## **CONTENTS**

ZUSAMMENFASSUNG	3
SUMMARY	5
INTRODUCTION	7
CHANGE IS THE ONLY CONSTANT	7
RESPONSE TO TEMPORARILY ADVERSE ENVIRONMENTAL CONDITIONS	7
Migration	ε
Polymorphism and polyphenism	8
Dormancy	8
DORMANCY IN THE COPEPODA	9
CALANOID COPEPOD RESTING EGGS IN MARINE AND BRACKISH WATER ENVIRONMENTS	10
CALANOID COPEPOD RESTING EGGS IN THE GERMAN BIGHT?	13
CALANOID COPEPOD RESTING EGGS IN THE KARA SEA?	14
Objectives	17
STUDY AREA	18
GERMAN BIGHT	18
Kara Sea	21
MATERIALS AND METHODS	23
GERMAN BIGHT: SEASONAL CYCLE OF HATCHING AND INTER-SPECIFIC VARIABILITY	23
Statistical analysis	25
Sediment composition	25
GERMAN BIGHT: FACTORS CONTROLLING THE TERMINATION OF THE DORMANT PHASE	26
Temperature	26
Photoperiod	26
Oxygen concentration	26
GERMAN BIGHT: FIELD EXPERIMENTS	27
KARA SEA	31
RESULTS	35
GERMAN BIGHT: SEASONAL CYCLE OF HATCHING AND INTER-SPECIFIC VARIABILITY	35
Species and stage composition	35
Spatial and seasonal variability	40
Hatching patterns	45
Maximum abundance and recruitment potential	49

GERMAN BIGHT: FACTORS CONTROLLING THE TERMINATION OF THE DORMANT PHASE	49
Temperature	49
Photoperiod	51
Oxygen concentration	52
GERMAN BIGHT: FIELD EXPERIMENTS	54
KARA SEA	55
Hatching experiments	55
Direct egg counts	57
DISCUSSION	58
METHODOLOGY	58
GERMAN BIGHT: SEASONAL CYCLE OF HATCHING AND INTER-SPECIFIC VARIABILITY	59
Temora longicornis	60
Centropages hamatus and inter-specific differences	61
Centropages typicus	64
Acartia spp.	64
Labidocera wollastoni and Anomalocera patersoni	65
The unidentified species	65
Pooled N1	66
Maximum abundance and recruitment potential	67
GERMAN BIGHT: FACTORS CONTROLLING THE TERMINATION OF THE DORMANT PHASE	70
Temperature	70
Photoperiod	73
Oxygen concentration	73
GERMAN BIGHT: FIELD EXPERIMENTS	75
KARA SEA	76
Limnocalanus macrurus	77
Drepanopus bungei	86
Calanus glacialis	87
Microcalanus pygmaeus	87
Pseudocalanus spp.	88
Less frequent species	89
CONCLUSIONS	91
REFERENCES	93
ACKNOWLEDGEMENTS	108