

Summer 2003

Tara Duffy

University of Dayton

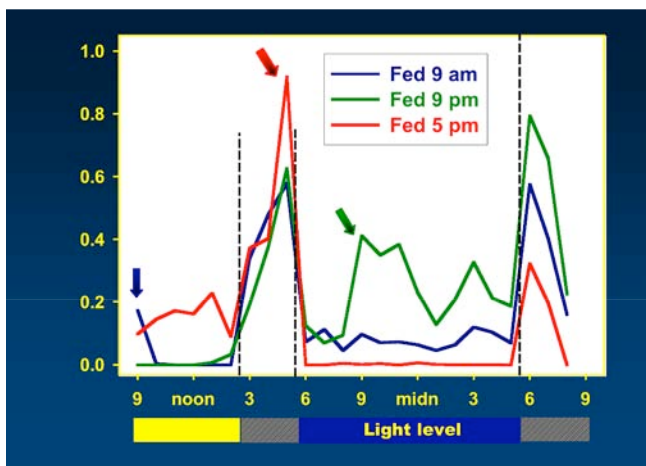
Project: Activity patterns of juvenile northern rock sole

Advisor: Tom Hurst

Juvenile flatfish use burial in the sediment and cryptic coloration as means of reducing vulnerability to predation. However, habitat selection and prey searching require movement exposing them to predators. Activity at night may reduce the risk of predation but result in less efficient foraging. As a result, the overall level of activity and timing of activity undertaken by juvenile flatfish represents a balance between the need to acquire food and avoid predators. Intern, Tara Duffy examined the effect of feeding history on the activity patterns of juvenile northern rock sole.



Feeding history has a significant effect on the level of and timing of daily activity in juvenile northern rock sole. The lines represent mean hourly activity of fish fed at different times as indicated by arrows, 9 a.m. (blue), 5 p.m. (red) and 9 p.m. (green). Observations were made in a 2.5 m tank backlit with infra-red illumination, allowing continuous monitoring of activity. In all cases, peak activity levels were observed under the intermediate light levels of dusk and dawn. Feeding resulted in a brief period of significantly increased activity. This was generally followed by an extended period of minimal activity, except among night-feeding fish where activity persisted. The extended activity of night-feeding fish may reflect a reduced feeding efficiency, hence fish requiring a longer time to reach satiation. Activity in light conditions was exclusively saltatory movement in contact with the sediment surface. At night, however,



water column and surface swimming accounted for about half of total activity, independent of feeding time. Future work will examine the effectiveness of water column swimming in habitat choice and the predation consequences of this activity.