

"I captured feeding American shad in the ocean at bottom temps of 9.4-13.2°C. They are most frequently caught in the ocean at between 7°C and 13°C. Peaks of upstream migration are at 10-15°C. Temperatures are likely higher in the rivers than on oceanic feeding grounds."

Shad appear willing to take flies at higher temperatures in the river than they would normally in the ocean. Whether this difference is circumstantial or definitive is an open question.

Empty Stomachs?

The deductive reasoning most often applied by anglers as to whether shad are willing to feed in the river is that shad stomachs and digestive tracks are almost always empty, although just last year I had an upriver shad defecate in the net. Dr. Jill Leonard, a postdoctoral researcher at the USDA/ARS Thad Cochran National Warmwater Aquaculture Center in Mississippi, has done some stomach sampling of shad along the East Coast, and had some interesting insights on shad feeding.

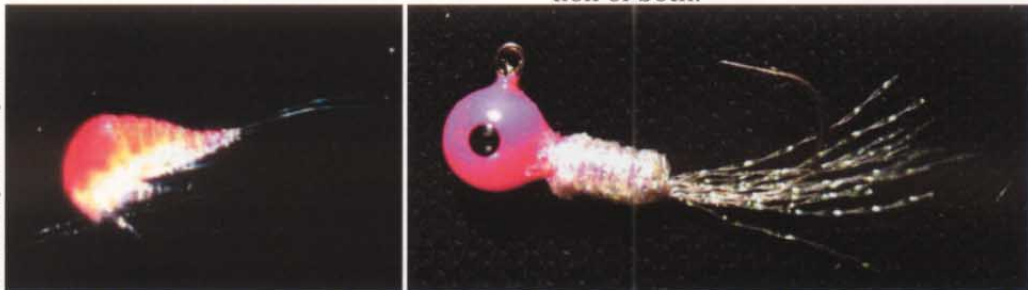
"I did some work in the Connecticut River taking shad apart and I also found some food in some shad stomachs. I never did much with the data, but I would say generally that they are certainly capable of eating (unlike some spawning salmonids that break down their digestive systems). They were generally less likely to have food in the gut the farther upstream that I sampled them (makes sense if it is ocean-based food) and most of what I found was only recognizable as either phytoplankton (green stuff) or zooplankton (brown stuff). I don't really know whether this food was from river feeding or from the ocean, although I would think that some of the fish had been in the river long enough to have

emptied their guts of ocean food (that's a guess). Maybe both sources. I also found occasional other flotsam including fish scales and grass that could have been ingested accidentally or on purpose, but was almost certainly from the river (not ocean).

I will say that some fish I sampled near shore off New Jersey (in the ocean) also had food in the guts and it did not look a lot different from the fish in the river. I never analyzed it for type. Also, I spent a bit of time trying to get migratory adult shad (from the river) to survive in an artificial seawater system and I could get a few of them to start feeding again on brine shrimp."

John Walter noted, "What is interesting and more perplexing is that in the freshwater spawning areas I found an almost complete absence of food in the stomachs. Several explanations may account for this. It may be due to an absence of suitably-sized prey. Larger planktonic prey is far less abundant in freshwater rivers. Since shad will strike at lures during this time and will feed on insect hatches if they occur, it may be that the proper food does not exist for shad on the freshwater spawning areas. This fits into the theory of anadromy that one environment, the river, is beneficial for juveniles, and another, the ocean, is more beneficial for adults. Thus since one environment better serves the needs of different life history stages of the animal, it migrates.

The other explanation may be that shad willingly cease to feed on available prey either because their time and efforts are consumed by reproduction or for other reasons such as so as not to eat their young. Other fish cease to feed during spawning, so this is not an unlikely explanation. Probably it is a combination of both."



"Round heads, spare tails and pink coloration are strongly evocative of the copepod shape and reddish oil seen through their transparent carapace..."