in 'Borax' (Lind 1974). Buffering minimized decomposition due to low pH. The body was slit from the anus to the pelvic girdle to allow for rapid penetration of formalin into the body cavity, thus ensuring better preservation of the stomach and its contents.

Fork lengths were determined using a measuring board. The fork length of a fish is the distance from the tip of its snout to the furthest tip of the tail (Keast 1977, Brown 1977, WynneEdwards 1981). Weights were recorded using a triple arm balance accurate to 0.1 g. The fish were soaked in water for 24 hours and pat dried with paper towel before weighing.

Ages of fish were determined from scales using the method outlined in Baganel and Tesch (1978). Six scales were removed from the right side of the fish: two from above the lateral line; two from behind the pectoral fin; and two from the caudal peduncle. Three different locations were selected to reduce the probability of obtaining all regenerated scales. These scales were placed in water and examined under a disecting scope. Age was determined by the identification of year marks or annuli within the pattern of concentric circuli on the upper surface of the scale. This method is considered relatively reliable for yellow perch scales up to year class VI or VII. At this age annuli begin to occur too closely to be distinguished. It should be noted that the designation of year classes was based directly upon these year marks and may not necessarily be the exact age of the fish (Baganel and Tesch 1978).

ZOOPLANKTON COLLECTION

Zooplankton samples were collected on May 27, July 8-9, and September 9-10. Fifteen replicate samples were taken from each littoral site at depths between 0.5 and 1.5 m. Sampling times were at dawn (0600-0900 h) and at dusk (2000-2200 h). Pelagic samples were collected at midday (1200 h) at one metre intervals between zero and fifteen metres.

All samples were collected using a 30 L Schindler trap fitted with a "Nitex" #253 nylon monofilament plankton net (100 meshes / in). Specimens were then preserved in vials containing a 4.0% solution of formalin to which sucrose had been added (40 g./ L) (Prepas 1978). The addition of sucrose prevented the 'ballooning' of cladoceran carapaces (Haney and Hall 1973).

Samples containing less than 400 individual were counted in their entirety. Larger samples were subsampled using a method modified from Allanson and Kerrich (1964). Each sample was diluted to 100 ml and mixed into a homogeneous suspension. Five millimetre subs-samples were withdrawn from the suspension using a wide mouthed pipette (bore size 4 mm) and placed in a petri dish. The number of sub-samples varied depending on the estimated initial sample size. Replicate samples were summed and averged for each site.

Cladocera were identified to species using Brooks (1959). Lengths were measured from the top of the helmet to the base of the spine. Copepods were recorded as a single group.

STOMACH ANALYSIS

Stomach contents, removed from between the the esophogus and the pyloric sphincter, were placed in a petri dish and examined under a disecting scope. Identification of benthic invertebrates were taken down to family with the aid of Merrit and Cummins (1978). Zooplankton were identified to genus using Brooks (1959) Partial digestion made identification to species generally unreliable.

Food items were recorded as an estimated percentage of the total composition by volume. Ideally, these volume estimates are determined by displacement of water; however, the sizes of the food items found in the stomachs made this method impractical. Instead, volume estimates were made with the aid of a graph paper grid placed under the petri dish. Using this grid two dimensions of the volume could be measured. The depth dimension had to be estimated by eye (Pillay 1952). Therefore, individual volumes were approximated by rectangular prisms of varying dimensions which could then be compared.

The volumetric method of stomach analysis was choosen because it provides the best indication of the relative importance of each food class to the fish (Brown 1977). Numerical methods tend to overestimate the importance of small organisms, while gravimetric wet weight analysis is equally inaccurate for zooplankton due to the problems of surface water removal from such small organisms (Hyslop 1980).

RESULTS

PERCH FEEDING

Yellow perch feeding data were examined with respect to two variables: age and season. The fish were divided into three age classes - years 0-I; II-III; IV+ - based on scale age determination. In this way dietary shifts resulting from increasing age might be detected. Feeding data were also separated on the basis of sampling date in order to detect changes resulting from seasonal shifts in resource abundance (for a more indepth examination of benthic resource dynamics in Sunfish Lake see Wynne-Edwards (1981)).

Data from the 1980 and 1981 collections are presented in table 2. A similar trend towards planktivory was evident in both sampling seasons. Therefore, data from the two sampling seasons have been pooled into a single data set to provide a more complete picture of the yellow perch's overall diet and, perhaps, give a better indication of the general or "average" diet of the yellow perch of Sunfish Lake (Keast 1977).

TABLE 2: Comparative feeding data - 1980, 1981

AGE CLASS: 0-I

Month	Year	zoo	chi	an	zyg	eph	amp	ter	fish	deca
MAY	1980 N=26	55.1	15.4	0.5	8.8	.84	4.5	3.5	0	0
	1981 N=0									
JULY	1980 N=0									
	1981 N=0									
SEPT.	1980 N=12	42.1	31.3	0	0	0	1.51	13.75	0	0
	1981 N=0									

AGE CLASS: II - III

Month	Year	zoo	chi	an	zyg	eph	amp	ter	fish	deca
MAY	1980 N=3	97	3	0	0	0	0	0	0	0
	1981 N-15	52	26.4	0	0	4	0	4.2	3.3	0
JULY	1980 N=5	60	2.5	5	0	0.3	0	0	10	0
	1981 N=22	81.4	2.0	4.5	0	0	0	0	8.6	0
SEPT.	1980 N=8	75	0	1.0	0	0.8	0	0	0	0
	1981 N=9	70.5	7.7	0	0	0	0	0	16.6	0

AGE CLASS: IV +

Month	Year	zoo	chi	an	zyg	eph	amp	ter	fish	deca
MAY	1980 N =1	90	10	0	0	0	0	0	0	0
	1981 N=10	58.5	8.05	0	0	0.6	0	0	0	29.8
JULY	1980 N=1	62.5	35.5	0	0	0	0	0	0	0
	1981 M=4	70	15	0	0	5	0	0	0	0
SEPT.	1980 N=2	66.6	0	0	0	0	0	0	0	28.0
	1981 N=1	0	0	35	0	0	0	0	0	65