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NEOMYSIS MERCEDIS *ALIENACANTHOMYSIS MACROPSIS* *HANSENULUS TREBAX*

Kendra L. Daly and David M. Damkaer

Neomysis mercedis *Alienacanthomysis macropsis*

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Hansenulus trebax, is

et al., *et al.,*

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Neomysis mercedis *Alienacanthomysis macropsis,*

Stage	Characterized by

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RESULTS

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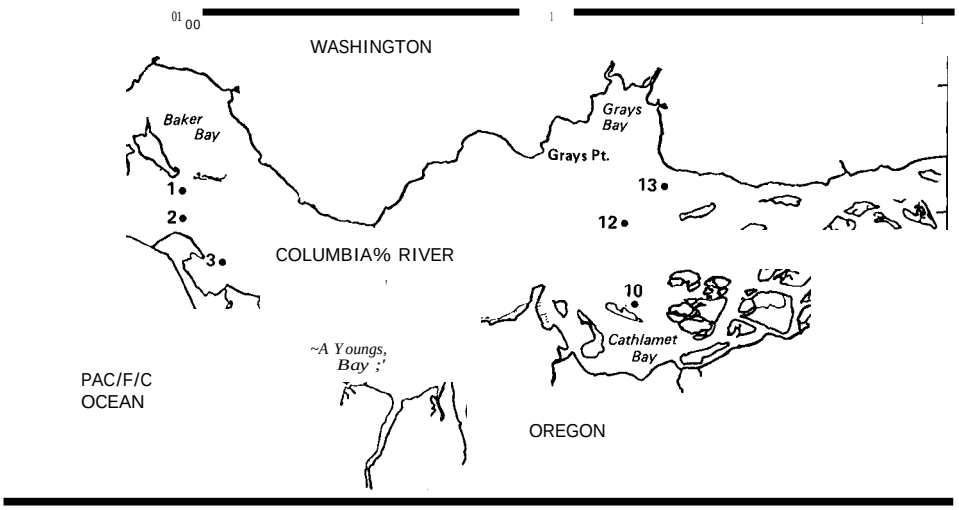


Fig. 1. Station locations in the Columbia River estuary.

The average riverflow is about 7,280 m^3 s-', with a range from 4,200–17,000 m^3 s^{-1}. The maximum salt intrusion is generally between 16 and 24 km from the mouth, but during extreme conditions of low riverflow and neap tides, the salt intrusion may penetrate as far as 50 km upriver. During high riverflow and ebb tides the estuary may be essentially fresh water (Simenstad *et al.,* 1984).

Thirteen sampling stations throughout the estuary extended from River Kilometer 8, near the mouth of the Columbia River, up to River Kilometer 37 (Fig. 1). Ten stations were located along the main navigational channel at 2-mile (3.2-km) intervals. Stations 1 and 6 were at the mouth and in the north channel, and Station 10 was in Cathlamet Bay. The first nine stations were in the estuarine channel region of the estuary which is delineated by brackish water and strong tidal and river currents. The entrapment or null zone is apparent as a turbidity maximum and is near the upriver boundary of the upstream bottom current where there is no net flow. High densities of zooplankton are often associated with this zone. During the high-flow season, its average position is near Station 4, and during low flow, it is between Stations 5 and 8.

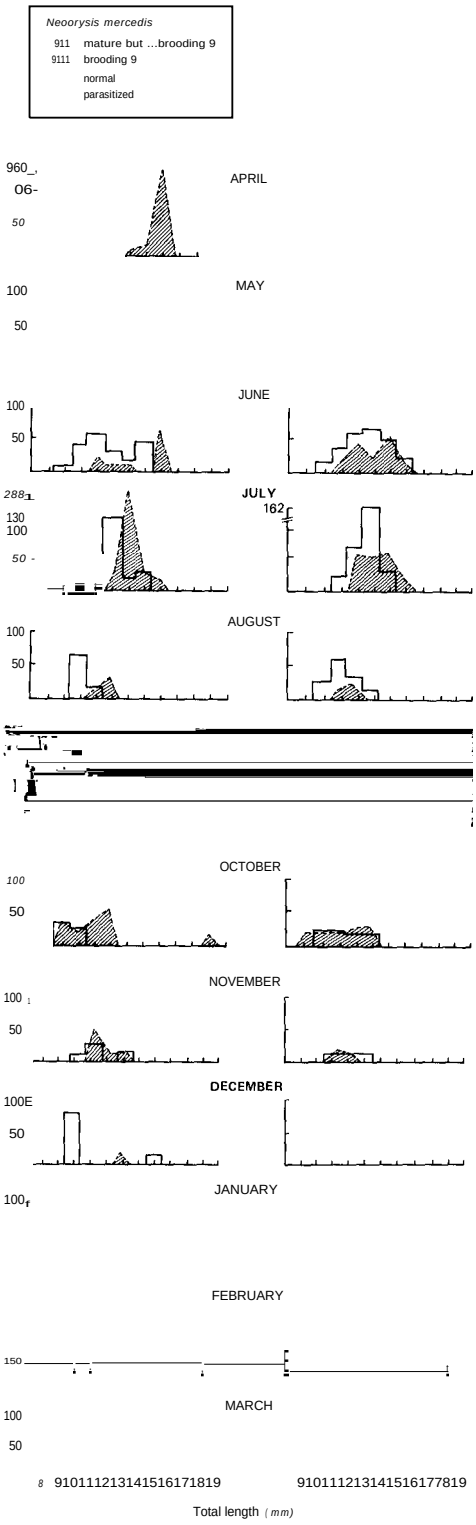
Stations 11, 12, and 13 were in a mixed zone where fluvial processes dominate during high riverflow and estuarine mixing processes dominate during low riverflow. Cathlamet Bay (Station 10), a large protected bay off the main river channel, is characterized by low velocity currents and shallow channels and marshes. This bay is at or just above the edge of the saline intrusion except during low-flow/ neap-tide conditions.

Sampling Methods

Samples were taken semimonthly from April 1980 to April 1981 during 27 cruises. Zooplankton were collected in daylight at depths ranging from 9–25 m. A side-by-side double-net epibenthic sled was towed for 5 min in an oblique haul from the surface to the bottom and back to the surface again. Net mesh-sizes were 253 μm and 335 μm; each net had a round mouth area of 0.2 m^2. Flowmeters in the net mouths estimated the water filtered. Samples were preserved in buffered 4% formaldehyde. At each station, temperature and salinity measurements were obtained at 1-m intervals, using a portable induction salinometer.

Data Analysis

A Folsom plankton splitter was used to obtain a subsample of at least 100 mysids of the dominant species. Each individual mysid was classified according to sexual maturity stage (Table 1), measured, and examined for parasites. Length is given as the distance between the anterior margin of the carapace and the apex of the telson, measured to the nearest millimeter. Brood size for nonparasitized females was determined by counting mysid eggs from only the marsupia of brooding females that retained egg sacs totally intact, to minimize erroneous counts due to damaged or lost broods. Brood size was also



Neomysis mercedis;

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Neomysis mercedis.

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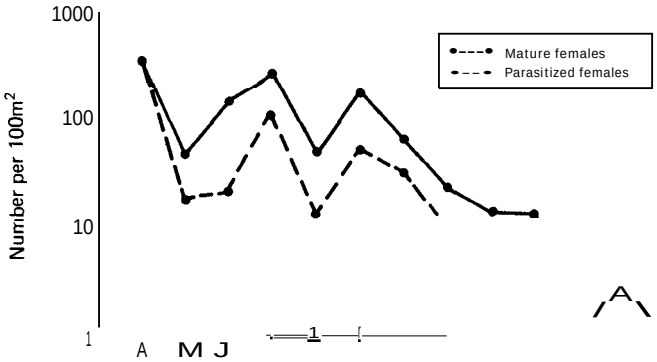
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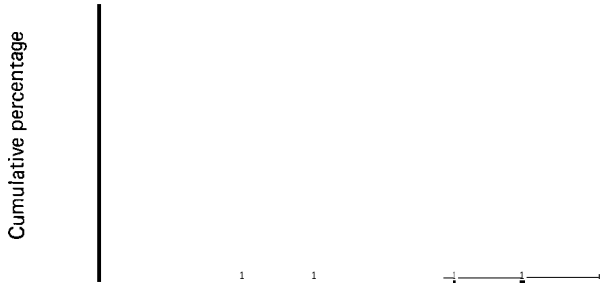

Neomysis mercedis

N. mercedis

H. trebax.

N. mercedis

N. mercedis.

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Alienacanthomysis macropsis

Life History and Abundance. — N. mercedis, Alienacanthomysis macropsis

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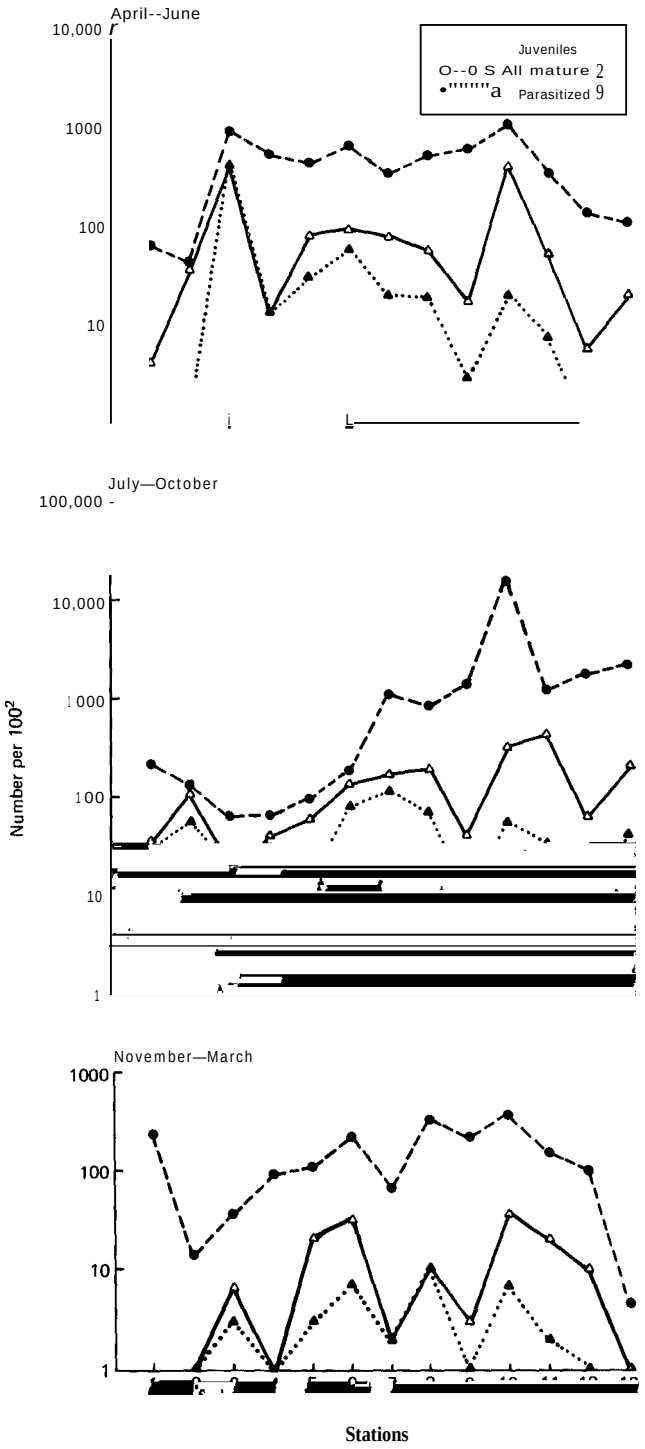
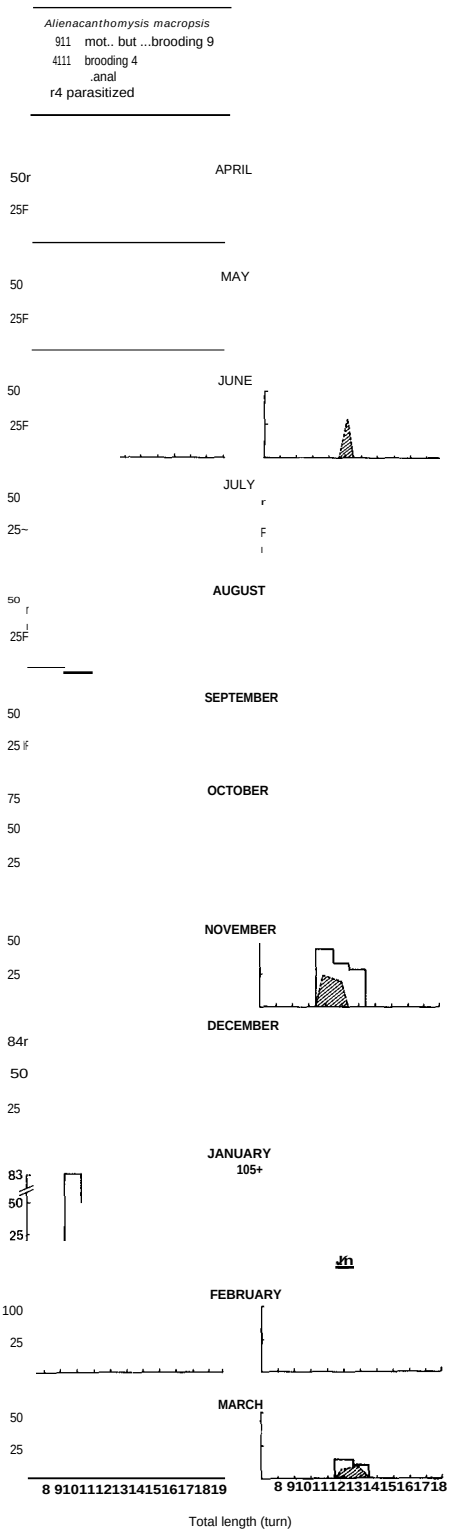
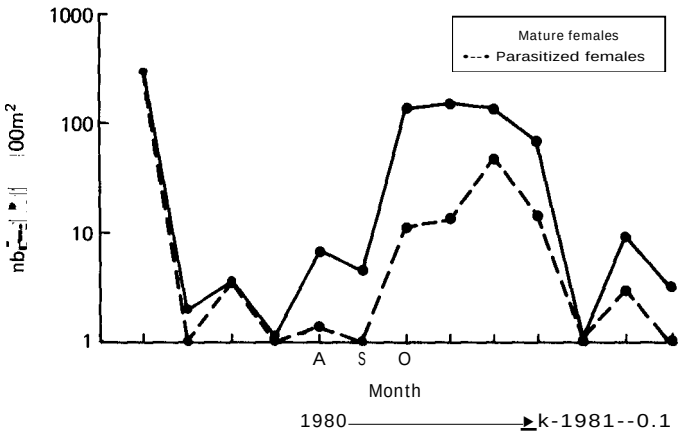


Fig. 5. Distributions of mean abundance of juvenile, all mature female, parasitized female, and brooding female *Neomysis mercedis* for three hydrologic seasons in the Columbia River estuary.



Alienacanthomysis macropsis;



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N. mercedis. *A. macropsis*

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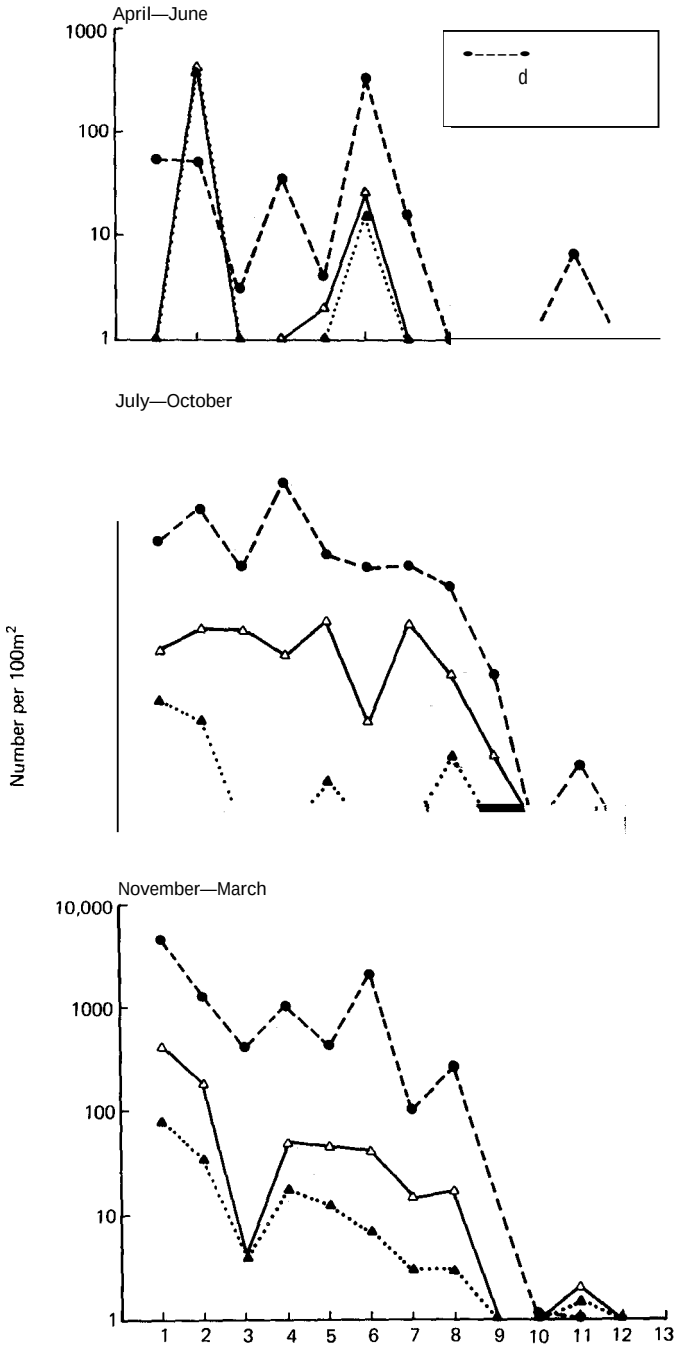

Fig. 9. Distributions of mean abundance of juvenile, all mature female, parasitized female, and brooding female *Alienacanthomysis macropsis* for three hydrologic seasons in the Columbia River estuary.

Neomysis mercedis

Hansenulus trebax

N. mercedis,

N. mercedis

N. mercedis

H. trebax

N. mercedis

N. mercedis

N. mercedis,

N. mercedis

H. trebax

Archaeomysis grebnitzkii *Neomysis kadiakensis,*

H. trebax

N. mercedis *A. macropsis.*

H. trebax

N. mercedis

A. macropsis,

N. mercedis *A. macropsis*

Neomysis mercedis

A. macropsis

Hansenulus trebax

Neomysis awatschensis

et al. *N. mercedis*

N. mercedis

et al. *Archaeomysis grebnitzkii*

et al.

Neomysis mercedis

Neomysis mercedis *(Cancer magister)* *(Crangon franciscorum)* *et al.*,

, 1974.
Neomysis americana
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