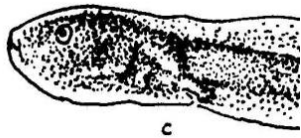


TADPOLE TIDBITS!

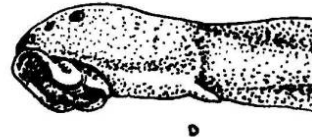
From the Saint Louis Zoo Nutrition Department

Bet you didn't realize that tadpoles have several different feeding strategies, just as do larger, cuddlier critters! They have specialized mouths and gastrointestinal tracts that differ by feeding types. From the drawings below (borrowed from a publication by Noble, 1931), you can see the four types of mouths displayed by tadpoles with different feeding habits. Anatomy gives excellent clues as to the ways animals eat.

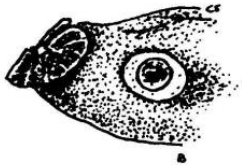
"Unspecialized" Mouth



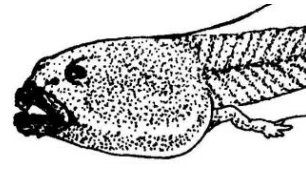
"Bottom-Feeder" Mouth



"Surface-Feeder" Mouth



"Cannibalistic" Mouth



The less obvious, internal anatomy also gives great clues as to appropriate diets for these different species. Carnivorous tadpole species have unspecialized, straight-tube digestive tracts and unspecialized microbial flora compared with the more coiled intestines and resident microbial populations found in more herbivorous tadpole species. Some of these latter categories have digestive tracts which, uncoiled, can be up to 20 times the length of the tadpole body (Pryor, unpubl. data)! Stomachs are not differentiated, but house a lower-pH region; mucus and enzyme activity is found throughout the length of the tract. The enlarged hindgut area has cilia to increase absorption from plant-based diets, and contains complex populations of protozoans, microbes, and nematodes that undoubtedly assist with digestion/fermentation. These differences in the digestive tract, and the bacteria inside, are actually very similar to what we also see in mammals, birds, and reptiles (carnivores vs. herbivores).

All aspects must be examined in developing optimal feeding programs for our diverse wildlife species – even the tiniest!