decreasing water temperature. However, observations have determined that gonadal development also occurs in the spring (Gutsell 1930; Sastry 1966; Kirby-Smith 1970; Spitsbergen 1979) (Figure 5.3).

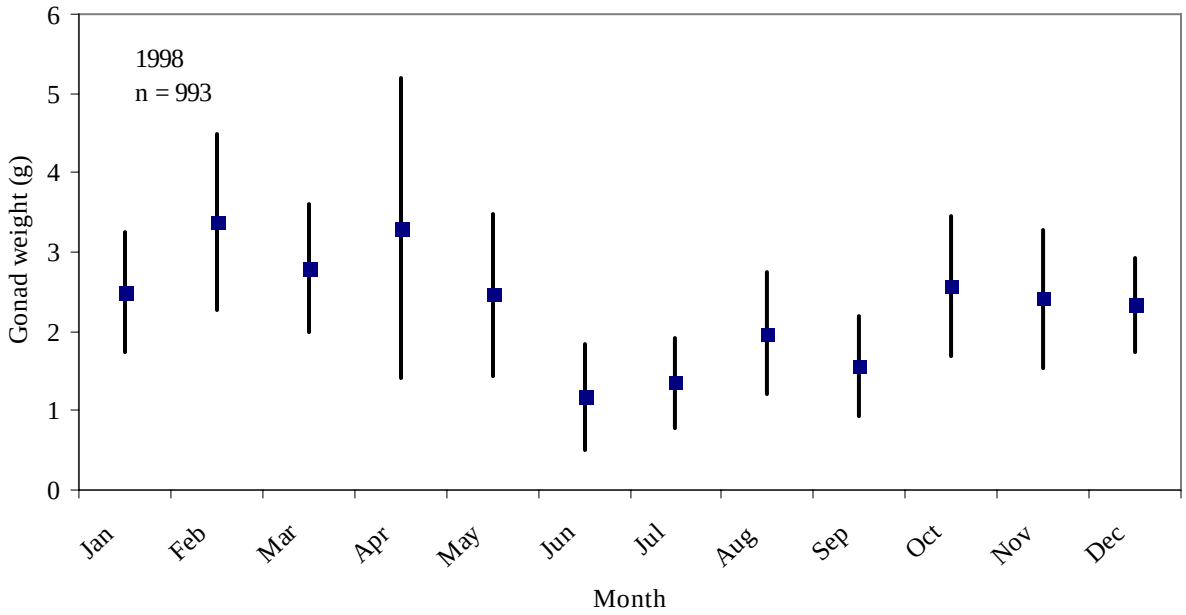

Figure 5.3. Average monthly bay scallop gonad weight (g)(wet) in 1998 with one standard deviation from the mean. DMF biological sampling.

Fertilization occurs in the water column and fertilized eggs settle to the bottom (Gutsell 1930; Sastry 1965) (Figure 5.4). Bay scallops have a multitude of free-swimming larval stages before developing into a juvenile. This section will only discuss two generalized larval stages that undergo many changes during growth and development. It takes approximately one to two days for the fertilized eggs to develop into free-swimming trochophore larvae. The trochophore larvae stage develops into the veliger larvae stage quickly where the first appearance of a shell occurs. The veliger stage is usually reached within 2-3 days after initial fertilization (Gutsell 1930; Sastry 1965). The veliger stage lasts approximately ten days during which development of most of the internal organs occurs, the foot becomes fully developed, and gills are present. Once the foot has developed, the behavior of the larvae begins to change (Figure 5.4). The veliger larvae alternately swim and rest on the bottom. The foot has a gland that secretes the byssus, or thread, needed for the attachment period in their development. Total time between egg fertilization and settlement is about 14-20 days (Gutsell 1930; Sastry 1965; Fay 1983).