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Occurrence of Striped Shrimp (*Pandalus montagui*) along
the west coast of Greenland from 1988 to 1996.

by

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Introduction

During the West Greenland trawl survey for Northern Shrimp (*Pandalus borealis*), minor quantities of Striped Shrimp (*Pandalus montagui*) have been registered, but no biomass index for this species has yet been established.

Reports from fishermen and logbook data indicate an increased percentage of *P. montagui* in the catches of the Greenland fishery targeting *P. borealis*, and concerns have been made about the potential influence of this species on the economic important *P. borealis*.

This paper presents a biomass index of *P. montagui* in Davis Strait 1988-1996 based on data collected during the Greenlandic survey (Folmer, Carlsson, Hvingel and Kanneworff, 1996).

Materials and Methods

Biomass indices was calculated according to the methods described for *P. borealis* in Folmer *et al.* (1996a and 1996b). Besides using the same areal stratification an additional shallow water stratum, "F", was added, covering West Greenland coastal areas south of 69° N in the depth range from 40 to 150 meters (Fig. 1).

Results and Discussion

Distribution in relation to depth

The table at the top of next page shows the percentage of the biomass index in relation to depth. *P. montagui* is predominantly found from 40-300 meters depth and is mostly registered in shallower water than *P. borealis*. Approximately 50% of the biomass of *P. borealis* in the West Greenland survey is found in the depth range from 300-400 meters.

Biomass index in relation to depth

Depth / Years	1988	1989	1990	1991	1992	1993	1994	1995	1996
40-150 m	0 %	0 %	0 %	12.7 %	0 %	2.1 %	66.3 %	0.5 %	1.8 %
150-200 m	88.9 %	47.1 %	29.3 %	13.1 %	6.9 %	0 %	21.7 %	85.6 %	42.7 %
200-300 m	10.4 %	52.1 %	70.7 %	67.8 %	92.1 %	54.1 %	6.4 %	9 %	55.2 %
300-400 m	0 %	0.1 %	0 %	6.4 %	0.9 %	1.3 %	1.5 %	4.9 %	0.3 %
400-600 m	0.7 %	0.1 %	0 %	0 %	0 %	42.4 %	4.1 %	0 %	0 %

Geographic distribution

Figure 1. shows the stratification scheme and the distribution of stations where *P. montagui* were caught. Most of the stations of bigger catches are found in the souther part of the area and in areas close to the coast.

Biomass index

The tables below shows the biomass estimates of *P. montagui* and the Number of stations where *P. montagui* were caught.

Indices indicate a period of low abundance from 1988 to 1991. Then the index increases dramatically from about 100 tons to more than 15000 tons in 1995. Most biomass is found in the southern strata i.e. W4 -W7 and S1-S2, which represents strata south of 67° N.

This increase in abundance is also reflected in the number of stations at which *P. montagui* was caught. In 1988 *P. montagui* was found in less than 4% of the survey hauls. In 1996 in more than 20 %.

This increase in the calculated abundance of *P. montagui* may, however, be slightly biased. Fewer stations were allocated to shallow water from 1988 to 1992, reducing the numbers of station with *P. montagui* and further, more stations were taken in the southern area from 1992 to 1996 than in previous years.

However, these changes in the survey are not believed alone to account for the substantial increase in the calculated biomass index for *P. montagui*.

Biomass index (tons)

Areas / Years	1988	1989	1990	1991	1992	1993	1994	1995	1996
N1 - N9	0	0	0	0	0	0	0	0	1
D1 - D9	-	-	-	8	42	0	18	0	3
W1-W2-W3-C	5	21	0	0	8	28	61	630	281
W4 - W7	34	83	3	72	1110	1531	227	14459	2511
S1 - S2	-	-	-	0	0	170	1631	8	0
F	-	-	0	11	0	34	567	63	52
Total (tons)	39	104	3	91	1160	1763	2504	15160	2848

Number of stations where *P. montagui* were caught

Stations / Years	1988	1989	1990	1991	1992	1993	1994	1995	1996
<i>P. montagui</i>	5	14	2	22	16	19	21	34	39
Total	139	189	240	193	176	181	194	220	194
% of stationer	3.6 %	7.4 %	0.8 %	11.4 %	9.1 %	10.5 %	10.8 %	15.5 %	20.1 %

Conclusion

The biomass estimates for Striped Shrimps (*Pandalus montagui*) and the number of stations where they are found indicate an increase in population size between 1988 and 1996. Most of the biomass is found in shallower water than Northern Shrimp (*P. borealis*).

The total estimated biomass in 1996 is only around 1% of the size of the *P. borealis* population. The population of *P. montagui* is therefore not likely to have a big impact on the population of *P. borealis*. However, the rapid rate of increase may indicate a possible future changes in the balance between the two species.

References

- O. Folmer, Carlsson, D. M., C. Hvingel and P. Kanneworff, (1996a): Offshore trawl survey for shrimp (*Pandalus borealis*) in NAFO Subareas 0 and 1, in 1996. NAFO SCR Doc. 96/114, Serial No. N2811.
- O. Folmer, Carlsson, D. M., C. Hvingel and P. Kanneworff, (1996b): Stratified random survey for shrimp (*Pandalus borealis*) in Disko Bay and Vaigat, inshore West Greenland 1996. NAFO SCR Doc. 96/112, Serial No. N2809.

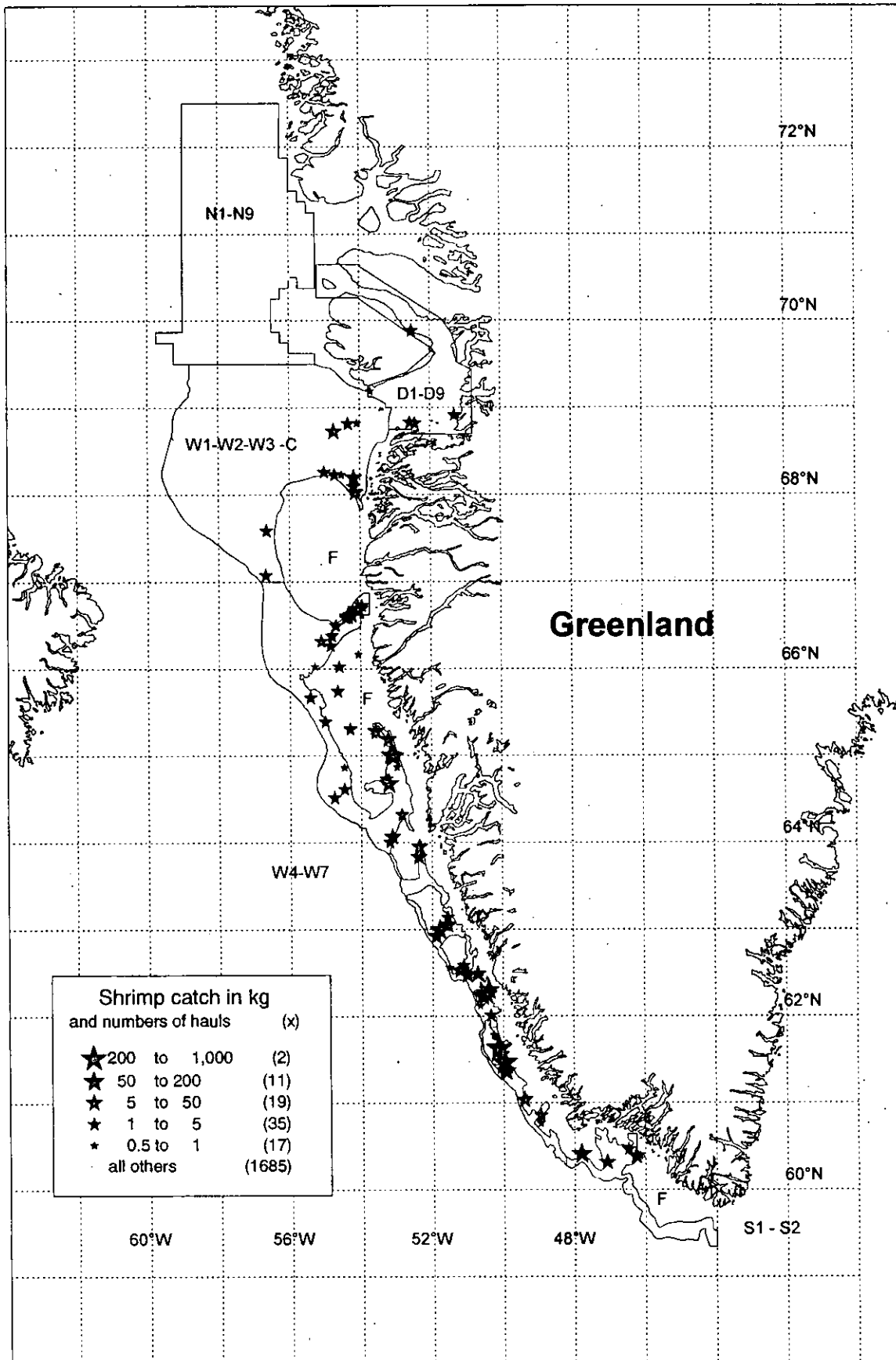


Fig. 1. Catch sizes of *P. montagui* in the West Greenland trawl survey.