

**OPOSSUM SHRIMP**  
**(*MYSIS OCULATA RELICTA* :LOVÉN)**  
**DISCOVERED IN STORMY LAKE, WISCONSIN**

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Opossum shrimp (*Mysis oculata relictata* Lovén) were found in Stormy Lake during a study of food habits of the coho salmon (*Oncorhynchus kisutch*) (McKnight and Serns, 1974). Since 1934, *Mysis* had been known only in three inland Wisconsin lakes: Big Green (Green Lake County), Trout (Vilas County) and Black Oak (Vilas County), according to Juday and Birge, 1927, and Couey, 1934. There is also an unconfirmed report of *Mysis* in Lake Geneva in Walworth County (Pennak; 1953, Pennak, personal communication).

Stormy Lake in northeastern Vilas County (T 41 N, R 9E; S 1, 11 and 12) is a soft-water, landlocked, ice-block type of lake. The lake's maximum depth is 19.2 m; the median depth is 5.8 m; the volume is  $2.09 \times 10^{10}$  l, and the surface 211.2 ha. The methyl purple alkalinity is 15.0 mg/l. Midsummer dissolved oxygen gradually declines as depths increase over 13.7 m; while 9.1 to 13.7 m depths have cool (10.6-19.4 C) water with some dissolved oxygen (3.7-8.9 mg/l); at 14.3 m and deeper the water is anoxic. The Lake's bottoms are predominantly sand, gravel, and rubble in shallow zones with mainly muck in deeper waters. Aquatic vegetation is sparse, but *Nuphar variegatum*, *Potamogeton Robbinsii*, *Sparganium*, *Typha*, *Eleocharis palustris*, and *Drepanocladus* are present (McKnight, unpublished data).

Stomachs from Stormy Lake coho salmon captured by nets or electro-fishing gear in the fall of 1969 and the summer and winter of 1970, contain *Mysis*. Individual coho contained remains from as many as 98 *Mysis* organisms.

Stormy Lake is considerably shallower than the other Wisconsin lakes with *Mysis*. Maximum depths for Big Green, Trout and Black Oak Lakes are 69.8, 35.1 and 25.9 m respectively. With thousands of years of geo-isolation and limited oxygen in the hypolimnion, the Stormy Lake *Mysis* may be a unique strain. A strain with tolerance to low oxygen concentrations could be an important consideration to fisheries personnel considering transplanting this excellent fish

food to other small to medium lakes with marginal oxygen conditions.

#### BIBLIOGRAPHY

Couey, Faye M. 1934. Fish food studies of a number of northeastern Wisconsin lakes. *Trans. Wis. Acad. Sci. Arts, Lett.* 29: 131-172.

Juday, Chancey, and Edward A. Birge. 1927. *Pontoporeia* and *Mysis* in Wisconsin lakes. *Ecology* 7: 445-452.

McKnight, Terrence C., and Steven L. Serns. 1974. Food habits of coho salmon (*Onchorynchus kisutch*) in an inland Wisconsin lake. *Trans. Amer. Fish. Soc.* 103: 126-130.

Pennak, Robert W. 1953. *Fresh-water Invertebrates of the United States*. Ronald Press, New York. 769 pp.