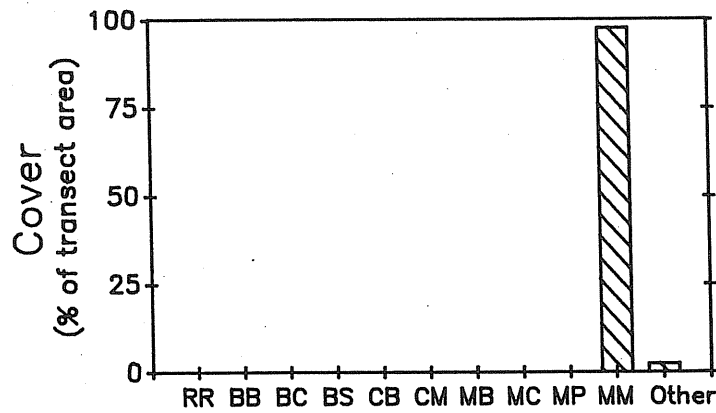
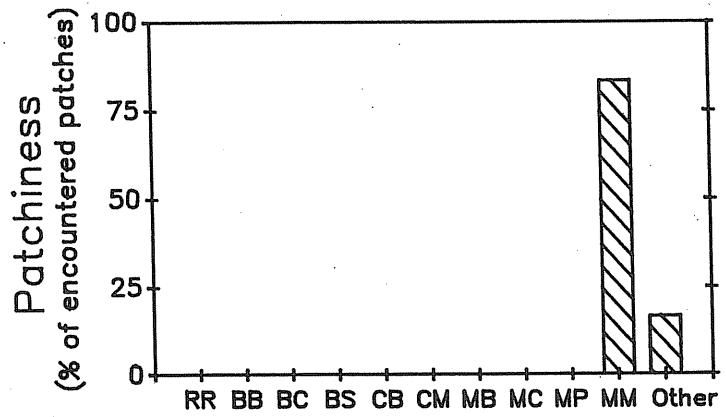
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	97.5	83.3
BM	Boulder + Mud	2.5	16.7

Richness (S) = 2

Patchiness: Evenness (J) = 0.65 Diversity (H') = 0.45

Cover: Evenness (J) = 0.17 Diversity (H') = 0.12



Bottom type

(Dive 90C6B continued)

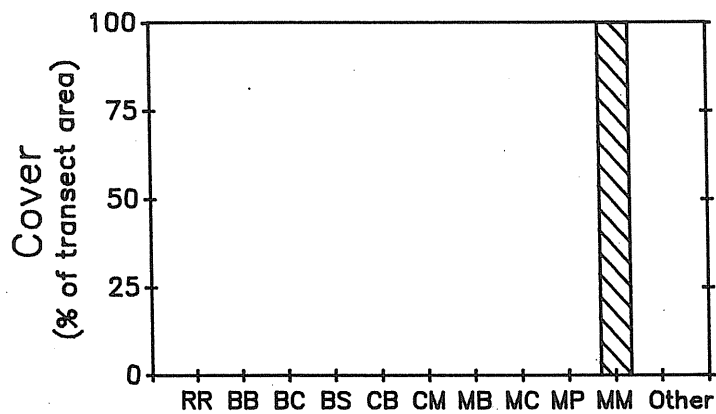
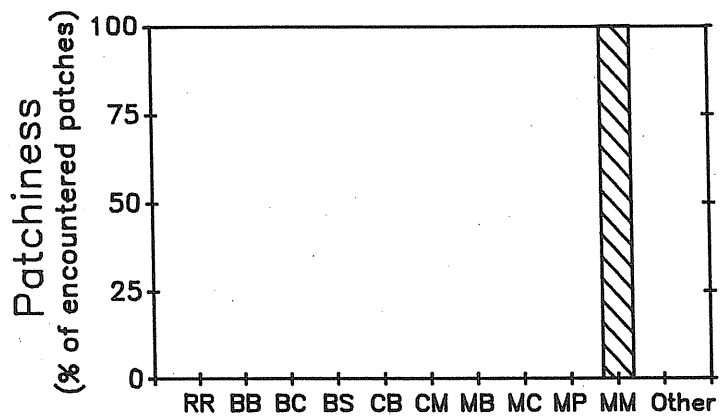
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	100.0	100.0

Richness (S) = 1

Patchiness: Evenness (J) = 0 Diversity (H') = 0

Cover: Evenness (J) = 0 Diversity (H') = 0



Bottom type

Dive Code: 1990 Coquille Bank, Station 6, Dive B (90C6B)

Delta Dive: 2122

Date: 9/26/90

Time: 1315-1427

Minimum Depth: 905 ft (276 m)

Maximum Depth: 1184 ft (361 m)

Remarks: Visibility less than 10 feet; heavy trawl tracks

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Microstomus pacificus</u>	223.5	---	72.6	36.3	84.1	28.7	1.9	---
<u>Lycodes corteziianus</u>	101.2	---	---	13.4	64.9	22.9	---	---
<u>Eptatretus sp.</u>	84.1	59.2	---	1.9	11.5	5.7	5.7	---
<u>Sebastes alascanus</u>	53.5	5.7	9.6	17.2	19.1	1.9	---	---
<u>Glyptocephalus zachirus</u>	53.5	1.9	5.7	9.6	34.4	1.9	---	---
<u>Lyopsetta exilis</u>	24.8	---	13.4	9.6	1.9	---	---	---
<u>Sebastes diploproa</u>	21.0	---	---	---	1.9	19.1	---	---
unknown mottled poacher	15.3	---	1.9	13.4	---	---	---	---
<u>Lycodapus mandibularis (?)</u>	13.4	13.4	---	---	---	---	---	---
<u>Careproctus melanurus</u>	3.8	---	---	---	3.8	---	---	---
<u>Raja binoculata</u>	1.9	---	---	---	---	1.9	---	---
<u>Raja rhina</u>	1.9	---	---	---	---	---	---	1.9
<u>Sebastes helvomaculatus</u>	1.9	---	---	---	1.9	---	---	---
<u>Anoplopoma fimbria</u>	1.9	---	---	---	---	---	1.9	---

SCHOOLING FISHES:

None

ALL FISHES:

Total density: 601.7

Diversity indices: Richness (S) = 14 Evenness (J) = 0.72 Diversity (H') = 1.91

INVERTEBRATES: species present

Allocentrotus fragilis

Buccinidae

Fusitriton oregonensis

Gephyreaster swifti

Hippasterias sp.

Luidia foliolata

Mediaster aequalis

Octopus spp.

Ophiacantha sp.

Ophiura sarsii

Opisthoteuthis californica

Pagurus spp.

Pandalus platyceros

Parastichopus californicus

Pennatula sp.

Pycnopodia helianthoides

Stomphia spp.

Stylasterias forreri

Tritonia festiva

Dive Code: 1990 Coquille Bank, Station 7, Dive A (90C7A)

Delta Dive: 2111

Date: 9/24/90

Time: 1301-1429

Minimum Depth: 383 ft (117 m)

Maximum Depth: 575 ft (175 m)

Remarks: Visibility 10-15 feet; lights dim; battery low

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
<u>NON-SCHOOLING FISHES:</u>								
<u>Sebastes wilsoni</u>	700.6	5.9	413.6	281.0	---	---	---	---
<u>Sebastes helvomaculatus</u>	152.4	2.0	9.9	112.8	25.7	2.0	---	---
<u>Sebastes elongatus</u>	69.3	---	2.0	47.5	17.8	2.0	---	---
<u>Microstomus pacificus</u>	33.6	---	4.0	7.9	11.9	9.9	---	---
<u>Sebastes</u> sp. (juvenile)	31.7	31.7	---	---	---	---	---	---
unknown mottled sculpin	25.7	---	9.9	15.8	---	---	---	---
<u>Sebastes zacentrus</u>	15.8	---	---	15.8	---	---	---	---
unknown fish	13.9	2.0	7.9	2.0	---	2.0	---	---
<u>Rathbunella</u> sp.	13.9	---	9.9	4.0	---	---	---	---
<u>Eptatretus</u> sp.	11.9	---	---	---	2.0	9.9	---	---
<u>Sebastes</u> sp. (rockfish)	11.9	2.0	2.0	7.9	---	---	---	---
<u>Sebastes alutus</u>	5.9	---	---	4.0	2.0	---	---	---
unknown flatfish	4.0	---	---	---	---	4.0	---	---
<u>Merluccius productus</u>	4.0	---	---	---	---	4.0	---	---
<u>Glyptocephalus zachirus</u>	4.0	---	---	4.0	---	---	---	---
<u>Hydrolagus colliei</u>	2.0	---	---	2.0	---	---	---	---
unknown mottled poacher	2.0	---	---	2.0	---	---	---	---
<u>Lyopsetta exilis</u>	2.0	---	2.0	---	---	---	---	---
<u>Pleuronichthys</u> sp.	2.0	---	---	---	2.0	---	---	---
<u>SCHOOLING FISHES:</u>								
<u>Sebastes wilsoni</u>	25.7	2.0	---	23.7	---	---	---	---
<u>ALL FISHES:</u>								
<u>Total density:</u>	1132.0							
Diversity indices:	Richness (S) = 16	Evenness (J) = 0.45	Diversity (H') = 1.25					

INVERTEBRATES: species present

Actiniidae

Aphrocallistes vastus

Archidoris odhneri

Ceremaster patagonicus

Chorilia longipes

Corallimorphus

Crossaster papposus

Ctenodiscus crispatus

Dermasterias imbricata

Dirona albolineata

Florometra serratissima

Fusitriton oregonensis

Gephyreaster swifti

Henricia spp.

Hippasterias sp.

Lophaster/Asterias

Luidia foliolata

Munida quadrispina

Ophiacantha sp.

Pandalus spp.

Parastichopus californicus

Poraniopsis inflata

Pteraster spp.

Pycnopodia helianthoides

Scypha/Iophon

Staurocalyptus-like

Stomphia spp.

Swiftia spp.

Terebratulida

Tritonia festiva

unknown purple globular sponge

(Dive 90C7A continued)

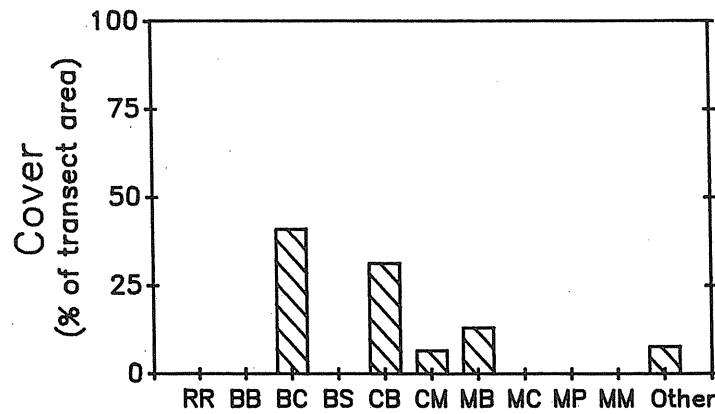
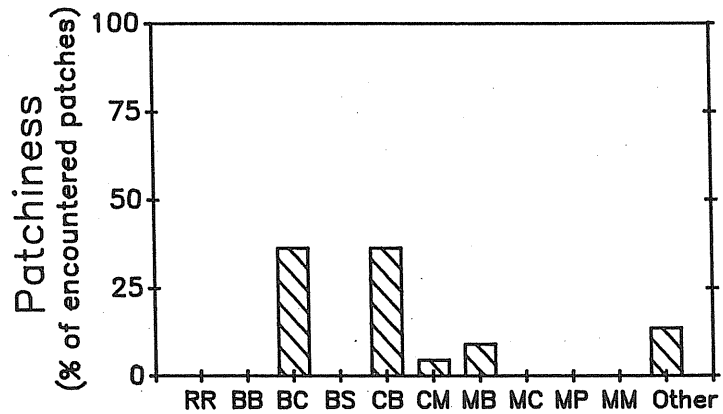
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BC	Boulder + Cobble	41.0	36.4
CB	Cobble + Boulder	31.3	36.4
MB	Mud + Boulder	13.1	9.1
CM	Cobble + Mud	6.7	4.5
BM	Boulder + Mud	6.2	9.1
CC	Cobble	1.7	4.5

Richness (S) = 6

Patchiness: Evenness (J) = 0.81 Diversity (H') = 1.45

Cover: Evenness (J) = 0.79 Diversity (H') = 1.42



Bottom type

Dive Code: 1990 Coquille Bank, Station 7, Dive B (90C7B)

Delta Dive: 2121

Date: 9/26/90

Time: 1058-1211

Minimum Depth: 360 ft (110 m)

Maximum Depth: 700 ft (213 m)

Remarks: Visibility 5-10 feet

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	1569.2	21.2	201.8	735.8	610.4	---	---	---
<u>Sebastes zacentrus</u>	323.9	---	48.8	260.4	14.7	---	---	---
<u>Sebastes helvomaculatus</u>	112.3	---	17.9	87.9	6.5	---	---	---
<u>Sebastes elongatus</u>	53.7	---	1.6	39.1	13.0	---	---	---
<u>Lyopsetta exilis</u>	45.6	---	19.5	21.2	4.9	---	---	---
<u>Microstomus pacificus</u>	44.0	---	6.5	27.7	9.8	---	---	---
<u>Anoplopoma fimbria</u>	17.9	---	---	---	---	17.9	---	---
<u>Sebastes chlorostictus</u>	16.3	---	1.6	8.1	6.5	---	---	---
<u>Glyptocephalus zachirus</u>	13.0	1.6	3.3	6.5	1.6	---	---	---
<u>Sebastes</u> sp. (large)	9.8	---	1.6	8.1	---	---	---	---
<u>Icelinus</u> sp. (?)	9.8	---	---	8.1	1.6	---	---	---
<u>Scomber japonicus</u>	9.8	---	---	---	9.8	---	---	---
unknown mottled sculpin	8.1	---	6.5	1.6	---	---	---	---
unknown small flatfish	6.5	---	3.3	3.3	---	---	---	---
<u>Eptatretus</u> sp.	4.9	---	---	---	4.9	---	---	---
<u>Sebastolobus alascanus</u>	4.9	---	---	1.6	1.6	1.6	---	---
unknown mottled poacher	4.9	---	3.3	1.6	---	---	---	---
<u>Rathbunella</u> sp.	4.9	---	4.9	---	---	---	---	---
<u>Sebastes</u> sp. (juvenile)	3.3	3.3	---	---	---	---	---	---
<u>Paricelius hopliticus</u>	3.3	---	3.3	---	---	---	---	---
unknown fish	1.6	---	---	1.6	---	---	---	---
<u>Hydrolagus colliei</u>	1.6	---	---	---	---	1.6	---	---
<u>Ophiodon elongatus</u>	1.6	---	---	---	---	---	---	1.6
unknown blenny-like fish	1.6	---	1.6	---	---	---	---	---
SCHOOLING FISHES:								
<u>Anoplopoma fimbria</u>	57.0	---	---	---	---	57.0	---	---
<u>Sebastes wilsoni</u>	16.3	---	---	16.3	---	---	---	---
<u>Scomber japonicus</u>	3.3	---	---	---	3.3	---	---	---
ALL FISHES:								
Total density:	2348.9							
Diversity indices:	Richness (S) = 21	Evenness (J) = 0.42	Diversity (H') = 1.27					

INVERTEBRATES: species present

Actiniidae

Allocentrotus fragilis

Archidoris odhneri

Buccinidae

Ceremaster patagonicus

Chorilia longipes

Corallimorphus

Crossaster papposus

Florometra serrastissima

Henricia spp.

Hippasterias sp.

Lophaster/Asterias

Lophogorgia-like

Mediaster aequalis

Metridium senile

Octopus spp.

Ophiacantha sp.

Parastichopus californicus

Poraniopsis inflata

Pycnopodia helianthoides

Rathbunaster californicus

Scypha/Iophon

Staurocalyptus-like

Swiftia spp.

Terebratulida

unknown finger sponge

unknown tongue sponge

OTHER SPECIES PRESENT:

Beggiotoa spp. (bacterial mat)

(Dive 90C7B continued)

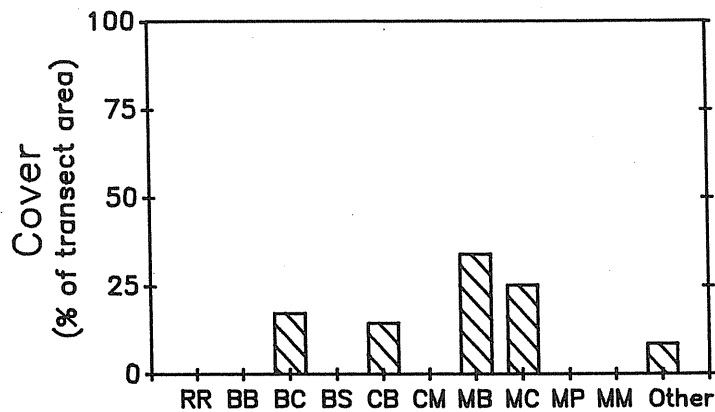
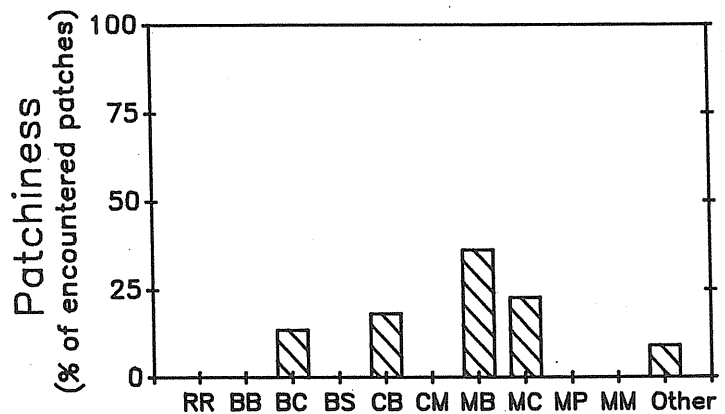
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MB	Mud + Boulder	34.1	36.4
MC	Mud + Cobble	25.3	22.7
BC	Boulder + Cobble	17.3	13.6
CB	Cobble + Boulder	14.6	18.2
BM	Boulder + Mud	8.7	9.1

Richness (S) = 5

Patchiness: Evenness (J) = 0.93 Diversity (H') = 1.50

Cover: Evenness (J) = 0.94 Diversity (H') = 1.51



Bottom type

Dive Code: 1990 Coquille Bank, Station 8, Dive A (90C8A)

Delta Dive: 2114

Date: 9/26/90

Time: 0831-0957

Minimum Depth: 505 ft (154 m)

Maximum Depth: 620 ft (189 m)

Remarks: Trawl tracks throughout dive; strong current

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes zacentrus</u>	177.9	---	10.9	123.4	43.6	---	---	---
<u>Sebastes helvomaculatus</u>	148.9	3.6	1.8	98.0	43.6	1.8	---	---
<u>Sebastes elongatus</u>	127.1	---	1.8	34.5	79.9	10.9	---	---
<u>Glyptocephalus zachirus</u>	63.5	---	25.4	14.5	23.6	---	---	---
<u>Microstomus pacificus</u>	63.5	---	9.1	23.6	25.4	5.4	---	---
<u>Rathbunella</u> sp.	41.8	---	38.1	3.6	---	---	---	---
<u>Sebastes wilsoni</u>	30.9	---	---	29.0	1.8	---	---	---
unknown prickleback (?)	30.9	---	16.3	14.5	---	---	---	---
<u>Anoplopoma fimbria</u>	18.2	---	---	---	---	3.6	14.5	---
<u>Eptatretus</u> sp.	14.5	---	---	---	10.9	3.6	---	---
<u>Agonus acipenserinus</u>	7.3	---	3.6	3.6	---	---	---	---
<u>Sebastes proriger</u>	5.4	---	---	---	3.6	1.8	---	---
<u>Ophiodon elongatus</u>	5.4	---	---	---	---	---	1.8	3.6
<u>Sebastes</u> sp. (rockfish)	3.6	---	---	3.6	---	---	---	---
<u>Icelinus filamentosus</u>	3.6	---	---	1.8	1.8	---	---	---
<u>Paricelius hopliticus</u>	3.6	---	---	3.6	---	---	---	---
unknown mottled poacher	3.6	---	3.6	---	---	---	---	---
<u>Hipoglossus stenolepis</u>	1.8	---	---	---	---	---	---	1.8
<u>Lyopsetta exilis</u>	1.8	---	---	1.8	---	---	---	---
SCHOOLING FISHES:								
<u>Scomber japonicus</u>	246.9	---	---	---	---	210.6	36.3	---
<u>Anoplopoma fimbria</u>	36.3	---	---	---	---	---	36.3	---
ALL FISHES:								
Total density:	1036.6							
Diversity indices:	Richness (S) = 20	Evenness (J) = 0.76	Diversity (H') = 2.27					

INVERTEBRATES: species present

Acantholithodes hispidus

Actinostola sp.

Allocentrotus fragilis

Aphrocallistes vastus

Archidoris odhneri

Buccinidae

Dendrodoris sp.

Gorgonocephalus eucinemis

Henricia spp.

Lophogorgia-like

Luidia foliolata

Munida quadrispina

Mycale sp.

Ophiacantha sp.

Ophiura sarsii

Pandalus spp.

Parastichopus californicus

Pteraster militaris

Pycnopodia helianthoides

Scypha/Iophon

Stomphia coccinea

Stylatula elongata

unknown prickly sponge

unknown purple globular sponge

Virgularia sp.

Zoanthinaria sp.

(Dive 90C8A continued)

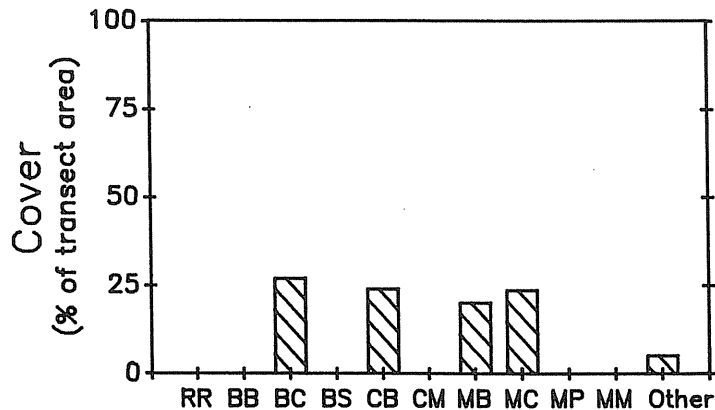
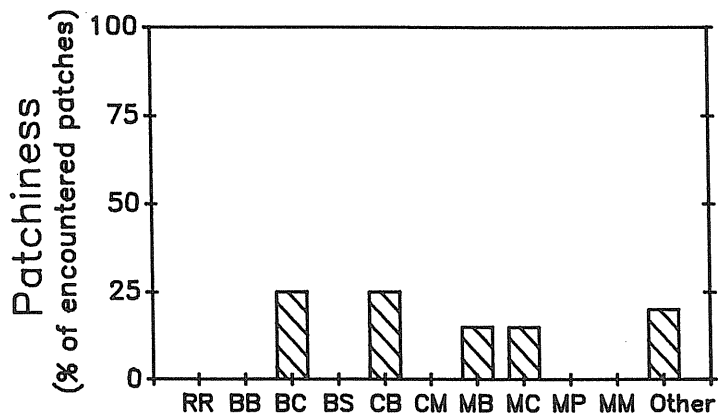
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BC	Boulder + Cobble	26.9	25.0
CB	Cobble + Boulder	24.0	25.0
MC	Mud + Cobble	23.7	15.0
MB	Mud + Boulder	20.1	15.0
CC	Cobble	5.2	20.0

Richness (S) = 5

Patchiness: Evenness (J) = 0.98 Diversity (H') = 1.58

Cover: Evenness (J) = 0.94 Diversity (H') = 1.51



Bottom type

Dive Code: 1990 Coquille Bank, Station 8, Dive B (90C8B)

Delta Dive: 2120

Date: 9/26/90

Time: 0820-0932

Minimum Depth: 500 ft (152 m)

Maximum Depth: 649 ft (198 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes zacentrus</u>	208.3	---	72.0	122.2	14.1	---	---	---
<u>Sebastes helvomaculatus</u>	150.4	1.6	64.2	81.4	3.1	---	---	---
<u>Sebastes elongatus</u>	83.0	---	4.7	59.5	18.8	---	---	---
<u>Sebastes wilsoni</u>	73.6	---	39.2	34.5	---	---	---	---
<u>Microstomus pacificus</u>	45.4	1.6	6.3	29.8	6.3	---	---	1.6
<u>Rathbunella</u> sp.	36.0	---	26.6	9.4	---	---	---	---
unknown mottled sculpin	14.1	---	7.8	6.3	---	---	---	---
<u>Glyptocephalus zachirus</u>	12.5	---	3.1	9.4	---	---	---	---
<u>Eptatretus</u> sp.	11.0	1.6	---	---	---	---	7.8	1.6
<u>Lyopsetta exilis</u>	11.0	1.6	9.4	---	---	---	---	---
<u>Icelinus filamentosus</u>	6.3	---	1.6	4.7	---	---	---	---
unknown flatfish	4.7	---	---	4.7	---	---	---	---
<u>Lycodes corteziianus</u>	4.7	---	---	4.7	---	---	---	---
unknown fish	1.6	1.6	---	---	---	---	---	---
<u>Merluccius productus</u>	1.6	---	---	---	---	---	---	1.6
<u>Sebastes nigrocinctus</u>	1.6	---	1.6	---	---	---	---	---
<u>Anoplopoma fimbria</u>	1.6	---	---	---	---	---	1.6	---
<u>Ophiodon elongatus</u>	1.6	---	---	---	---	---	1.6	---
unknown mottled poacher	1.6	---	1.6	---	---	---	---	---
<u>Eopsetta jordani</u>	1.6	---	---	1.6	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes zacentrus</u>	21.9	---	12.5	9.4	---	---	---	---
<u>Sebastes elongatus</u>	1.6	---	---	---	1.6	---	---	---

ALL FISHES:

Total density: 695.4

Diversity indices: Richness (S) = 18 Evenness (J) = 0.68 Diversity (H') = 1.97

INVERTEBRATES: species present

Acantholithodes hispidus
Allocentrotus fragilis
Anthomastus ritteri
Aphrocallistes vastus
Archidoris odhneri
Buccinidae
Ceremaster patagonicus
Chorilia longipes
Dendrodoris sp.
Dirona albolineata
Fusitriton oregonensis
Gephyreaster swifti
Gorgonacea
Gorgonocephalus eucinemis
Henricia spp.
Hippasterias sp.
Lophogorgia-like
Lopholithodes foraminatus
Luidia foliolata
Mediaster aequalis
Munida quadrispina
Mycale sp.
Octopus spp.
Ophiacantha sp.
Pandalus platyceros
Pandalus spp.
Parastichopus californicus
Poraniopsis inflata
Pteraster tessellatus
Pycnopodia helianthoides
Rathbunaster californicus
Scypha/Iophon
Staurocalyptus-like
Stomphia spp.
Swiftia spp.
Terebratulida
unknown prickly sponge
unknown purple globular sponge
unknown tubular sponge

(Dive 90C8B continued)

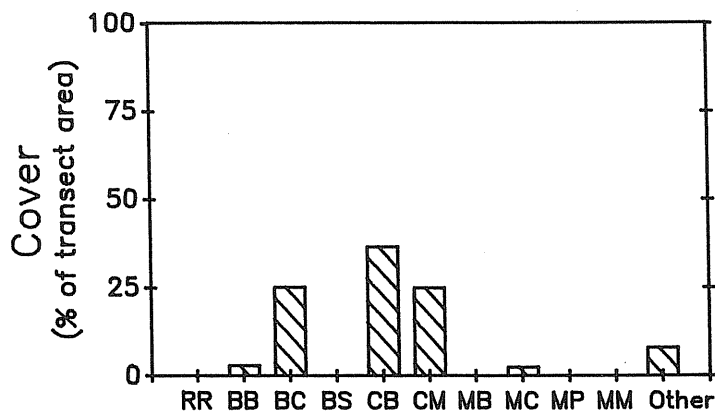
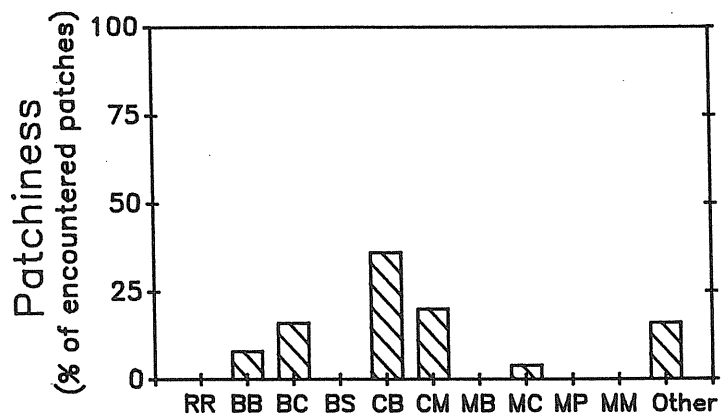
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
CB	Cobble + Boulder	36.5	36.0
BC	Boulder + Cobble	25.1	16.0
CM	Cobble + Mud	24.9	20.0
CC	Cobble	8.0	16.0
BB	Boulder	2.9	8.0
MC	Mud + Cobble	2.5	4.0

Richness (S) = 6

Patchiness: Evenness (J) = 0.90 Diversity (H') = 1.61

Cover: Evenness (J) = 0.81 Diversity (H') = 1.46



Bottom type

Dive Code: 1990 Daisy Bank, Station 1, Dive A (90D1A)

Delta Dive: 2125

Date: 9/27/90

Time: 0835-0946

Minimum Depth: 477 ft (145 m)

Maximum Depth: 595 ft (181 m)

Remarks: 30-40 feet visibility

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	6765.5	---	28.0	6737.5	---	---	---	---
<u>Sebastes zacentrus</u>	1158.9	---	155.9	857.2	77.9	38.0	---	---
<u>Sebastes helvomaculatus</u>	783.2	---	83.9	437.6	261.7	---	---	---
<u>Sebastes elongatus</u>	91.9	---	---	18.0	63.9	10.0	---	---
<u>Sebastes</u> sp. (juvenile)	69.9	---	---	---	---	---	---	---
<u>Sebastes pinniger</u>	18.0	---	---	---	---	---	14.0	4.0
<u>Rathbunella</u> sp.	18.0	---	18.0	---	---	---	---	---
<u>Hydrolagus colliei</u>	16.0	---	---	---	---	---	2.0	14.0
<u>Paricelius hopliticus</u>	16.0	---	6.0	10.0	---	---	---	---
unknown mottled sculpin	16.0	---	4.0	12.0	---	---	---	---
<u>Radulinus asprellus</u>	12.0	---	4.0	8.0	---	---	---	---
<u>Ophiodon elongatus</u>	8.0	---	---	---	---	---	---	8.0
unknown mottled poacher	6.0	---	4.0	2.0	---	---	---	---
<u>Microstomus pacificus</u>	6.0	---	---	6.0	---	---	---	---
unknown prickleback (?)	4.0	---	4.0	---	---	---	---	---
<u>Sebastes chlorostictus</u>	2.0	---	---	---	---	2.0	---	---
<u>Icelinus filamentosus</u>	2.0	---	---	2.0	---	---	---	---
<u>Eopsetta jordani</u>	2.0	---	---	---	2.0	---	---	---
SCHOOLING FISHES:								
<u>Sebastes</u> sp. (juvenile)	199.8	---	---	---	---	---	---	---
ALL FISHES:								
Total density:	9195.2							
Diversity indices:	Richness (S) = 17	Evenness (J) = 0.29	Diversity (H') = 0.83					

INVERTEBRATES: speies present

Aphrocallistes vastus

Chorilia longipes

Crania californica

Lopholithodes foraminatus

Munida quadrispina

Octopus spp.

Ophiacantha sp.

Pandalus spp.

Staurocalyptus-like

Stomphia spp.

Swiftia spp.

unknown white fennistrate sponge

(Dive 90D1A continued)

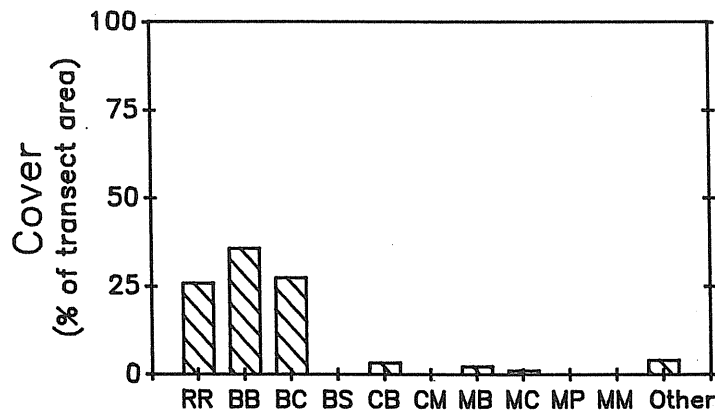
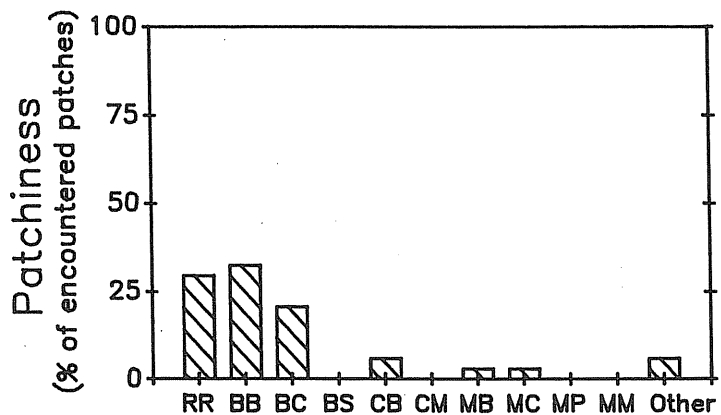
BOTTOM TYPE: (80% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BB	Boulder	35.8	32.4
BC	Boulder + Cobble	27.4	20.6
RR	Rock Ridge	25.9	29.4
CB	Cobble + Boulder	3.4	5.9
SC	Sand + Cobble	3.0	2.9
MB	Mud + Boulder	2.4	2.9
MC	Mud + Cobble	1.1	2.9
CC	Cobble	1.1	2.9

Richness (S) = 8

Patchiness: Evenness (J) = 0.78 Diversity (H') = 1.63

Cover: Evenness (J) = 0.71 Diversity (H') = 1.48



Bottom type

Dive Code: 1990 Daisy Bank, Station 1, Dive B (90D1B)

Delta Dive: 2129

Date: 9/28/90

Time: 0835-0947

Minimum Depth: 470 ft (143 m)

Maximum Depth: 602 ft (183 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	987.5	131.1	652.3	204.2	---	---	---	---
<u>Sebastes helvomaculatus</u>	652.3	19.8	393.2	239.3	---	---	---	---
<u>Sebastes proriger</u>	93.0	---	---	71.6	21.3	---	---	---
<u>Sebastes elongatus</u>	65.5	---	10.7	53.3	1.5	---	---	---
<u>Sebastes zacentrus</u>	22.9	---	1.5	18.3	3.0	---	---	---
unknown mottled sculpin	15.2	1.5	9.1	4.6	---	---	---	---
unknown fish	12.2	10.7	1.5	---	---	---	---	---
<u>Sebastes sp. (large)</u>	9.1	---	6.1	1.5	---	1.5	---	---
<u>Ophiodon elongatus</u>	7.6	---	---	---	---	---	---	7.6
<u>Sebastes pinniger</u>	6.1	---	---	---	---	---	6.1	---
<u>Hydrolagus colliei</u>	4.6	---	---	---	---	---	3.0	1.5
<u>Sebastes ruberrimus</u>	4.6	---	---	3.0	1.5	---	---	---
<u>Rathbunella sp.</u>	4.6	1.5	3.0	---	---	---	---	---
<u>Sebastes sp. (juvenile)</u>	3.0	---	1.5	1.5	---	---	---	---
<u>Eptatretus sp.</u>	1.5	1.5	---	---	---	---	---	---
<u>Raja binoculata</u>	1.5	---	---	---	---	---	---	1.5
<u>Lycodes corteziianus</u>	1.5	---	1.5	---	---	---	---	---
<u>Icelinus filamentosus</u>	1.5	---	---	1.5	---	---	---	---
<u>Lyopsetta exilis</u>	1.5	---	1.5	---	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	1254.2	45.7	1159.7	48.8	---	---	---	---
<u>Sebastes sp. (juvenile)</u>	45.7	45.7	---	---	---	---	---	---
<u>Sebastes proriger</u>	18.3	---	---	18.3	---	---	---	---
<u>Sebastes sp. (rockfish)</u>	18.3	---	---	18.3	---	---	---	---
<u>Sebastes helvomaculatus</u>	3.0	---	3.0	---	---	---	---	---

ALL FISHES:

Total density: 3235.3

Diversity indices: Richness (S) = 20 Evenness (J) = 0.32 Diversity (H') = 0.97

INVERTEBRATES: species present

Aphrocallistes vastus

Crania californica

Lopholithodes foraminatus

Ophiacantha sp.

Poraniopsis inflata

Pteraster tessellatus

Staurocalyptus-like

Stomphia coccinea

unknown white fenestrated sponge

(Dive 90D1B continued)

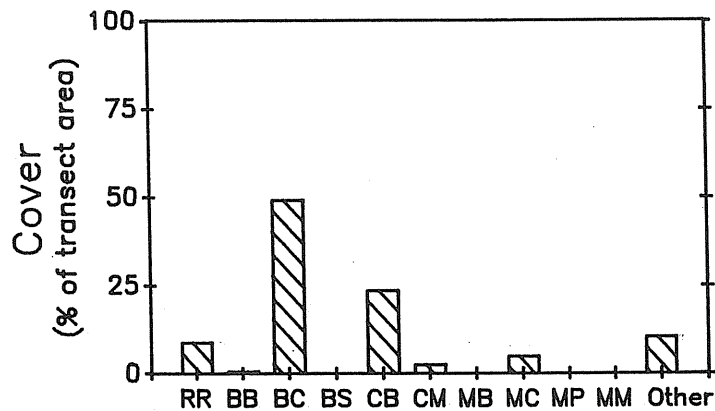
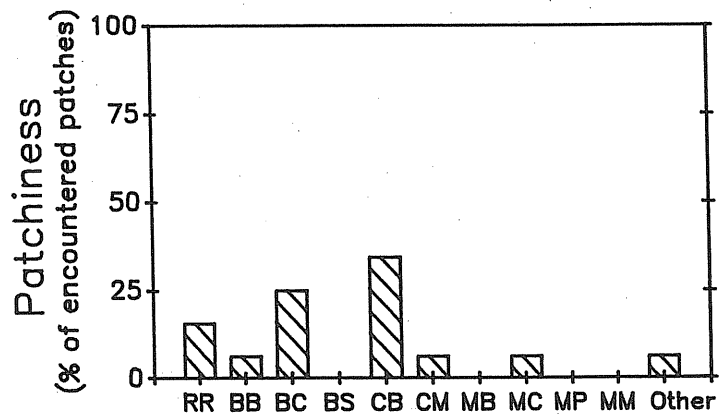
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BC	Boulder + Cobble	49.1	25.0
CB	Cobble + Boulder	23.6	34.4
CC	Cobble	10.4	6.3
RR	Rock Ridge	8.9	15.6
MC	Mud + Cobble	4.9	6.3
CM	Cobble + Mud	2.5	6.3
BB	Boulder	0.6	6.3

Richness (S) = 7

Patchiness: Evenness (J) = 0.87 Diversity (H') = 1.70

Cover: Evenness (J) = 0.72 Diversity (H') = 1.41



Bottom type

Dive Code: 1990 Daisy Bank, Station 2, Dive A (90D2A)

Delta Dive: 2126

Date: 9/27/90

Time: 1050-1204

Minimum Depth: 425 ft (129 m)

Maximum Depth: 700 ft (213 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	3244.9	99.9	665.4	2467.6	12.0	---	---	---
<u>Sebastes sp. (juvenile)</u>	1464.6	1404.7	59.9	---	---	---	---	---
<u>Sebastes helvomaculatus</u>	965.1	2.0	253.8	637.4	71.9	---	---	---
<u>Sebastes zacentrus</u>	207.8	4.0	171.8	32.0	---	---	---	---
<u>Sebastes chlorostictus</u>	24.0	---	2.0	14.0	6.0	---	2.0	---
<u>Sebastes elongatus</u>	22.0	---	---	8.0	14.0	---	---	---
unknown mottled sculpin	16.0	---	16.0	---	---	---	---	---
<u>Lyopsetta exilis</u>	12.0	---	2.0	10.0	---	---	---	---
<u>Sebastes sp. (large)</u>	10.0	---	8.0	---	2.0	---	---	---
<u>Paricelius hopliticus</u>	8.0	---	8.0	---	---	---	---	---
<u>Hydrolagus colliei</u>	4.0	---	---	---	---	4.0	---	---
<u>Ophiodon elongatus</u>	4.0	---	---	---	---	---	---	4.0
<u>Raja rhina</u>	2.0	---	---	---	---	---	---	2.0
<u>Lycodes cortezianus</u>	2.0	---	---	2.0	---	---	---	---
<u>Microstomus pacificus</u>	2.0	---	---	---	2.0	---	---	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	1278.8	399.6	179.8	219.8	479.5	---	---	---
<u>Sebastes sp. (juvenile)</u>	1128.9	1128.9	---	---	---	---	---	---
<u>Sebastes zacentrus</u>	299.7	299.7	---	---	---	---	---	---
<u>Sebastes sp. (large)</u>	199.8	199.8	---	---	---	---	---	---
<u>Sebastes helvomaculatus</u>	2.0	---	2.0	---	---	---	---	---
ALL FISHES:								
Total density:	8897.5							
Diversity indices:	Richness (S) = 14	Evenness (J) = 0.35	Diversity (H') = 0.94					

INVERTEBRATES: species present

Aphrocallistes vastus

Florometra serrastissima

Lopholithodes foraminatus

Ophiacantha sp.

Pandalus spp.

Poraniopsis inflata

Pteraster militaris

Scypha/Iophon

Staurocalyptus-like

unknown white fenestrate sponge

(Dive 90D2A continued)

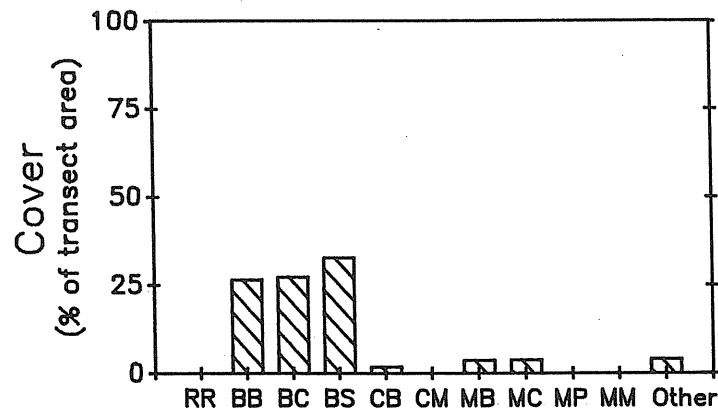
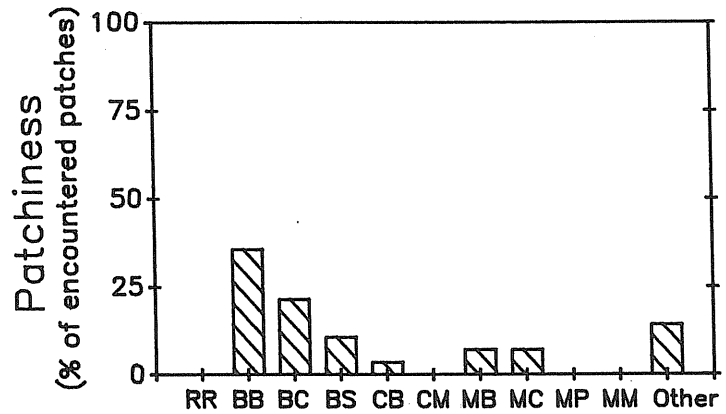
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BS	Boulder + Sand	32.7	10.7
BC	Boulder + Cobble	27.3	21.4
BB	Boulder	26.5	35.7
MC	Mud + Cobble	3.8	7.1
MB	Mud + Boulder	3.7	7.1
CS	Cobble + Sand	3.3	7.1
CB	Cobble + Boulder	1.9	3.6
SC	Sand + Cobble	0.8	7.1

Richness (S) = 8

Patchiness: Evenness (J) = 0.87 Diversity (H') = 1.81

Cover: Evenness (J) = 0.74 Diversity (H') = 1.54



Bottom type

Dive Code: 1990 Daisy Bank, Station 2, Dive B (90D2B)

Delta Dive: 2131

Date: 9/28/90

Time: 1150-1301

Minimum Depth: 430 ft (131 m)

Maximum Depth: 720 ft (219 m)

Remarks: 30-60+ feet visibility; gyroscope and compass not working

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes</u> sp.(juvenile)	14294.7	1429.7	---	---	---	---	---	---
<u>Sebastes wilsoni</u>	7586.7	---	4384.8	3201.9	---	---	---	---
<u>Sebastes helvomaculatus</u>	1430.3	39.8	125.1	955.4	309.9	---	---	---
<u>Sebastes</u> sp. (rockfish)	62.6	---	56.9	2.8	2.8	---	---	---
<u>Radulinus asprellus</u>	34.1	---	22.7	11.4	---	---	---	---
<u>Sebastes elongatus</u>	31.3	---	5.7	14.2	11.4	---	---	---
<u>Hydrolagus colliei</u>	28.4	---	---	---	---	---	2.8	25.6
<u>Paricelius hopliticus</u>	28.4	---	19.9	8.5	---	---	---	---
unknown mottled sculpin	22.7	---	17.1	5.7	---	---	---	---
<u>Rathbunella</u> sp.	22.7	2.8	19.9	---	---	---	---	---
<u>Sebastes zacentrus</u>	19.9	---	8.5	11.4	---	---	---	---
<u>Ophiodon elongatus</u>	19.9	---	---	---	---	---	---	19.9
<u>Raja rhina</u>	14.2	---	---	---	---	---	---	14.2
<u>Glyptocephalus zachirus</u>	11.4	---	---	2.8	8.5	---	---	---
<u>Microstomus pacificus</u>	11.4	---	---	11.4	---	---	---	---
<u>Icelinus filamentosus</u>	8.5	---	---	8.5	---	---	---	---
<u>Sebastes pinniger</u>	5.7	---	---	---	---	---	---	5.7
<u>Sebastes ruberrimus</u>	5.7	---	2.8	---	---	---	---	2.8
unknown mottled poacher	5.7	---	2.8	2.8	---	---	---	---
<u>Lyopsetta exilis</u>	5.7	---	5.7	---	---	---	---	---
<u>Sebastolobus alascanus</u>	2.8	---	---	2.8	---	---	---	---
unknown prickleback (?)	2.8	---	2.8	---	---	---	---	---

SCHOOLING FISHES:

None

ALL FISHES:

Total density: 23655.7

Diversity indices: Richness (S) = 21 Evenness (J) = 0.22 Diversity (H') = 0.68

INVERTEBRATES: species present

Acantholithodes hispidus

Aphrocallistes vastus

Cancer sp.

Crania californica

Florometra serrastissima

Hippasterias sp.

Lophogorgia-like

Mediaster aequalis

Ophiacantha sp.

Poraniopsis inflata

Pteraster militaris

Scypha/Iophon

Staurocalyptus-like

Stomphia coccinea

Stylasterias forreri

Swiftia spp.

unknown white fenestrated sponge

(Dive 90D2B continued)

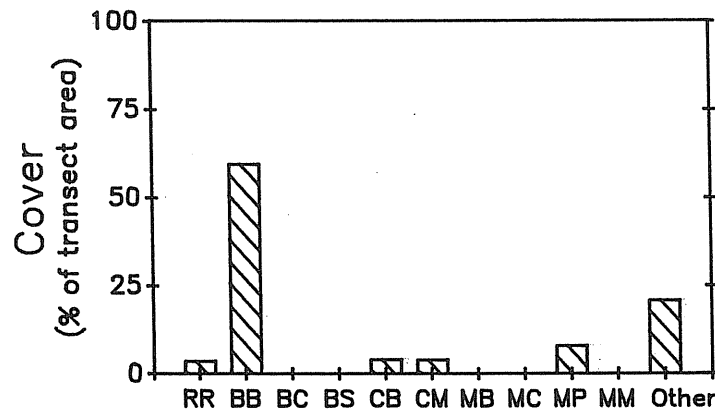
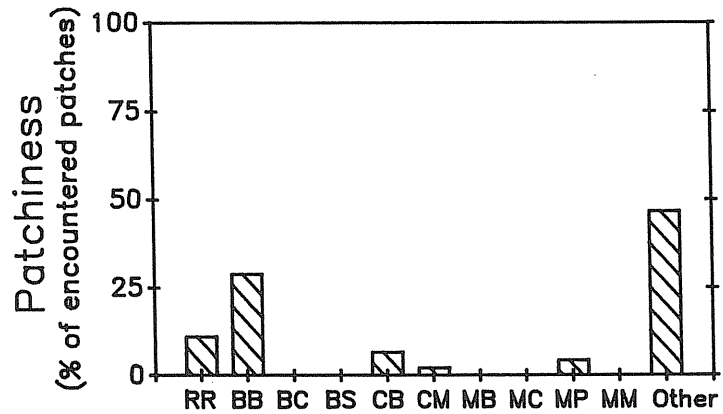
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BB	Boulder	59.5	28.9
FF	Flat Rock	8.1	22.2
MP	Mud + Pebble	7.9	4.4
FC	Flat Rock + Cobble	7.6	8.9
CB	Cobble + Boulder	4.1	6.7
CM	Cobble + Mud	4.0	2.2
RR	Rock Ridge	3.7	11.1
FB	Flat Rock + Boulder	3.1	6.7
SF	Sand + Flat Rock	1.4	4.4
PB	Pebble + Boulder	0.4	2.2
PP	Pebble	0.1	2.2

Richness (S) = 11

Patchiness: Evenness (J) = 0.85 Diversity (H') = 2.04

Cover: Evenness (J) = 0.62 Diversity (H') = 1.49



Bottom type

Dive Code: 1990 Daisy Bank, Station 3, Dive A (90D3A)

Delta Dive: 2127

Date: 9/27/90

Time: 1318-1432

Minimum Depth: 460 ft (140 m)

Maximum Depth: 620 ft (189 m)

Remarks: 40 feet visibility

Estimated density (#/hectare) by total length

Scientific Name	Total	0 dm	1 dm	2 dm	3 dm	4 dm	5 dm	≥ 5 dm
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	697.4	29.8	632.3	35.3	---	---	---	---
<u>Sebastes helvomaculatus</u>	572.8	29.8	403.5	139.5	---	---	---	---
<u>Sebastes elongatus</u>	107.9	---	20.5	78.1	9.3	---	---	---
<u>Sebastes zacentrus</u>	37.2	1.9	27.9	---	7.4	---	---	---
unknown mottled sculpin	27.9	---	20.5	7.4	---	---	---	---
<u>Sebastes proriger</u>	20.5	---	---	---	20.5	---	---	---
<u>Sebastes</u> sp. (rockfish)	16.7	11.2	5.6	---	---	---	---	---
<u>Lyopsetta exilis</u>	16.7	---	9.3	7.4	---	---	---	---
<u>Icelinus filamentosus</u>	14.9	---	1.9	13.0	---	---	---	---
<u>Sebastes ruberrimus</u>	11.2	---	---	---	---	---	---	11.2
unknown fish	5.6	1.9	3.7	---	---	---	---	---
<u>Eptatretus</u> sp.	5.6	---	---	---	1.9	---	1.9	---
<u>Microstomus pacificus</u>	5.6	---	---	3.7	1.9	---	---	---
<u>Ophiodon elongatus</u>	3.7	---	---	---	---	---	---	3.7
<u>Hydrolagus colliei</u>	1.9	---	---	---	---	---	1.9	---
<u>Raja binoculata</u>	1.9	---	---	---	---	---	---	1.9
<u>Raja kincaidii</u>	1.9	---	---	---	---	---	---	1.9
<u>Lycodes cortezianus</u>	1.9	---	1.9	---	---	---	---	---
<u>Sebastes paucispinis</u>	1.9	---	---	---	---	---	---	1.9
<u>Sebastes</u> sp. (large)	1.9	---	---	---	---	---	1.9	---
<u>Agonus acipenserinus</u>	1.9	---	---	1.9	---	---	---	---
<u>Rathbunella</u> sp.	1.9	---	1.9	---	---	---	---	---
<u>Eopsetta jordani</u>	1.9	---	---	---	---	---	1.9	---
<u>Glyptocephalus zachirus</u>	1.9	---	---	1.9	---	---	---	---

SCHOOLING FISHES:

<u>Sebastes wilsoni</u>	437.0	22.3	355.2	59.5	---	---	---	---
<u>Sebastes zacentrus</u>	44.6	---	---	44.6	---	---	---	---
<u>Sebastes elongatus</u>	7.4	---	1.9	---	5.6	---	---	---
<u>Sebastes helvomaculatus</u>	3.7	1.9	---	1.9	---	---	---	---

ALL FISHES:

Total density: 2054.9

Diversity indices: Richness (S) = 23 Evenness (J) = 0.42 Diversity (H') = 1.33

INVERTEBRATES: species present

Acantholithodes hispidus

Chorilia longipes

Crania californica

Fusitriton oregonensis

Lopholithodes foraminatus

Octopus spp.

Ophiacantha sp.

Pagurus spp.

Pteraster militaris

OTHER SPECIES PRESENT:

Beggiotoa spp. (bacterial mat)

(Dive 90D3A continued)

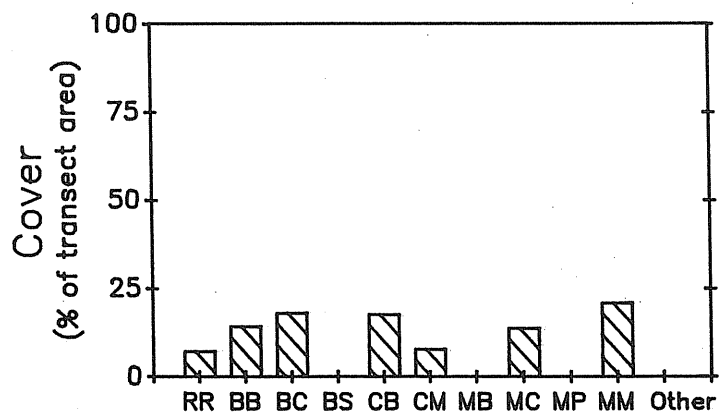
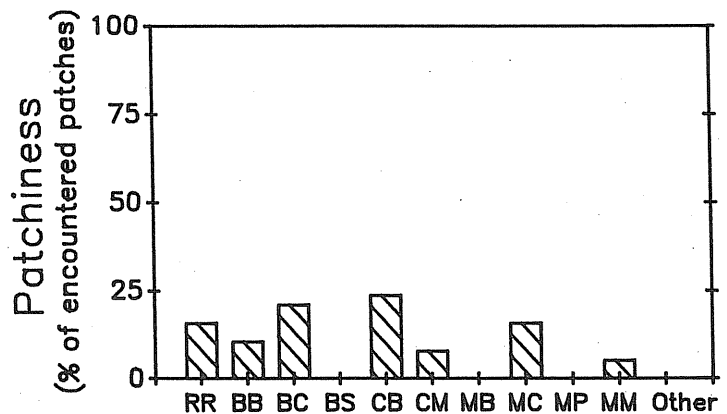
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
MM	Mud	21.0	5.3
BC	Boulder + Cobble	18.1	21.1
CB	Cobble + Boulder	17.7	23.7
BB	Boulder	14.3	10.5
MC	Mud + Cobble	13.8	15.8
CM	Cobble + Mud	7.9	7.9
RR	Rock Ridge	7.3	15.8

Richness (S) = 7

Patchiness: Evenness (J) = 0.95 Diversity (H') = 1.84

Cover: Evenness (J) = 0.97 Diversity (H') = 1.88



Bottom type

Dive Code: 1990 Daisy Bank, Station 3, Dive B (90D3B)

Delta Dive: 2132

Date: 9/28/90

Time: 1400-1512

Minimum Depth: 465 ft (142 m)

Maximum Depth: 610 ft (186 m)

Remarks: None

Estimated density (#/hectare) by total length

<u>Scientific Name</u>	<u>Total</u>	<u>0 dm</u>	<u>1 dm</u>	<u>2 dm</u>	<u>3 dm</u>	<u>4 dm</u>	<u>5 dm</u>	<u>≥ 5 dm</u>
NON-SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	55767.6	699.928672.6	26391.63.5	---	---	---	---	---
<u>Sebastes zacentrus</u>	6862.0	699.9	4409.1	1751.4	1.7	---	---	---
<u>Sebastes helvomaculatus</u>	510.9	5.2	196.0	306.2	3.5	---	---	---
<u>Sebastes elongatus</u>	64.7	1.7	5.2	43.7	14.0	---	---	---
<u>Icelinus sp. (?)</u>	19.2	---	5.2	14.0	---	---	---	---
<u>Ophiodon elongatus</u>	15.7	---	---	1.7	---	---	---	14.0
unknown mottled sculpin	10.5	---	10.5	---	---	---	---	---
<u>Glyptocephalus zachirus</u>	8.7	---	3.5	3.5	1.7	---	---	---
<u>Eptatretus sp.</u>	7.0	---	---	---	3.5	3.5	---	---
<u>Sebastes sp. (brown)</u>	7.0	---	---	1.7	5.2	---	---	---
unknown blenny-like fish	7.0	---	5.2	1.7	---	---	---	---
<u>Microstomus pacificus</u>	7.0	---	---	3.5	3.5	---	---	---
<u>Rathbunella sp.</u>	5.2	---	5.2	---	---	---	---	---
<u>Lyopsetta exilis</u>	5.2	---	5.2	---	---	---	---	---
<u>Hydrolagus colliei</u>	3.5	---	---	---	---	1.7	1.7	---
<u>Sebastes sp. (large)</u>	3.5	---	---	1.7	1.7	---	---	---
<u>Icelinus filamentosus</u>	3.5	---	---	3.5	---	---	---	---
<u>Raja binoculata</u>	1.7	---	---	---	---	---	---	1.7
<u>Raja rhina</u>	1.7	---	---	---	---	---	---	1.7
<u>Sebastes babcocki</u>	1.7	---	1.7	---	---	---	---	---
<u>Sebastes chlorostictus</u>	1.7	---	---	1.7	---	---	---	---
<u>Sebastes sp. (blotched)</u>	1.7	---	1.7	---	---	---	---	---
<u>Paricelius hopliticus</u>	1.7	---	1.7	---	---	---	---	---
<u>Agonus acipenserinus</u>	1.7	---	---	1.7	---	---	---	---
SCHOOLING FISHES:								
<u>Sebastes wilsoni</u>	1749.6	---	---	1749.6	---	---	---	---
unknown mottled poacher	1.7	---	1.7	---	---	---	---	---
ALL FISHES:								
Total density:	65072.2							
Diversity indices:	Richness (S) = 25	Evenness (J) = 0.14	Diversity (H') = 0.44					

INVERTEBRATES: species present

Allocentrotus fragilis

Crania californica

Lopholithodes foraminatus

Octopus dofleini

Octopus sp.

Ophiacantha sp.

Poraniopsis inflata

Stylasterias forreri

unknown barrel sponge

unknown foliose sponge

unknown shelf sponge

unknown vase sponge

unknown white fenestrated sponge

(Dive 90D3B continued)

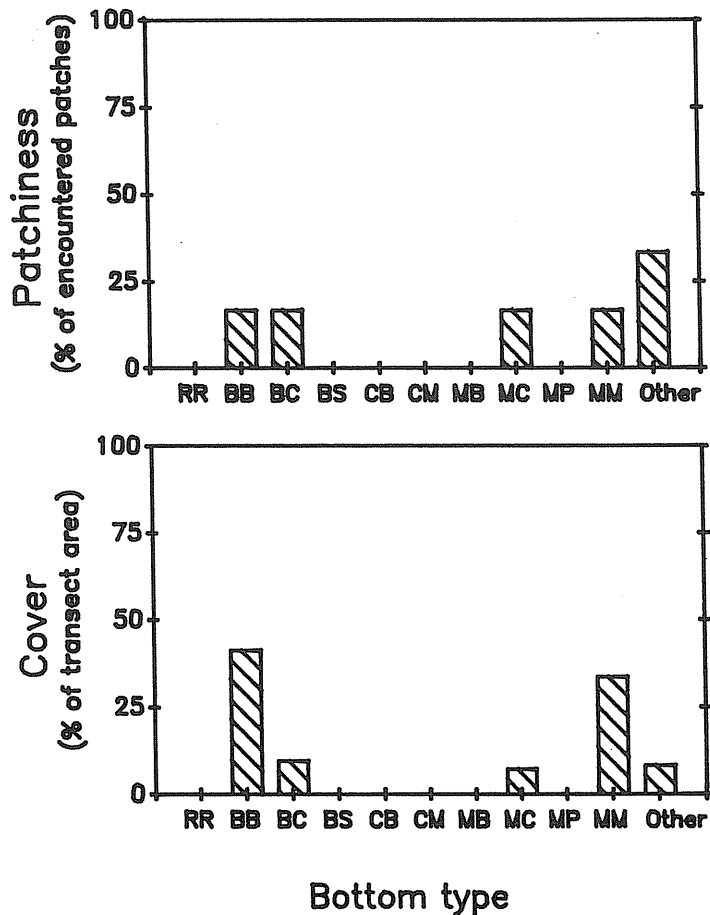
BOTTOM TYPE: (100% of videotape usable)

<u>Code</u>	<u>Description</u>	<u>% Cover</u>	<u>% Patchiness</u>
BB	Boulder	41.3	16.7
MM	Mud	33.6	16.7
BC	Boulder + Cobble	9.6	16.7
BM	Boulder + Mud	8.3	33.3
MC	Mud + Cobble	7.2	16.7

Richness (S) = 5

Patchiness: Evenness (J) = 0.97 Diversity (H') = 1.56

Cover: Evenness (J) = 0.77 Diversity (H') = 1.38



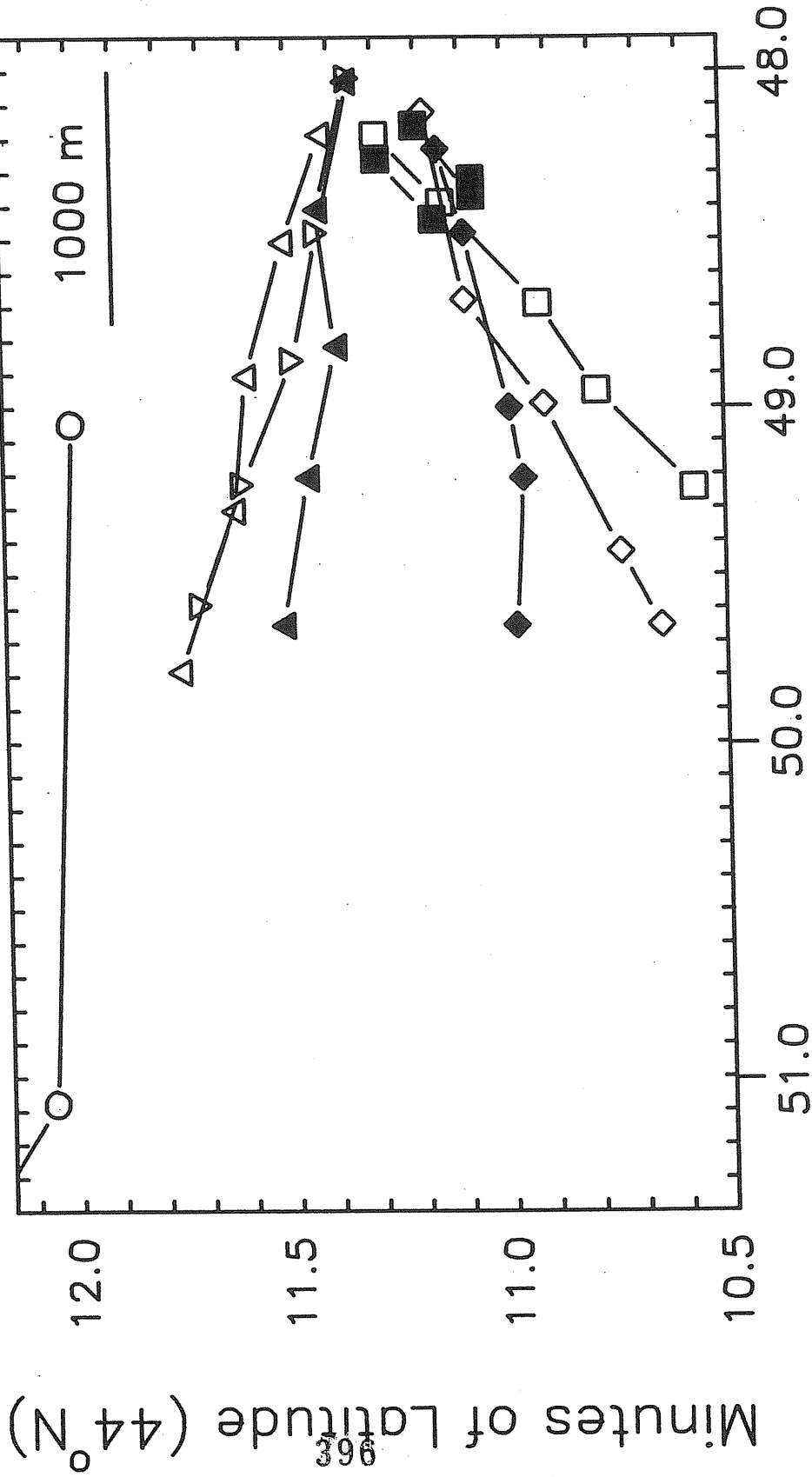
[BLANK PAGE]

APPENDIX 4

Maps of submersible transect paths at all stations and banks. Each point represents a location fix (see Chapter 2: General Methods). The 1987 transects at Heceta Bank represent some of our first exploratory dives (see Pearcy et al. 1989). Average headings by station were: Heceta Bank: (1) west, (2) south, (3) west, (4) southwest, (5) south, (6) west; Coquille Bank: (1) northeast, (2) northwest, (3) northeast, (4) none--zero visibility, (5) northwest, (6) northwest, (7) west, (8) northwest; Daisy Bank: (1) east, (2) northeast, (3) southeast.

Heceta Bank:
Station 1

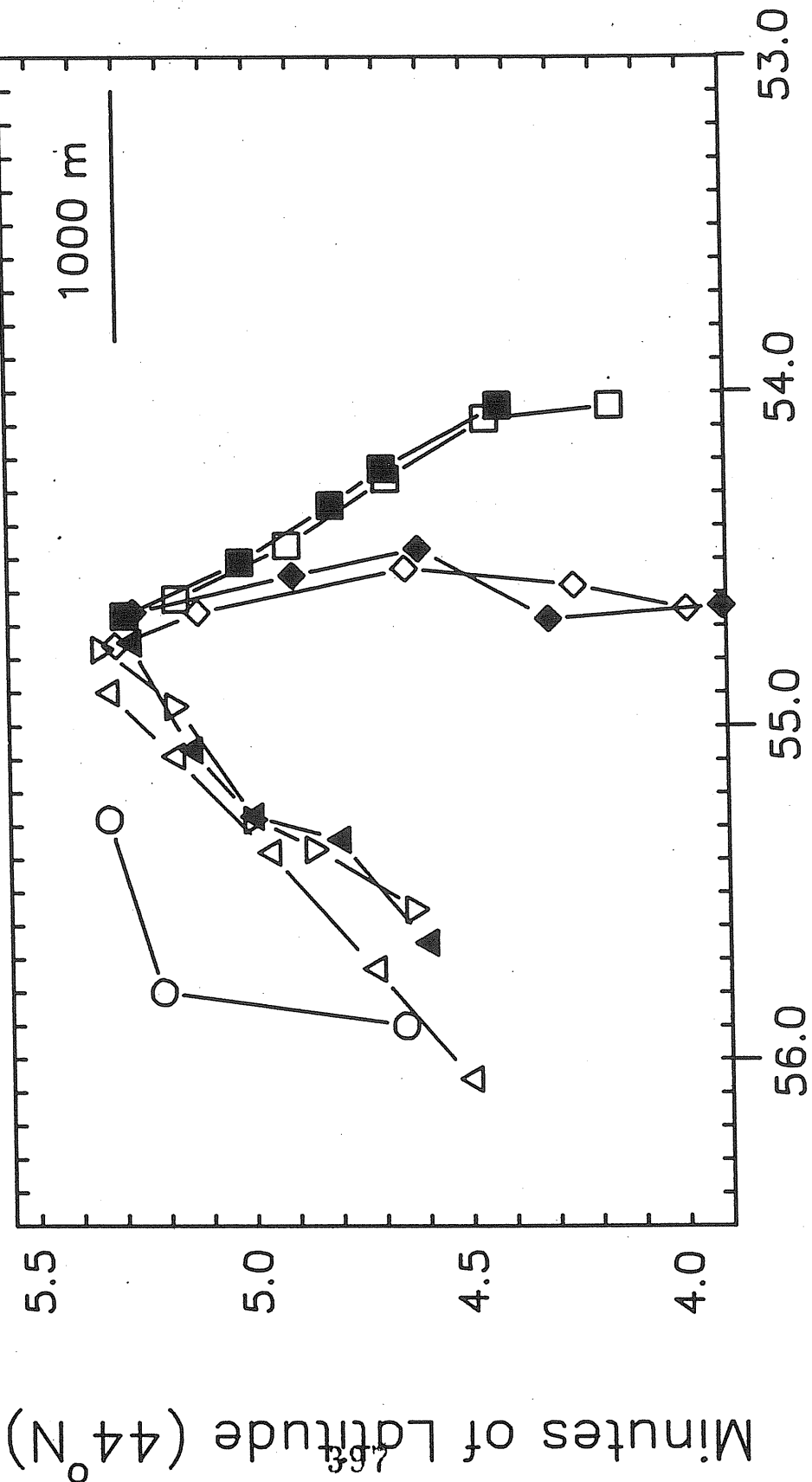
- 1987
- △—△, ▲—▲, ▽—▽ 1988
- , ■—■ 1989
- ◇—◇, ◆—◆ 1990



Minutes of Longitude (124°W)

Heceta Bank:
Station 2

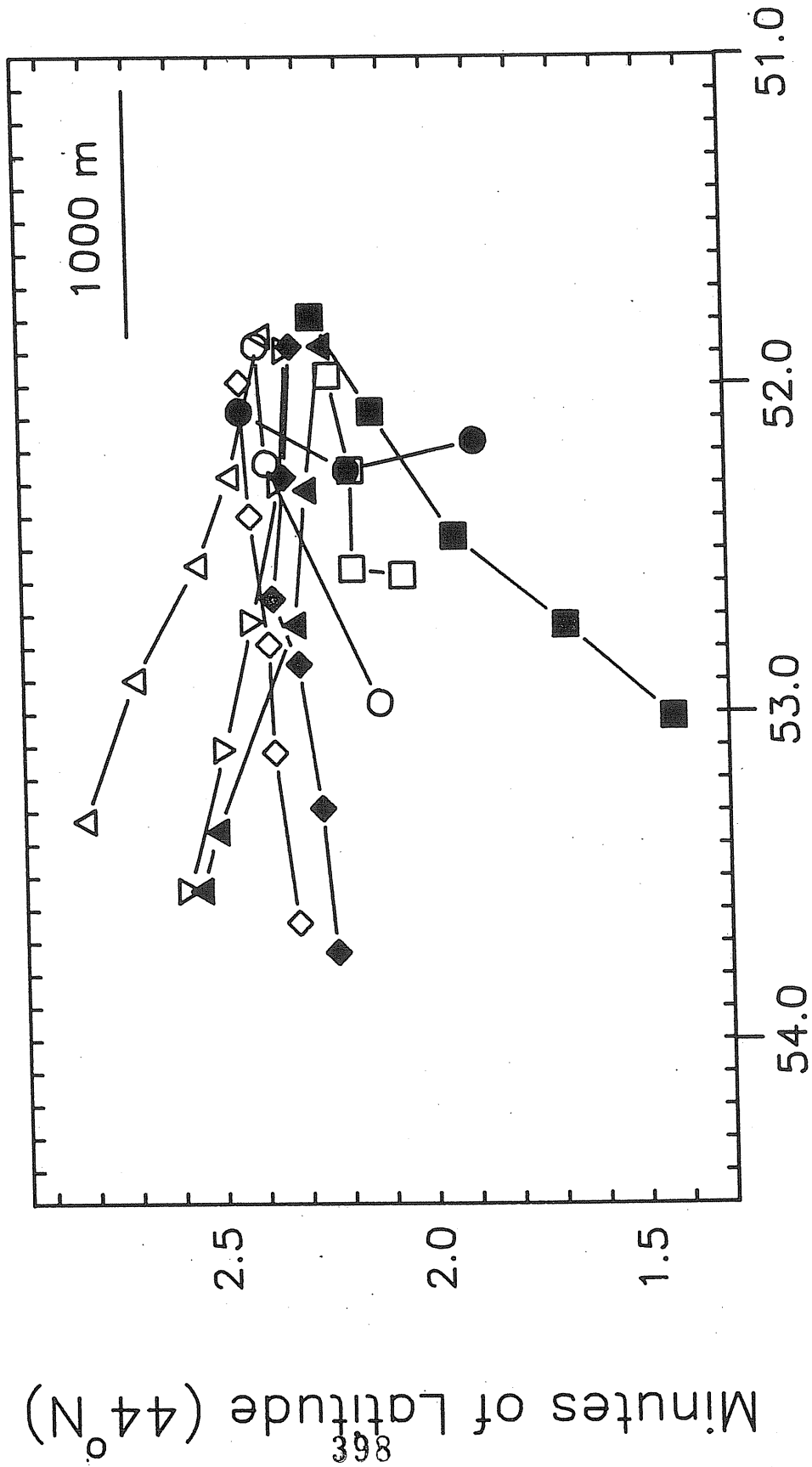
- 1987
- △—△, ▲—▲, ▽—▽ 1988
- , ■—■ 1989
- ◇—◇, ◆—◆ 1990



Minutes of Longitude (124°W)

Heceta Bank:
 Station 3

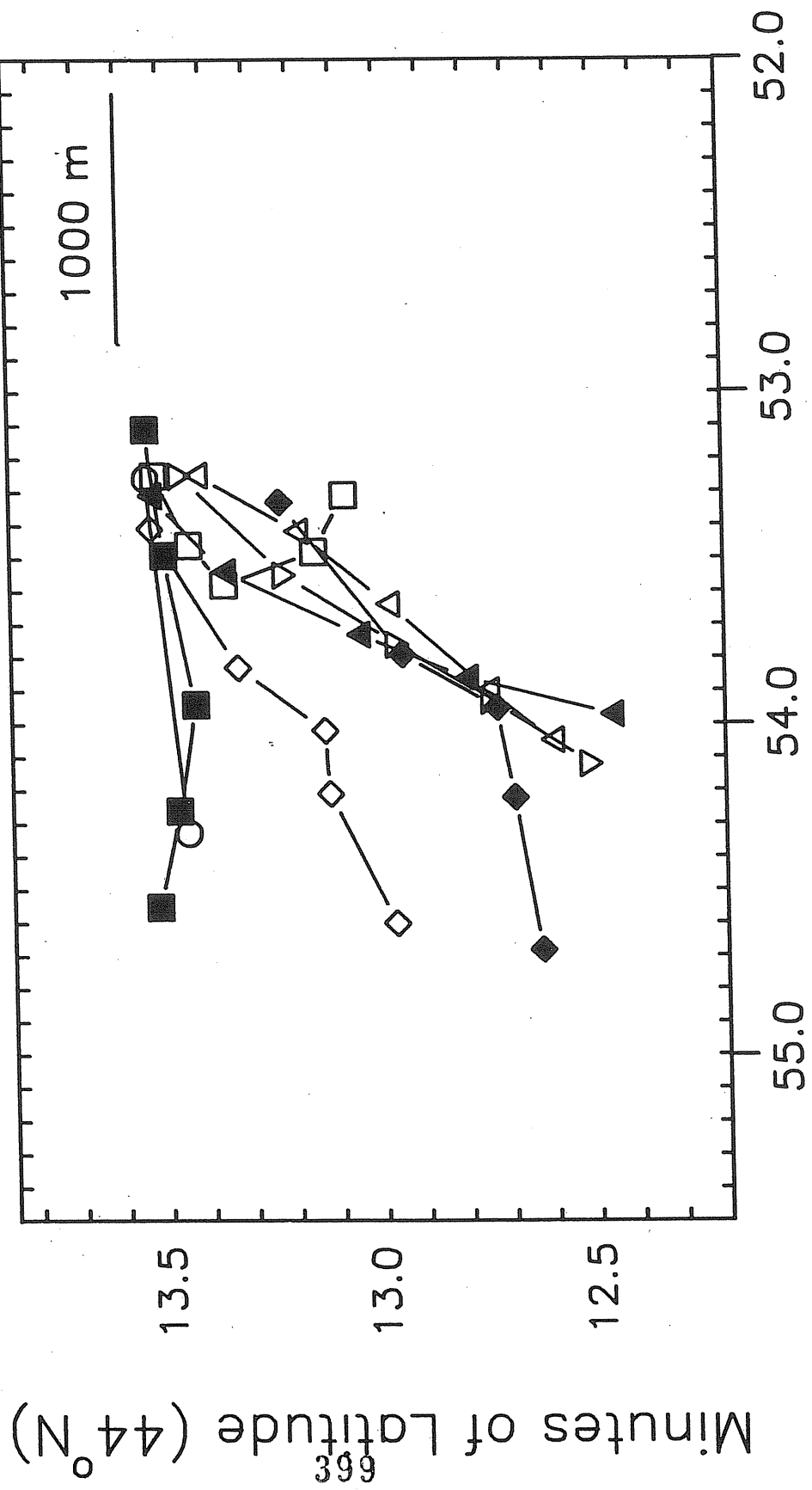
○—○, ●—● 1987
 △—△, ▲—▲, ▽—▽ 1988
 □—□, ■—■ 1989
 ◇—◇, ◆—◆ 1990



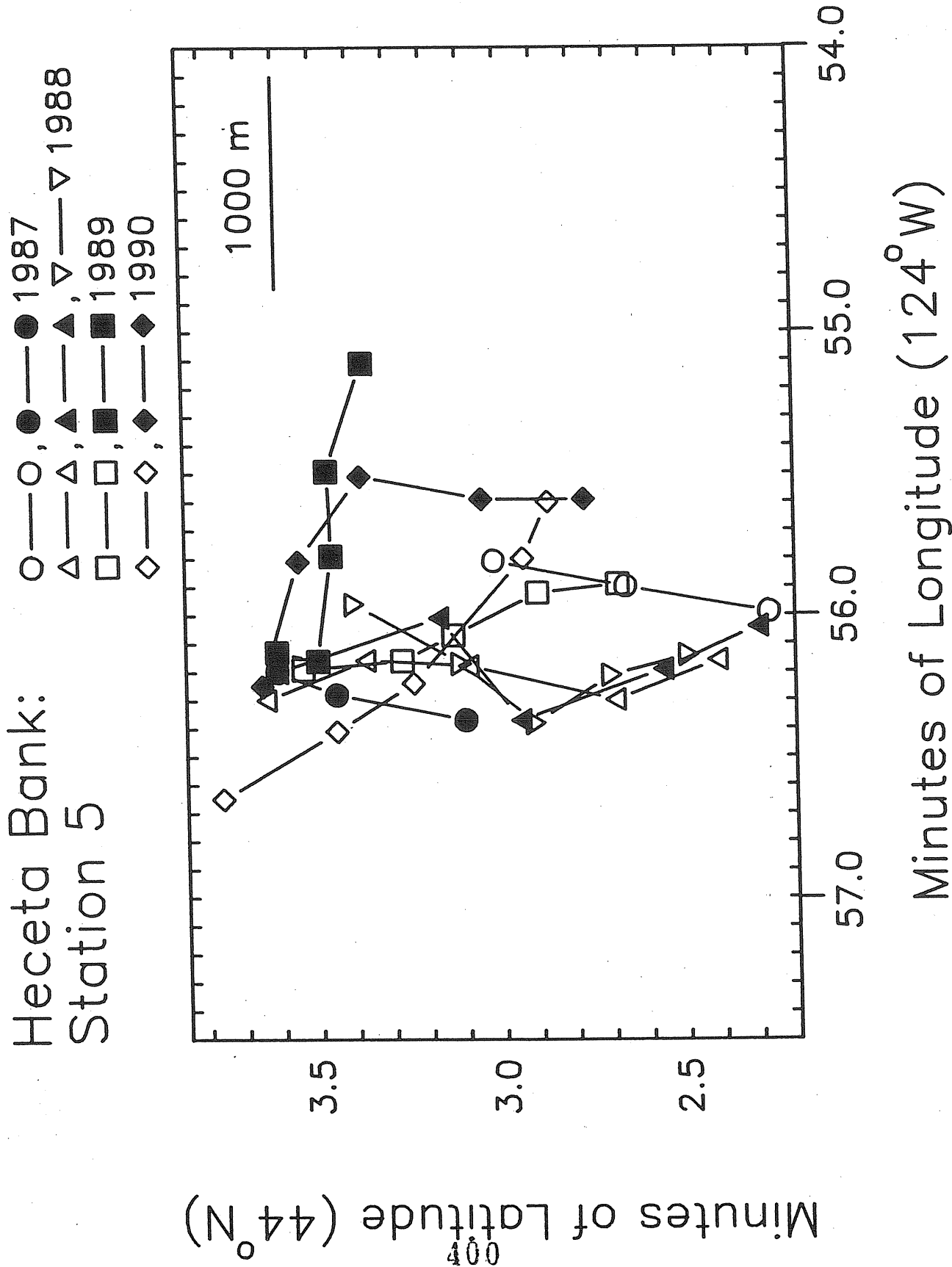
Minutes of Longitude (124°W)

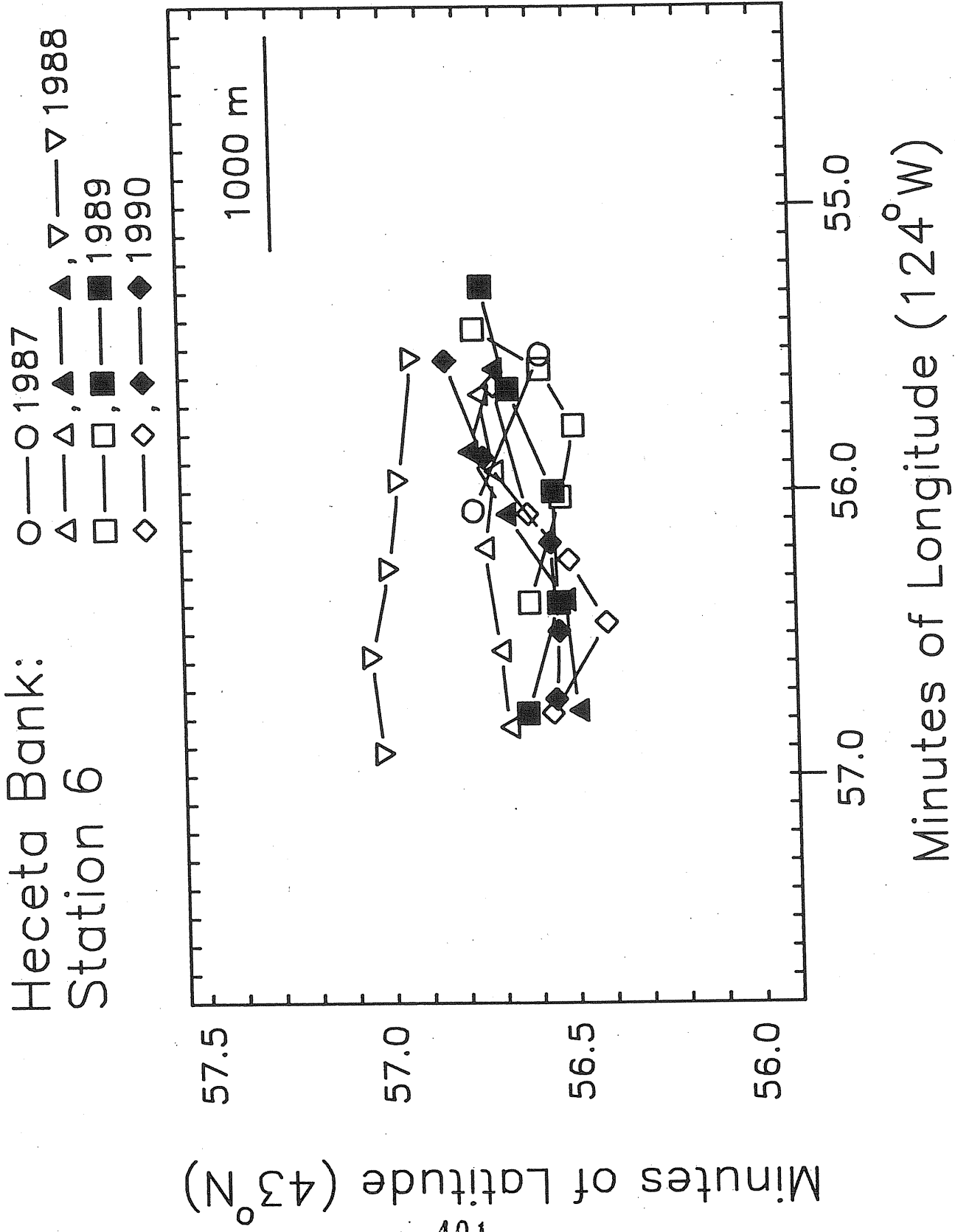
Heceta Bank:
Station 4

- — 1987
- △ — ▲ — ▴ — ▽ 1988
- — ■ — 1989
- ◇ — ◆ — 1990

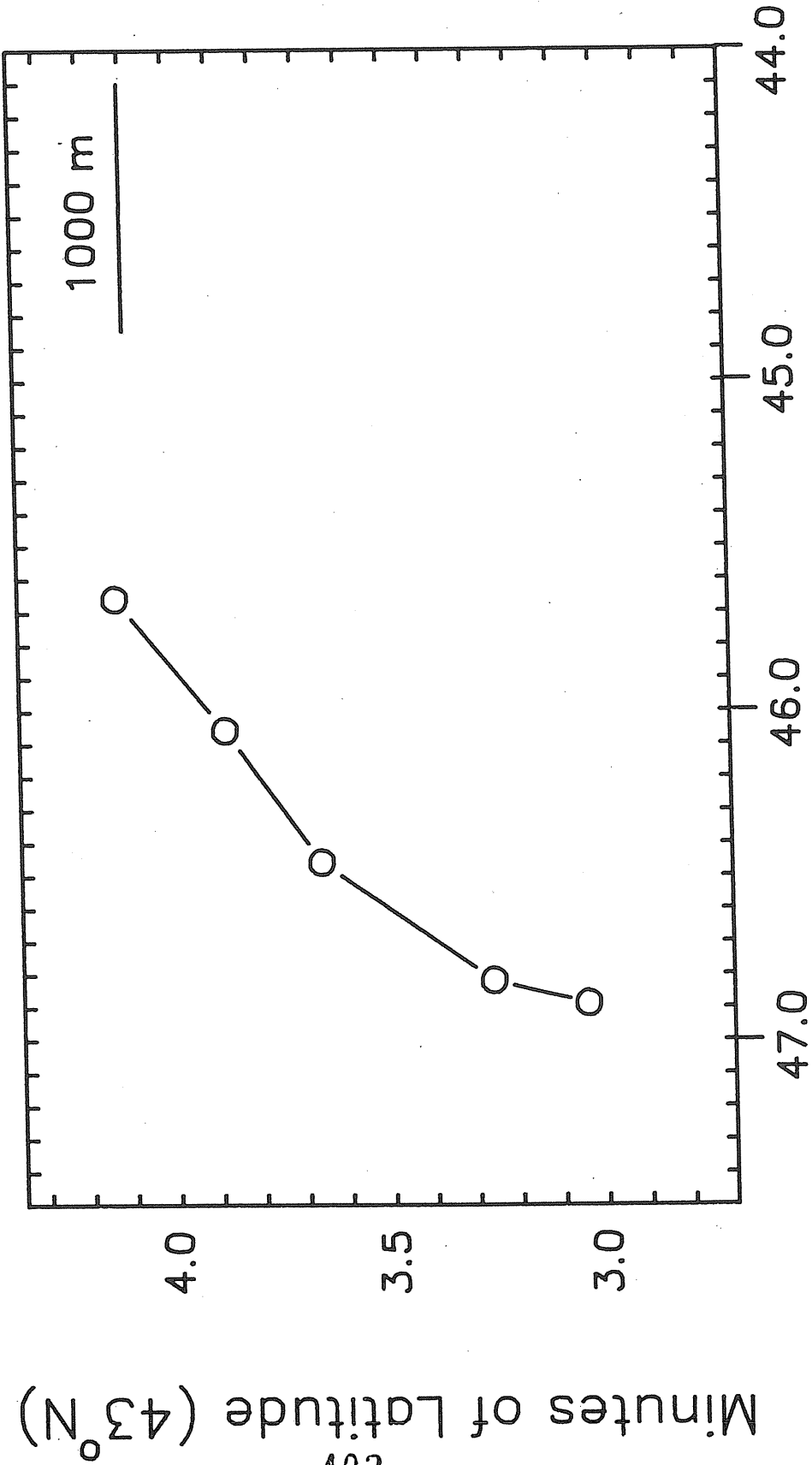


Minutes of Longitude (124°W)

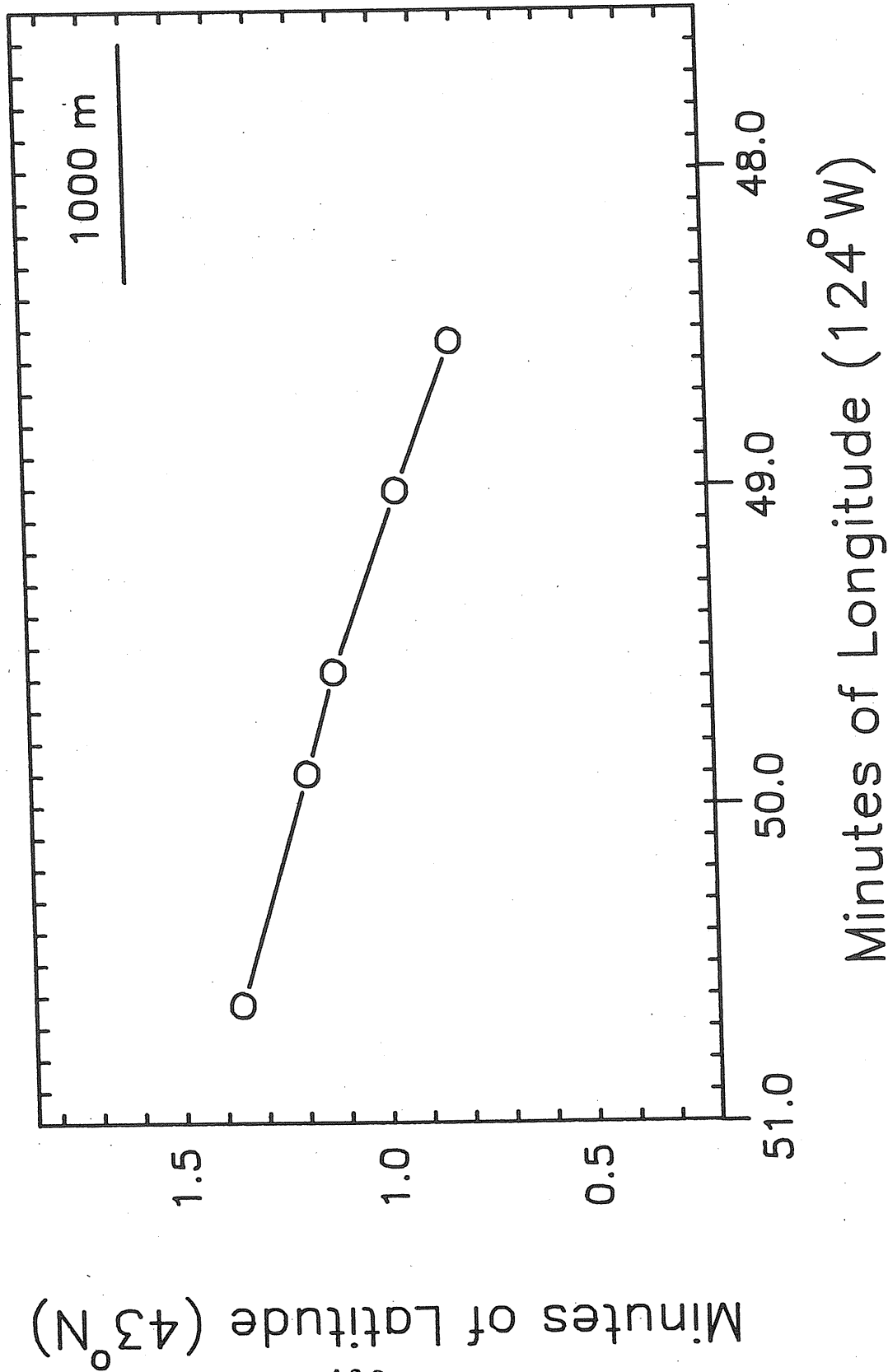




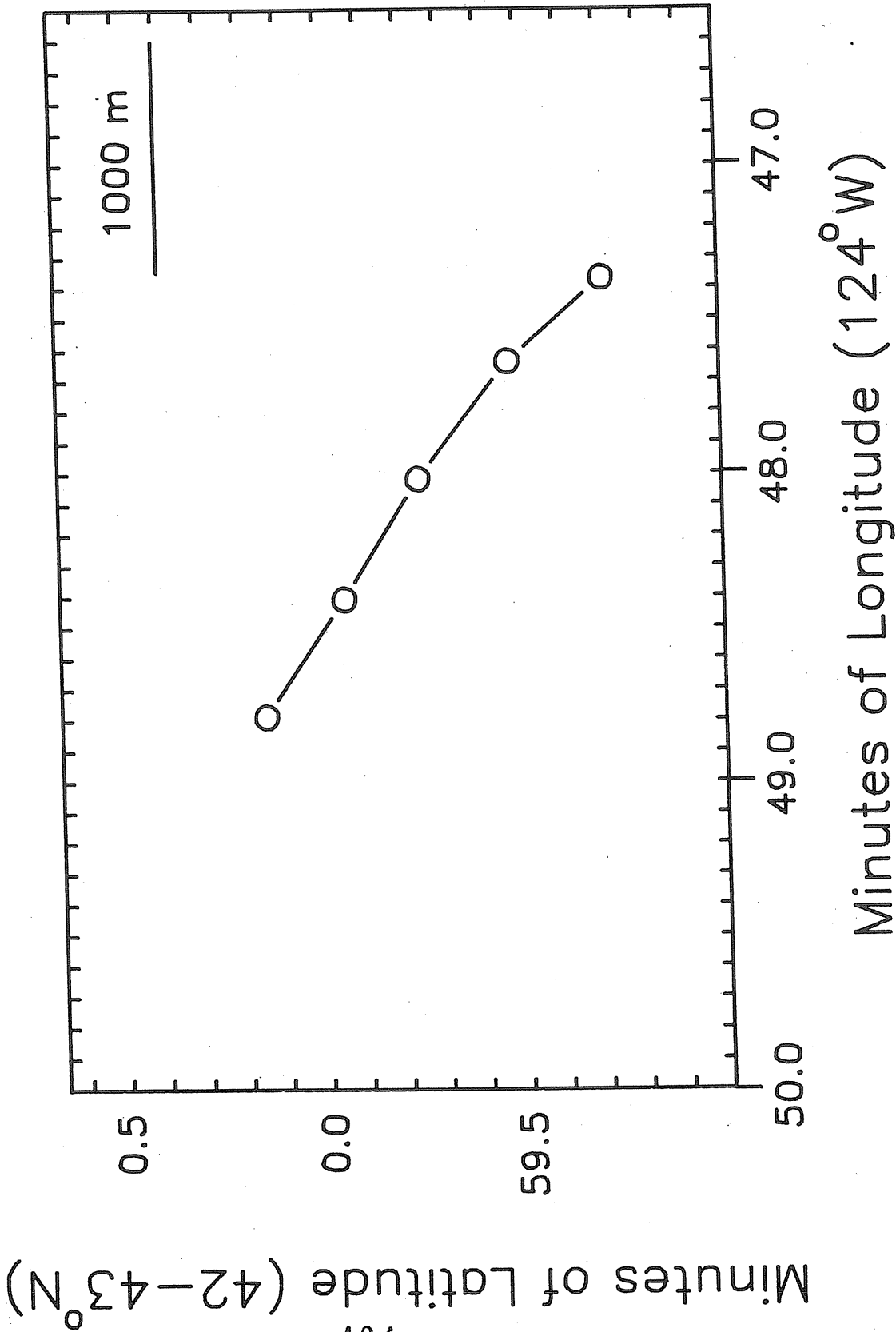
Coquille Bank: o—o Station 1
1990



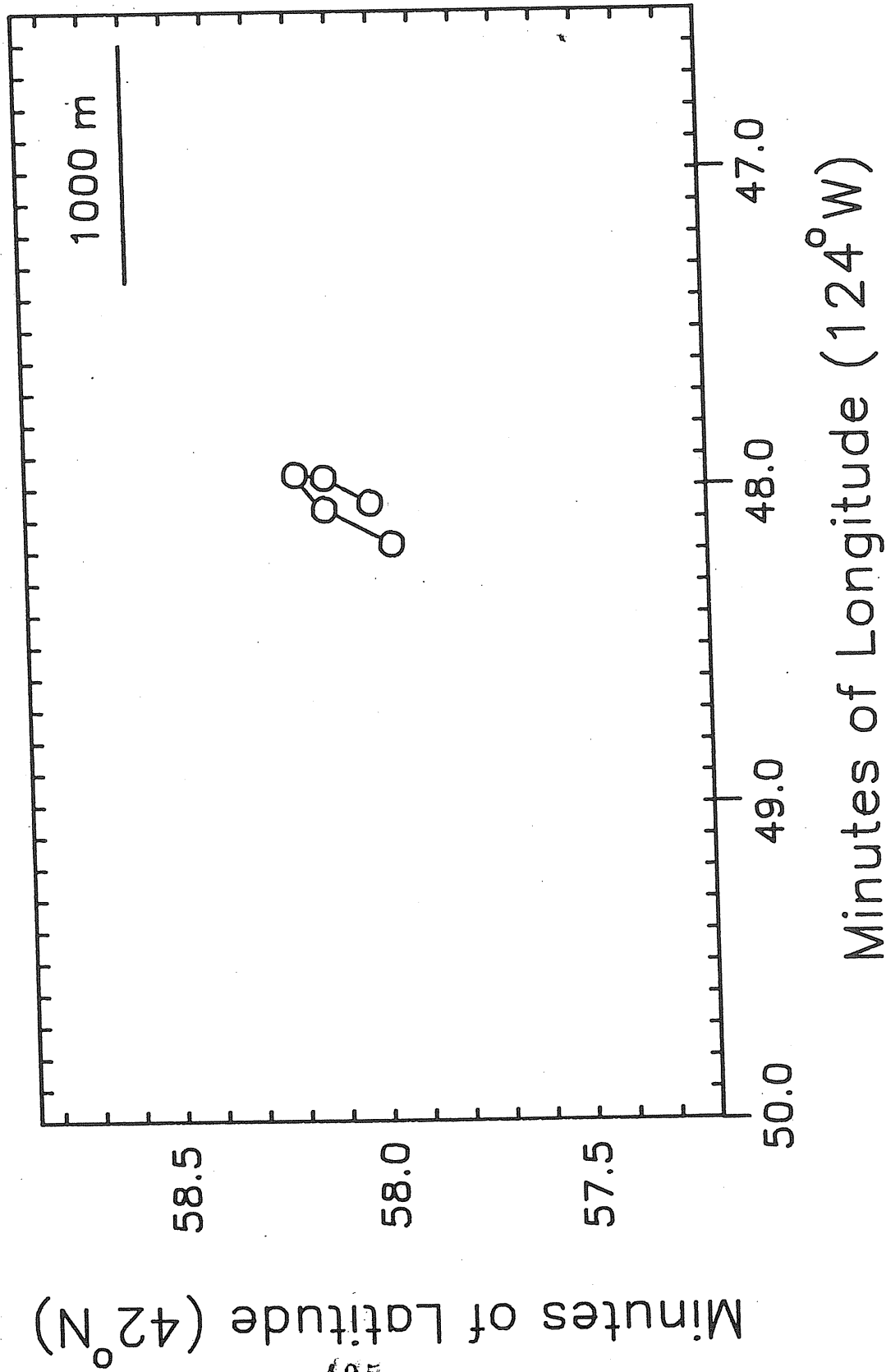
Coquille Bank: o—o Station 2
1990



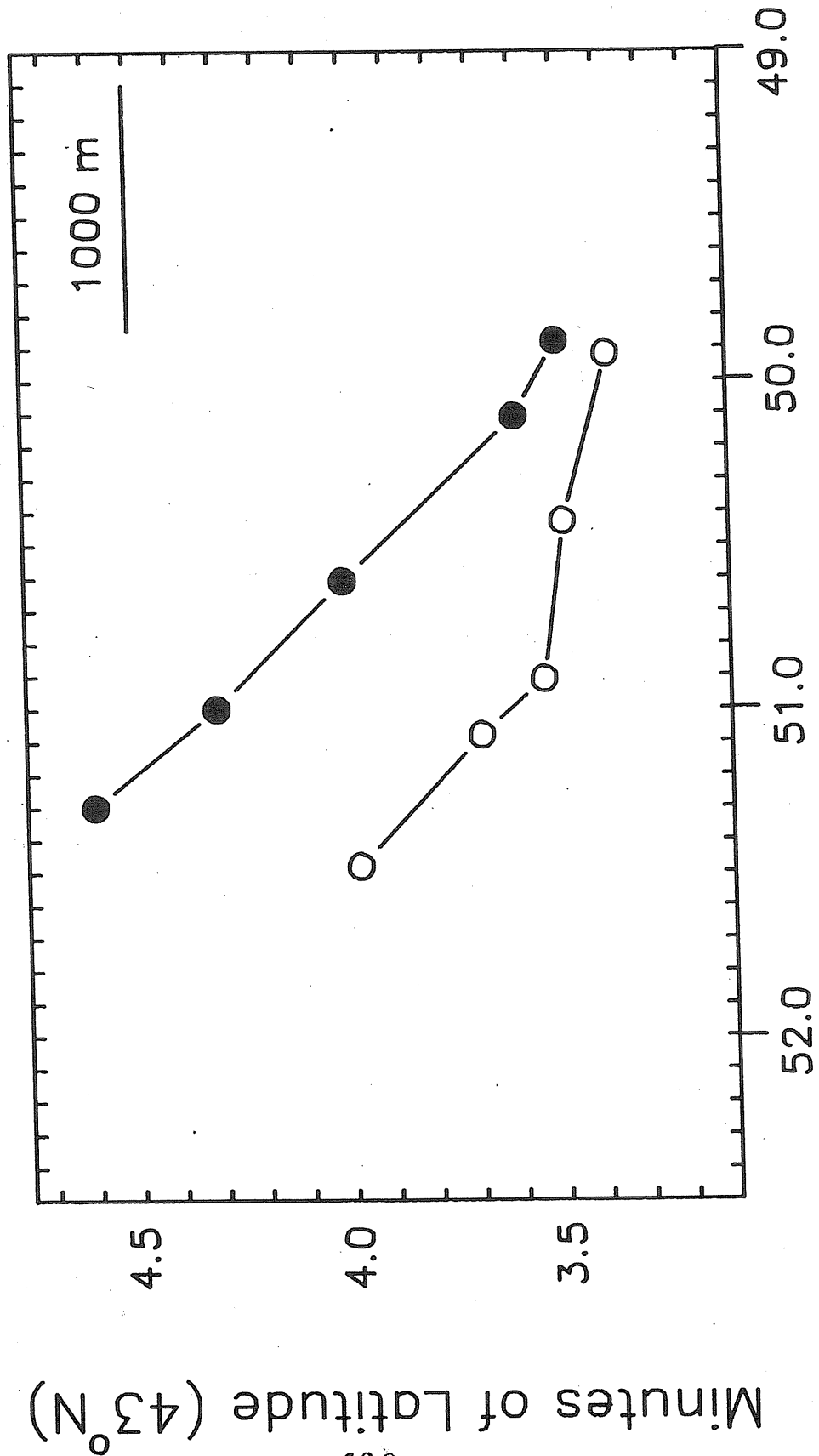
Coquille Bank: 0—0 Station 3
1990



Coquille Bank: O—O Station 4
1990



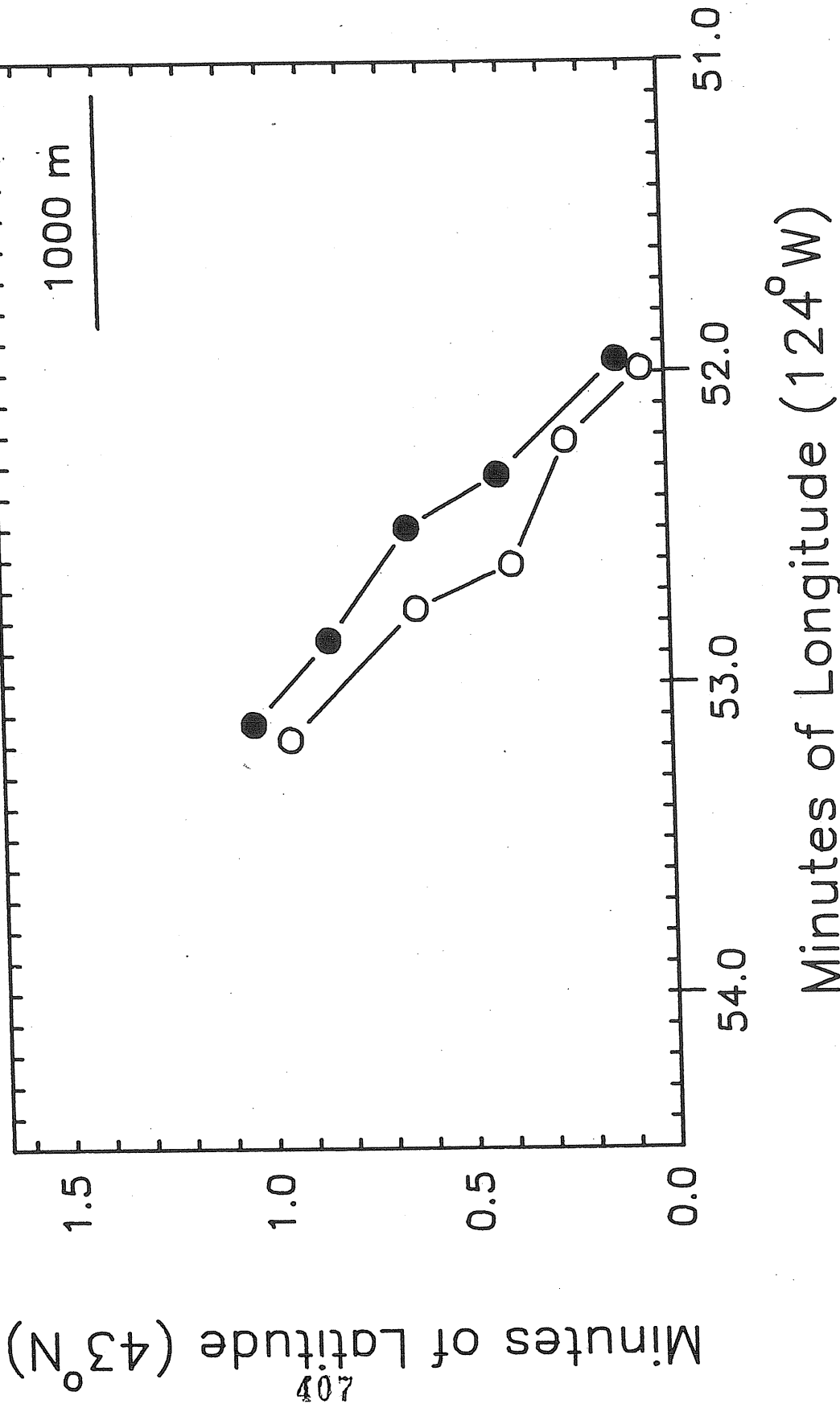
Coquille Bank: ○—○, ●—● Station 5



Minutes of Latitude (43°N)

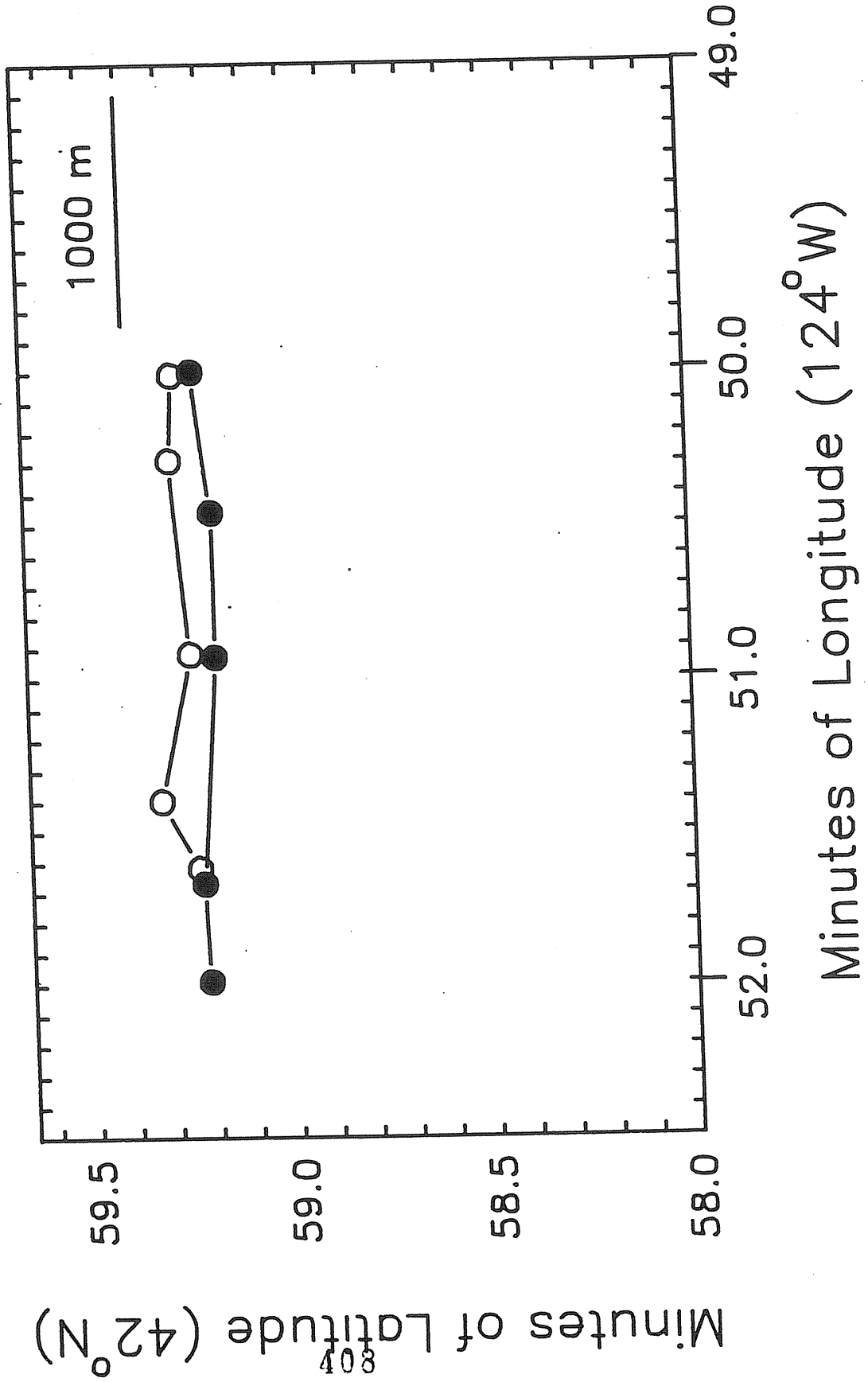
Minutes of Longitude (124°W)

Coquille Bank: ○—○, ●—● Station 6



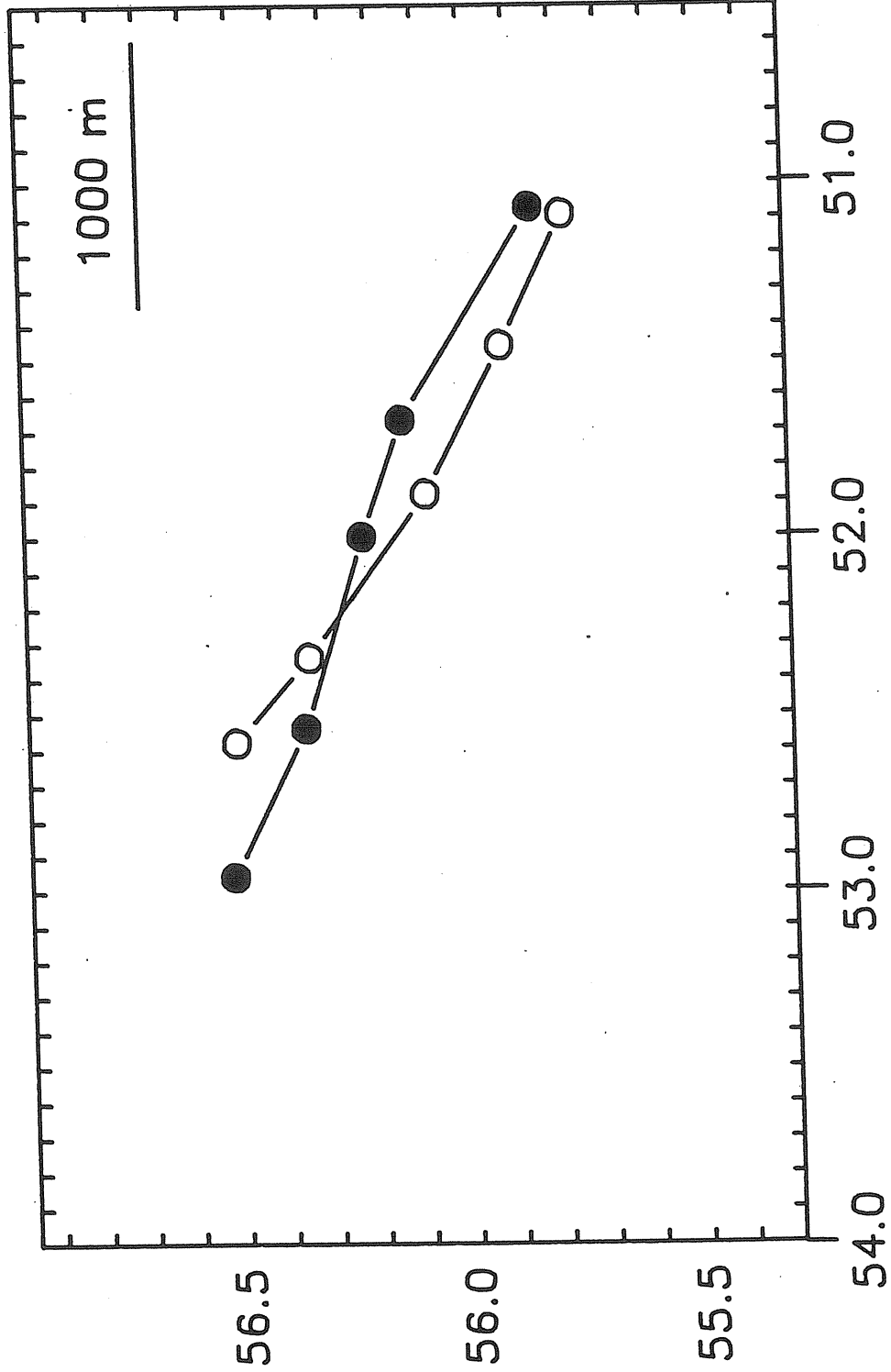
Coquille Bank: 1990

○—○, ●—● Station 7



Coquille Bank: o—o, ●—● Station 8

Minutes of Latitude (42°N)



Minutes of Longitude (124°W)

Daisy Bank:
1990

- , ● Station 1
- △—△, ▲ Station 2
- ◇—◇, ◆ Station 3

