



**U.S. Environmental
Protection Agency**

New England Region
Boston, Massachusetts

DRAFT FINAL VER II

Fish Biomass Estimate for Housatonic River Primary Study Area

DCN: GE-061202-ABBF

June 2002

Environmental Remediation Contract General Electric (GE)/Housatonic River Project Pittsfield, Massachusetts

Contract No. DACW33-94-D-0009/032

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**Fish Biomass Estimate
For
Housatonic River Primary Study Area**

June 2002

Prepared by

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Prepared under

EPA Contract No. DACW33-94-D-0009/032

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DCN: GE-061202-ABBF

Prepared for

U.S. Environmental Protection Agency

Region 1

Boston, Massachusetts



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1 **1.0 INTRODUCTION**

2 Investigators working with the U.S. Environmental Protection Agency (USEPA) and
3 other Federal and State agencies are modeling the fate and transport of polychlorinated
4 biphenyl (PCB) contamination and assessing the associated risk to human health and the
5 ecosystem in the Housatonic River near Pittsfield, Massachusetts. Since fish are an
6 important component of the upper trophic levels of the aquatic food web, estimates of the
7 biomass (g/m^2) of each fish species within specific modeling reaches of the Housatonic
8 River primary study area (PSA) would be useful (see Beach *et al.* 2000).

9 The specific objective of this study was to estimate biomass within each reach of the PSA
10 for:

- 11 • Largemouth bass (*Micropterus salmoides*¹)
- 12 • Goldfish (*Carassius auratus*)
- 13 • Common carp (*Cyprinus carpio*)
- 14 • Bluegill sunfish (*Lepomis macrochirus*)
- 15 • Pumpkinseed sunfish (*Lepomis gibbosus*)
- 16 • Cyprinids (golden shiner [*Notemigonus crysoleucas*], common shiner [*Luxilus*
17 *cornutus*], spottail shiner [*Notropis hudsonius*], or other from family Cyprinidae),
- 18 • Brown bullhead (*Ameiurus nebulosus*)
- 19 • Yellow perch (*Perca flavescens*)
- 20 • White sucker (*Catostomus commersoni*)

21 These data will be used to (1) establish initial conditions in the AQUATOX model (Park
22 2000), (2) provide data for calibration and validation of the model, and (3) provide
23 information that could be used in future fishery management efforts.

24 This report presents draft biomass estimates by reach, species, and size class, as well as
25 by reach and age class for largemouth bass.

¹ Fish nomenclature follows Hartel *et al.* (1996) unless otherwise noted.

1 **2.0 METHODS**

2 Biomass estimates were developed for each species for both prey-sized fish (fish <10 cm)
3 and all other size classes pooled (fish >10 cm). Separate estimates were developed for
4 each species/size class group in each of the 5 modeling reaches (i.e., Reaches 5A, 5B, 5C,
5 backwaters (BW), and Woods Pond (WP)). Separate age-class biomass estimates,
6 however, were generated for largemouth bass in each reach. The target range for the
7 precision of the estimates was to achieve 95% confidence limits for biomass that were
8 within a factor of two for largemouth bass and within one order of magnitude for forage
9 species (R. Park, AQUATOX modeler, personal communication to USEPA).

10 Survey methods were based on existing population estimation protocols (see Zippin
11 1958, Ricker 1975, Mitro and Zale 2000, McInerny and Cross 2000).

12 **2.1 FIELD SAMPLING**

13 Electrofishing sampling was conducted during 21 – 25 August 2000 and 23 – 25 October
14 2000. Eleven sample locations were randomly chosen and surveyed within each reach
15 (see Figures 1a – 1d in [Attachment A](#)). One location per reach was surveyed using multi-
16 pass, or depletion, sampling (Zippin 1958, White *et al.* 1982, Van Deventer and Platts
17 1983 and 1989), and the remaining 10 sites were surveyed using single-pass sampling
18 (i.e., one pass of the electrofishing boat). Survey areas included the entire channel width
19 and were generally about 200 m in length. Based on previous electrofishing surveys in
20 each reach, this length was expected to provide a suitable number of fish for the study
21 (Woodlot Alternatives 2000).

22 Fish were immobilized using an electrofishing boat with support from four fish-netters
23 and one biometrician. The sampling configuration consisted of a 1991 Smith-Root, Inc.,
24 18-foot Lifetimer electrofishing boat with a 5.0 Gas Power Pulsator (GPP) Programmable
25 Output Waveform (POW) Electrfisher. Output ranged from 425 to 525 volts and the
26 specific conductivity of the river in the sampling areas ranged from 225 to 350
27 microsiemens/cm.

1 The multi-pass survey was the first sampling event within each reach and followed the
2 protocols described by Zippin (1958), White *et al.* (1982), and Van Deventer and Platts
3 (1983). Assumptions for multi-pass sampling include:

- 4 • No animals enter or leave the sampling area
5 • Each animal has an equal chance of being captured
6 • The probability of capture remains constant with each removal

7 With electrofishing, adherence to these assumptions requires:

- 8 • Complete blocking of the sampling area
9 • Uniform capture effort applied to each pass
10 • No change in voltage, frequency, or pulse width
11 • No change in speed
12 • Maintaining the same direction, or sampling path, in all passes
13 • Use of more than one electrofishing machine in larger streams

14 After setting up the block nets, electrofishing commenced at the downstream-end and
15 proceeded upstream along the east bank, returning downstream in the middle of the
16 survey area, and continuing upstream along the west bank, to finish at the upstream-end
17 along the west bank. This survey pattern was employed for all multi-pass sampling areas.
18 During the first pass, electrofishing within 5 m of the block-nets was avoided to mimic
19 unblocked single-pass survey protocols. Captured fish were placed into onboard live-
20 wells containing location-specific water and were then transferred to an onshore
21 processing station at the end of each round.

22 Fish were identified to species and the length (cm) and weight (g) of each individual was
23 recorded. Numbers of fish shocked and observed but not captured, if any, were recorded
24 to species when possible. Electrofishing continued in the block-netted area using the
25 multi-pass removal method until sufficient numbers had been captured to generate a

1 maximum-likelihood population estimate. To determine this, sample size estimates were
2 generated using MicroFish® software (version 3.0) following each pass to determine the
3 number of electrofishing passes required to produce the desired levels of precision in the
4 maximum-likelihood population estimate (Van Deventer and Platts 1989).

5 Following the multi-pass survey, 10 additional sites were sampled within the same reach
6 using the single-pass removal method (i.e., one pass of the electrofishing boat). Block-
7 nets were not used during the single-pass sampling; otherwise, single-pass surveys
8 utilized an identical survey pattern, capture technique, and processing protocol as the
9 multiple-pass surveys.

10 The area (m^2) of each multi-pass survey site was determined by GPS survey of the
11 corners of the block-netted area. The upstream and downstream limits of single-pass
12 survey sites were also GPS surveyed, and the area surveyed was estimated by multiplying
13 the length of the survey site by the average width of the river.

14 **2.2 DATA ANALYSIS**

15 Fish captures were analyzed using the *Statistica®* (version 6.0) software system (StatSoft
16 2001). Each fish was entered as a line in a data file that included the reach, sample site,
17 sample type (multi- vs. single-pass), run number (for multi-pass), species, length, and
18 weight. In the rare case of missing weights, a species-specific regression of the log
19 weight and log length was used to predict the missing weight (Zar 1999:330). The age of
20 largemouth bass was also estimated using a regression of log-transformed lengths and
21 ages developed from recent Housatonic River data (USFWS 1999). To allow
22 comparisons between sites within a reach and between reaches, capture data were also
23 standardized to g/m^2 by dividing the total weight caught for each species within a sample
24 site by the area of the site.

25 Capture probability (CP) and the size of the population being sampled were estimated for
26 each species for the multi-pass sampling areas using both the MicroFish® (version 3.0)
27 software program (Van Deventer and Platts 1989) and the program CAPTURE® (Rexstad
28 and Burnham 1992). MicroFish® relies on the Zippin estimator (Zippin 1958) for the

1 removal method with a constant CP, whereas CAPTURE® includes the Zippin estimator as
2 one of several models, including models with variable CPs. Results are comparable
3 between the two programs when using the constant CP model (i.e., the Zippin estimator),
4 however, and CAPTURE® was used for the majority of the analyses because it provided a
5 test of the assumption of a constant CP.

6 **2.3 BIOMASS ESTIMATES**

7 For this study, researchers needed estimates of the mean biomass of each species/size
8 class group within each reach (i.e., a single estimate per reach for each species/size class
9 group). Biomass estimates typically begin with an estimate of the population size, which
10 is then multiplied by a mean weight for the population to derive biomass. This can be
11 expressed in terms of total biomass for a population, but more often it is expressed as
12 weight per unit area (Anderson and Neumann 1996).

13 Researchers have recently used estimates of capture probability (CP) to extrapolate the
14 results of single-pass electrofishing surveys to obtain cost-effective estimates of fish
15 abundance. This is done by dividing single-pass survey results by CPs determined in
16 independent multi-pass surveys from the same reach to estimate population size (Mitro
17 and Zale 2000). This was the approach initially proposed to estimate population size, and
18 ultimately biomass, within each reach of the PSA (Woodlot Alternatives 2000). In this
19 study, however, variability in CPs within species and size class groups precluded the use
20 of this technique (see [Section 3.0, Results](#)).

21 As an alternative approach to using the multi-pass survey data to extrapolate the results of
22 the single-pass surveys, simple linear regression techniques (Zar 1999:324) were used to
23 determine if a linear relationship existed between the biomass caught on the first run of a
24 multi-pass survey and the total biomass caught during all runs. If such a relationship
25 existed, then the regression equation could be used to estimate the total biomass at a
26 sample site based on the biomass caught in a single-pass survey. The assumption with
27 this approach was that most of the fish were caught at each multi-pass survey site.

3.0 RESULTS

The results of the electrofishing surveys are summarized to provide descriptive statistics, including estimates of fish captures, length and weight, and biomass. A substantial proportion of each reach was sampled during the single-pass survey events (see Table 1).

Table 1
Area Sampled per Reach during Single-Pass Surveys

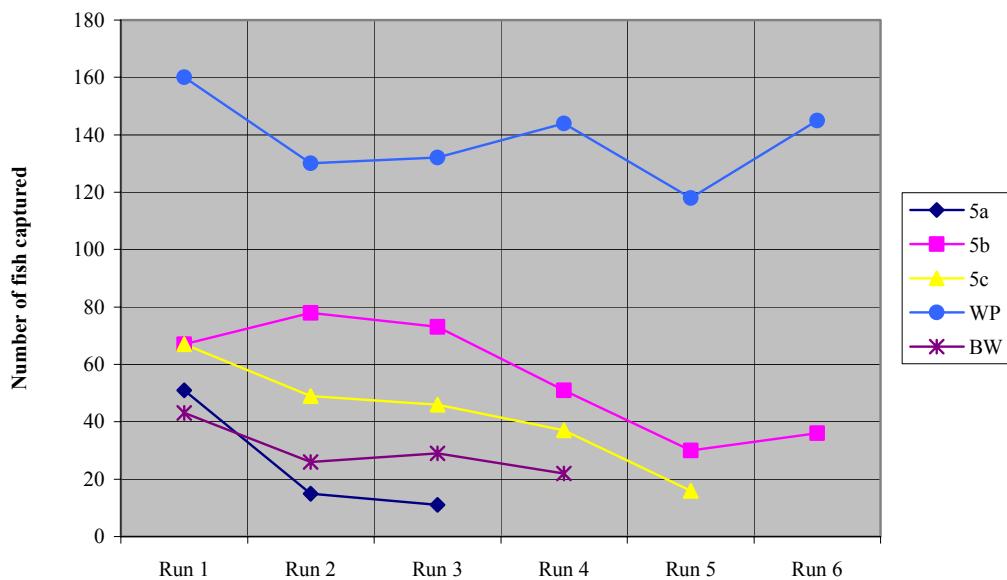
Reach	Reach Size (m²)	Area Surveyed (m²)	% of Area
5A	192,313	52,668	27
5B	87,577	49,660	57
5C	158,925	57,996	37
Backwaters (BW)	167,727	18,738	11
Woods Pond (WP)	219,555	41,181	19
Total	826,097	220,243	27

3.1 SUMMARY OF FISH CAPTURES

9 Fish captures totaled 7,064 individuals and included 17 species, 2 hybrids (bluegill-
10 pumpkinseed and chain-redfin pickerel), and 1 group of taxa (Cyprinids) (see [Attachment](#)
11 [B](#)). The most common predators were largemouth bass, yellow perch, and northern pike.
12 Common forage fish were bluegill, rock bass, pumpkinseed, and cyprinids, whereas the
13 most abundant bottom feeders were white sucker, common carp, brown bullhead, and
14 goldfish. Other species captured included smallmouth bass, chain pickerel, redfin
15 pickerel, brown trout, rainbow trout, black crappie, yellow bullhead (a single individual),
16 and the hybrids mentioned above. [Attachment C](#) provides the capture data in a
17 standardized biomass (g/m^2) format.

18 Between three and six runs were made during each of the five multi-pass surveys (see
19 [Attachments B and C](#) and Figure 2). Reaches 5A, 5C, and the BW had generally
20 declining captures, as is assumed for implementation of the removal method, but this was
21 not the case for WP and Reach 5B. Fish captures in WP did not decline significantly, and
22 the number of fish caught on the first run for Reach 5B was lower than the second run.
23 Such results indicate that the assumption of a uniform CP was not met and decrease the
24 reliability of the maximum-likelihood population estimates (White *et al.* 1982).

1
2 **Figure 2**
 Summary of Multi-Pass Captures



3
4 Summaries of the single-pass surveys are also provided in [Attachment B](#) and [Attachment](#)
5 [C](#). [Attachment D](#) contains a breakdown of the number of fish sampled, and their weight,
6 by size class. These data indicate that in most reaches the smaller size classes (e.g., <10
7 cm) make up the greatest number of fish; however, the larger size classes, although fewer
8 in number, comprise the majority of the fish community biomass.

9 **3.2 LENGTH-WEIGHT DESCRIPTIVE STATISTICS**

10 Average length and weight descriptive statistics are provided for each species by reach in
11 [Attachment E](#). Pooling the fish sampled during both the multi-pass and single-pass runs
12 generated this information. Descriptive statistics include the sample size, mean, upper
13 and lower 95% confidence limits, median, minimum, maximum, standard deviation, and
14 standard error. Indicators of the distribution of the data (i.e., skewness and kurtosis
15 values) are also provided. Finally, length and weight histograms by size class are
16 provided for each species within a reach with an adequate sample.

1 **3.3 BIOMASS ESTIMATES**

2 **3.3.1 Capture Probability (CP) Method**

3 With the proposed study design, multi-pass electrofishing surveys were to be used to
4 calculate CPs and extrapolate single-pass sampling results to derive population estimates
5 for each species within the reaches of the PSA (Woodlot Alternatives 2000). Population
6 estimates would then be multiplied by mean weights to determine biomass (Anderson and
7 Neumann 1996). A summary of the CPs and population estimates for each species and
8 reach, calculated using the MicroFish® software program (Van Deventer and Platts
9 1989) and sorted by both reach and species, is provided in [Attachment F](#),

10 CPs in the PSA ranged from less than 5% to as much as 86%. In some cases (14/52 or
11 27%), a CP could not be calculated for a species in a reach due to (1) non-declining
12 catches (the most common reason), (2) all the fish were caught on the first run, (3) only
13 one fish was caught, or (4) no fish were caught. Options that were considered in the
14 absence of a calculated CP included using (1) the CP for the same species from a
15 different reach, (2) the CP from a similar species in the same reach, or (3) the species-
16 pooled CP for the reach. There was little consistency, however, in CPs across reaches
17 and between or among species. Largemouth bass CPs, for example, ranged from 14% to
18 58%, white suckers ranged from 33% to 87%, and bluegills 4% to 29%.

19 Fish response to electro-shocking is potentially related to the size of the fish, so the multi-
20 pass data were analyzed to determine if CPs were primarily related to fish size. To
21 determine if this was the case, fish captures were broken down into four size classes (<10
22 cm, 10 – 15 cm, 15 – 30 cm, and >30 cm) and CPs were calculated for each reach by size
23 class (see [Attachment G](#)). This approach, however, also resulted in highly variable CPs
24 with relatively high standard errors.

25 In summary, when it was possible to calculate CPs, the results were variable within and
26 between reaches, species, and size classes, precluding the substitution of CPs in the cases
27 where it wasn't possible to calculate a CP. In addition, CPs were frequently low and
28 often well below the 0.4 value recommended by White *et al.* (1982) for unbiased
29 population estimates. For these reasons, use of CPs to extrapolate the single-pass survey

1 results to develop population estimates, and ultimately biomass estimates, was not
2 practicable.

3 **3.3.2 Direct Estimation of Biomass**

4 Regression analysis was used to determine if there was a linear relationship between the
5 biomass caught in the first run of a multi-pass survey and the total biomass caught. If
6 such a relationship existed, it could be used to develop an equation for predicting total
7 biomass from the single-pass data. This was done using data for two size classes of
8 fish—(1) prey-size (fish <10 cm), and (2) all other fish (fish >10 cm)—and the regression
9 was forced through the origin (i.e., a no-intercept model). The regression analysis
10 demonstrated that there was a linear relationship between the biomass caught in the first
11 run and the total biomass caught at the multi-pass sites (adjusted $R^2=0.9906$, $F=949.0049$,
12 $df=1, 8$, $p=0.000000$, SE of estimate=0.7241). The following predictive equation
13 illustrates this relationship:

14 Total Biomass_{g/m²} = Mean Single-Pass Catch1 Biomass_{g/m²}*4.002

15 This equation, with its associated confidence interval terms, was then used to extrapolate
16 total biomass from the single-pass data for each species/size class combination. Biomass
17 estimates were developed by age class for largemouth bass (see [Attachment H](#)). The
18 input term for the biomass estimates was the mean biomass value (g/m^2) from the ten
19 single-pass sites in each reach. The error term for this estimate (i.e., variability in
20 biomass from site to site within a reach) was not considered because the intent was to
21 develop a mean biomass estimate for the entire reach and not to predict biomass at any
22 particular place within the reach. In performing this regression analysis, the data for fish
23 >10 cm from Reach 5A were statistical outliers and not used because most of the fish
24 were caught on the first run.

25 **4.0 DISCUSSION**

26 Capture probability appeared to be relatively low (roughly 25%) for the gear
27 configuration employed in this study relative to the 40% recommended by White *et al.*
28 (1982). This was likely due to the width and depth of the area being sampled, which

1 potentially provided room for fish to avoid the electrofishing boat (i.e., the boat had to
2 make 3 passes to completely sample each site). With larger sampling areas, Van
3 Deventer and Platts (1983) suggest using multiple electrofishing units to address this
4 concern. This approach might have increased CPs, but would have added substantially to
5 the cost of the survey.

6 The size of the populations being sampled, particularly for the larger fish, were also
7 somewhat small relative to White *et al.*'s (1982) recommendation of a few hundred.
8 Given this, small numbers of fish, even individual fish, materially influenced the CP and
9 population size estimates, depending upon which run of the multi-pass sampling they
10 were caught in. This factor was further compounded by the low CPs associated with the
11 sampling gear configuration. Such conditions, however, are universally encountered with
12 electrofishing sampling.

13 The direct estimation of biomass ultimately employed in this study is a relatively robust
14 estimator of the average biomass within each reach. These estimates are particularly
15 robust given that such a large proportion of each reach was sampled. They are, however,
16 potentially an underestimate of biomass at the time of sampling given that the actual
17 population size of each size class of fish could not be precisely estimated.

5.0 LITERATURE CITED

- Anderson, R.O. and R.M. Neumann. 1996. Length, Weight, and Associated Structural Indices. In Murphy, B.R. and D.W. Willis (eds). 1996. *Fisheries Techniques*, Second Edition. American Fisheries Society, Bethesda, MD.
- Beach, R.B., P.M. Craig, R. DiNitto, A.S. Donigian, G. Lawrence, R.A. McGrath, R.A. Park, A. Stoddard, S.C. Svirskey, W.D. Tate, and C.M. Wallen. 2000. Modeling Framework Design – Modeling Study of PCB Contamination in the Housatonic River. Prepared by R.F. Weston, Inc., with AQUA TERRA Consultants for the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency.
- Hartel, K.E., D.B. Halliwell, and A.E. Launer. 1996. An Annotated Working List of the Inland Fishes of Massachusetts. Harvard Museum of Comparative Zoology. Harvard University, Cambridge, MA>
- McInerny, M.C. and T.K. Cross. 2000. Effects of Sampling Time, Intraspecific Density, and Environmental Variables on Electrofishing Catch per Effort of Largemouth Bass in Minnesota Lakes. *North American Journal of Fisheries Management*.
- Mitro, M.G. and A.V. Zale. 2000. Predicting fish abundance using single pass removal sampling. *Canadian Journal of Fisheries and Aquatic Sciences*. 57: 951-961.
- Park, R.A. 2000. AQUATOX for windows, a modular toxic effects model for aquatic ecosystems, Technical Documentation. U.S. Environmental Protection Agency, Office of Science and Technology, Contract Number 69-C4-0051.
- Rexstad, E. and K. Burnham. 1992. User's Guide for Interactive Program CAPTURE. Colorado Cooperative Fish and Wildlife Research Unit, Colorado State University, Fort Collins, CO.
- Ricker, W.E. 1975. Computation and Interpretation of Biological Statistics of Fish Populations. *Bulletin of the Fisheries Research Board of Canada* 191. 382 pp.
- StatSoft. 2001. Statistica for Windows, Version 6.0. StatSoft, Tulsa, OK.

USFWS (U.S. Fish and Wildlife Service). 1999. Age Determination of Largemouth Bass (*Micropterus salmoides*) from the Housatonic River Watershed, September/October 1998. Office of Fishery Assistance, U.S. Fish and Wildlife Service, Laconia, NH.

Van Deventer, J.S. and W.S. Platts. 1983. Sampling and Estimating Fish Populations from Streams. Transactions of the North American Wildlife and Natural Resources Conference. 48:349-354.

Van Deventer, J.S. and W.S. Platts. 1989. Microcomputer Software System for Generating Population Statistics from Electrofishing Data – User's Guide for MicroFish® 3.0. USDA Forest Service Intermountain Research Station General Technical Report INT-254.

White, G.C., D.R. Anderson, K.P. Burnham, and D.L. Otis. 1982. Capture-recapture and Removal Methods for Sampling Closed Populations. Los Alamos National Laboratory Publication No. LA-8787-NERP. LANL, Los Alamos, New Mexico.

Woodlot Alternatives, Inc. 2000. Standard Operating Procedure for Fish Biomass Sampling. Prepared for R.F. Weston, Inc., by Woodlot Alternatives, Inc., Topsham, Maine. In Weston, Roy F. 2000. Supplemental Investigation Work Plan for the Lower Housatonic River, Volumes I and II. U.S. Army Corps of Engineers, Technical Support Services, General Electric (GE) Housatonic River Project, Pittsfield, Massachusetts.

Zar, J.H. 1999. Biostatistical Analysis, Fourth Edition. Prentice Hall, Upper Saddle River, NJ. 663 pp.

Zippin, C. 1958. The removal method of population estimation. Journal of Wildlife Management 22:82–90.

6.0 ATTACHMENTS

Attachment A – Fish Biomass Sample Locations

[Fig 1a – Reach 5a](#)

[Fig 1b – Reach 5b](#)

[Fig 1c – Reach 5c](#)

[Fig 1d – Reaches 6a, 6b, 6c & 6d](#)

Attachment B - Summary of Fish Captures by Reach

[Common_species_captures.pdf](#)

Attachment C - Summary of Fish Captures by Reach in grams per sq meter

[Common_species_captures_gpm2.pdf](#)

Attachment D - Summary of Weight of 10 Single Pass Samples by Size Class

[Weight_of_10_Single_Pass_Samples.pdf](#)

Attachment E - Length and Weight Descriptive Statistics by Reach and Species

[Black_crappie_length_weight_data.PDF](#)

[Bluegill_length_weight_data.pdf](#)

[Brown_bullhead_length_weight_data.PDF](#)

[Brown_trout_length_weight_data.PDF](#)

[Chain_pickerel_length_weight_data.PDF](#)

[Common_carp_length_weight_data.PDF](#)

[Cyprinids_length_weight_data.PDF](#)

[Goldfish_length_weight_data.PDF](#)

[Largemouth_bass_length_weight_data.PDF](#)

[Northern_pike_length_weight_data.PDF](#)

[Pumpkinseed_pike_length_weight_data.pdf](#)

[Rainbow_trout_length_weight_data.pdf](#)

[Redfin_pickerel_length_weight_data.pdf](#)

[Rock_bass_length_weight_data.pdf](#)

[Smallmouth_bass_length_weight_data.pdf](#)

[White_sucker_length_weight_data.pdf](#)

[Yellow_perch_length_weight_data.pdf](#)

Attachment F - Summary of Capture Probabilities by Reach and Species

[Capture_probability_by_reach.PDF](#)

[Capture_summary_by_species.PDF](#)

Attachment G - Summary of Capture Probabilities by Reach and Size Class

[Capture_probability_by_size_class.PDF](#)

Attachment H – Biomass Estimates

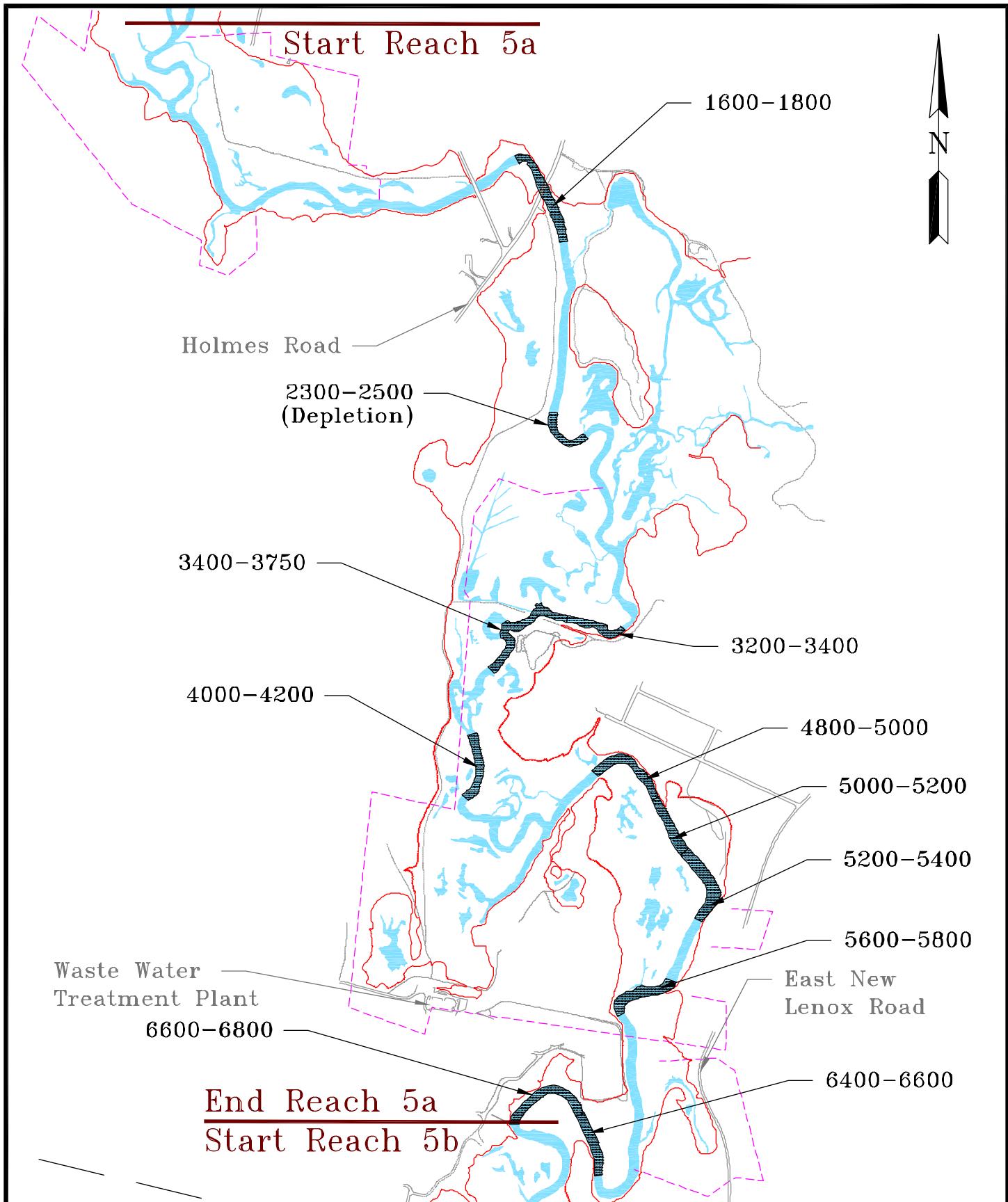
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[Reach5B_biomass_estimates.PDF](#)

[Reach5C_biomass_estimates.PDF](#)

[BW_biomass_estimates.PDF](#)

[WP_biomass_estimates.PDF](#)

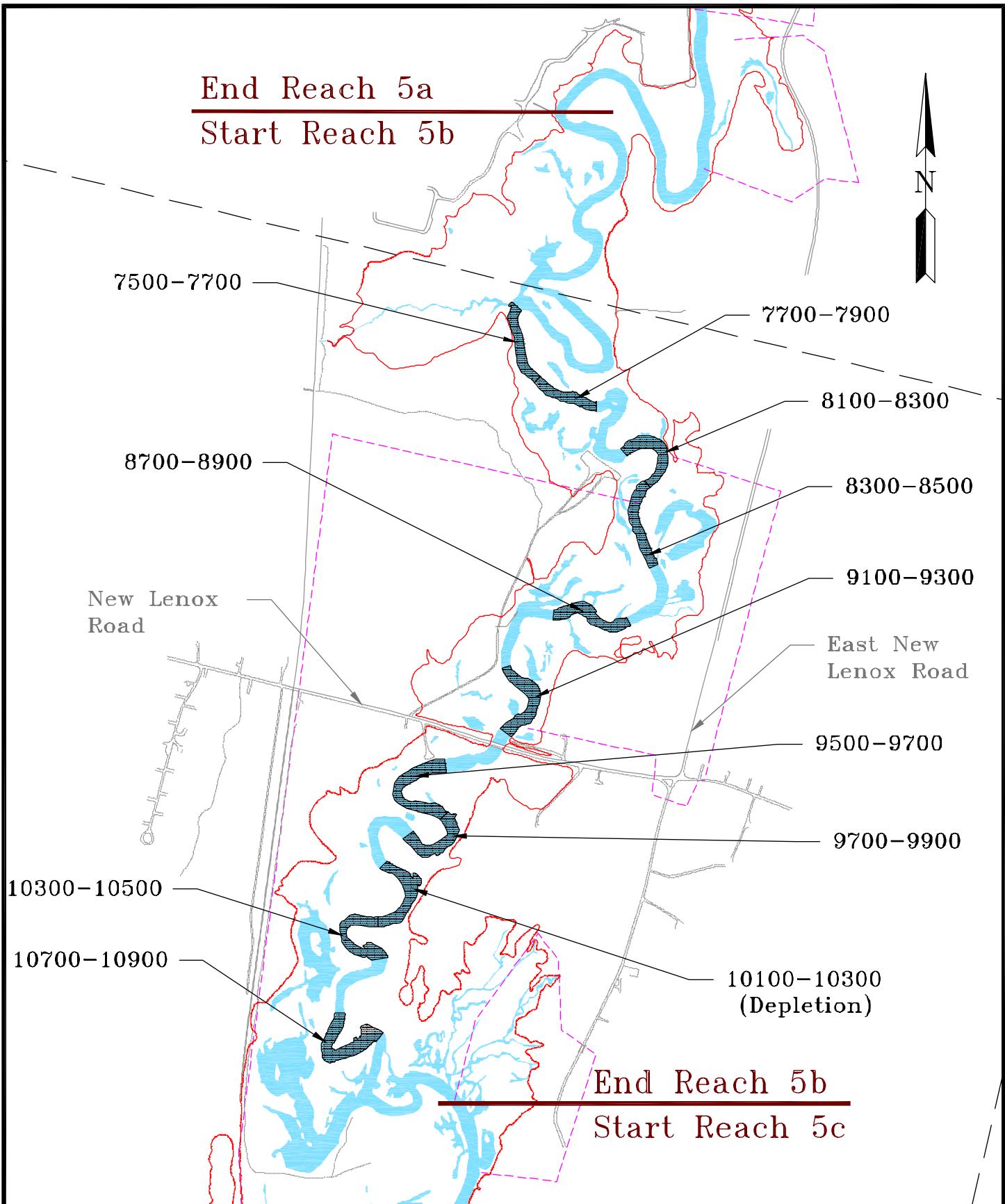


Housatonic River
Ecological Characterization
Newell Street to Woods Pond

SCALE: 1"=1200'

Figure 1a
Fish Biomass
Reach 5a
Sample Locations

DATE: February 2001

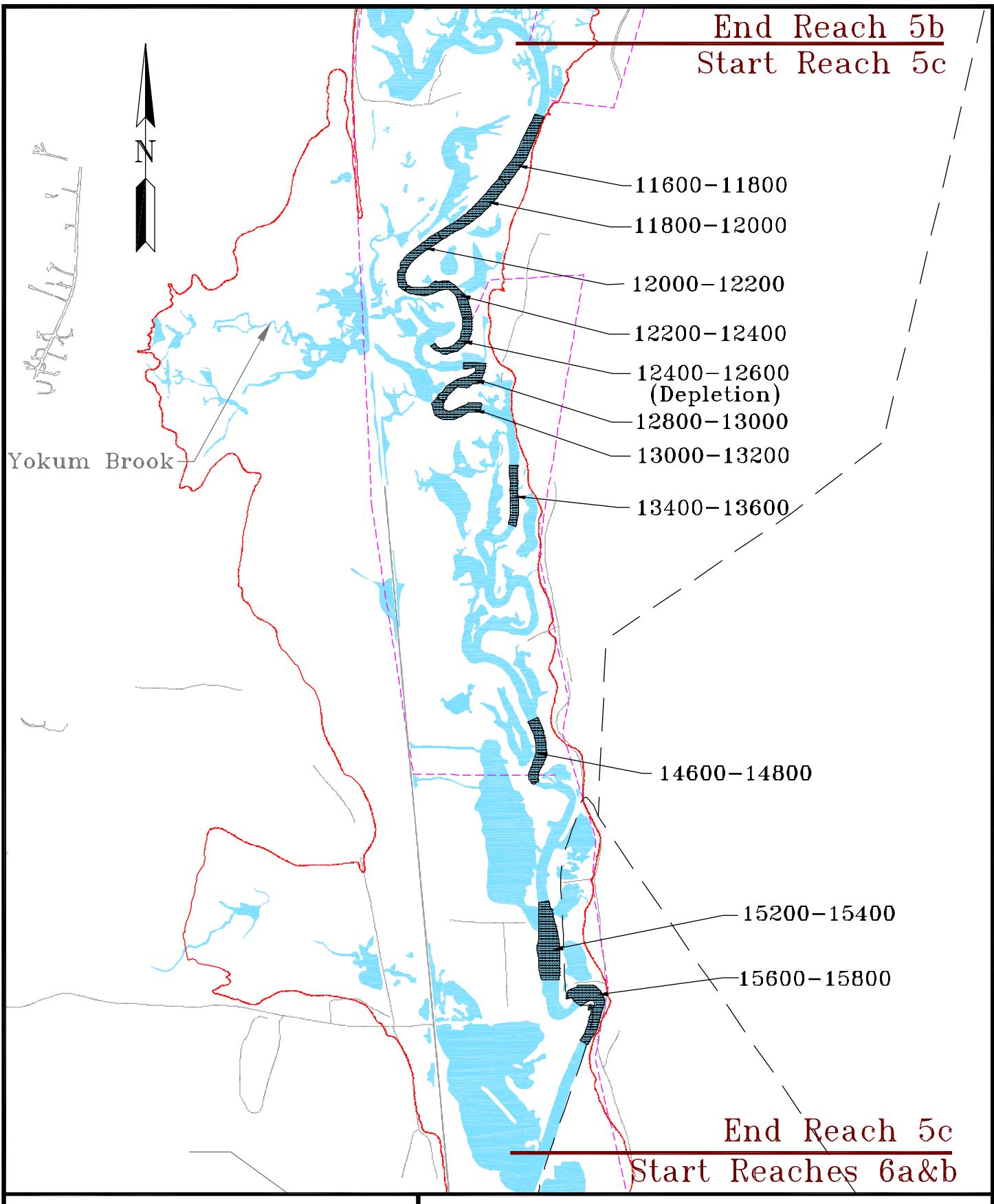


Housatonic River
 Ecological Characterization
 Newell Street to Woods Pond

SCALE: 1"=1000'

Figure 1b
 Fish Biomass
 Reach 5b
 Sample Locations

DATE: February 2001

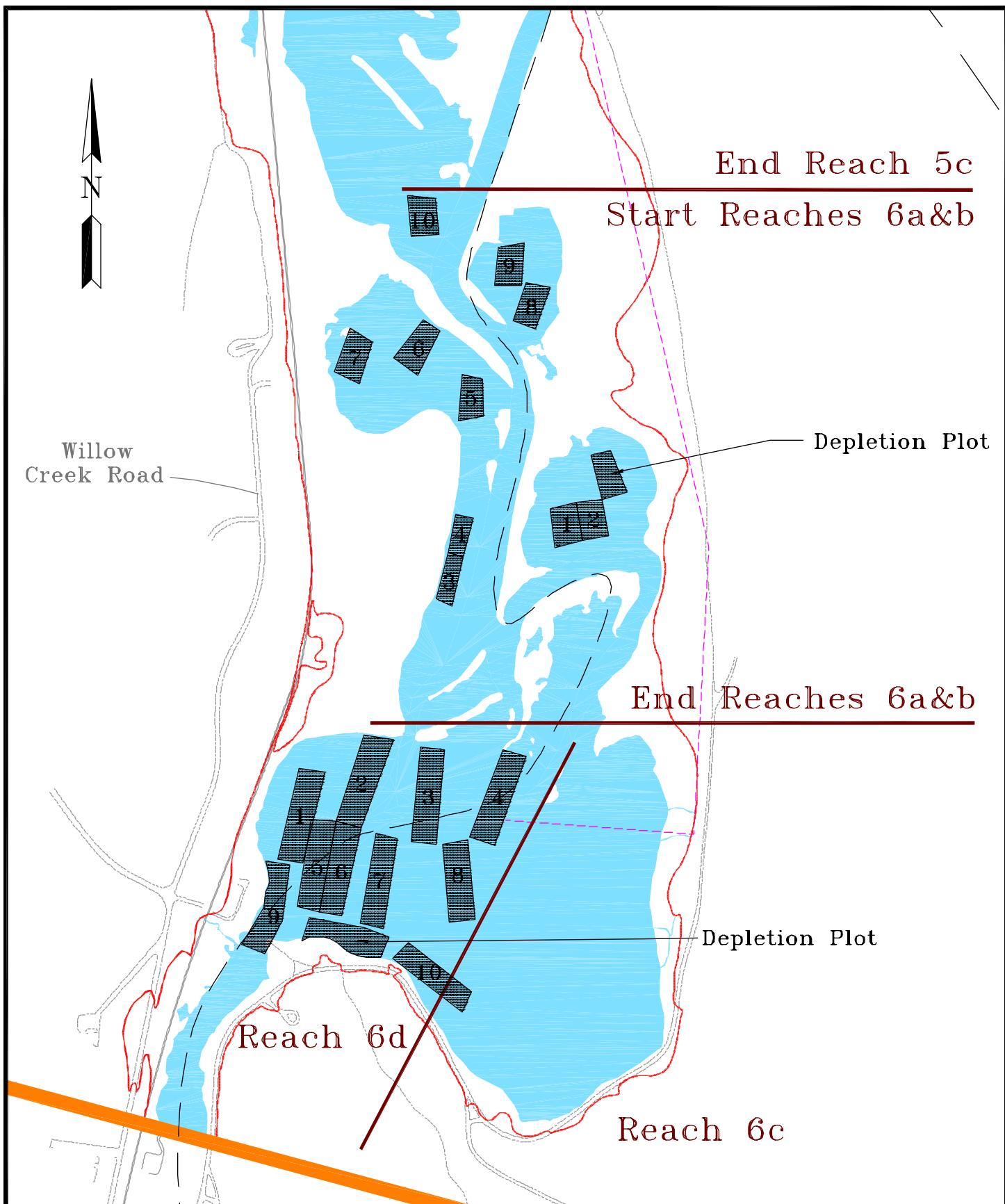


Housatonic River
Ecological Characterization
Newell Street to Woods Pond

SCALE: 1"=1200'

Figure 1c
Fish Biomass
Reach 5c
Sample Locations

DATE: February 2001



Housatonic River
Ecological Characterization
Newell Street to Woods Pond

SCALE: 1"=600'

Figure 1d
Fish Biomass
Reaches 6a,6b,6c&6d
Sample Locations

DATE: February 2001

Reach 5A Common Species Captures (Number of Fish Caught)

	Multi-Pass Runs				Single-Pass Runs										
	1	2	3	Total	16	32	34	40	48	50	52	56	64	66	Total
Predators															
Largemouth Bass	4	1	2	7	6	3	5	6	3	3	7	6	5	1	45
Yellow Perch	5	2	1	8	3	8	3	13	7	12	18	5	9	11	89
Northern Pike	0	0	0	0	1	0	2	1	1	0	4	0	2	0	11
Forage															
Bluegill	2	3	2	7	13	9	1	13	33	16	15	2	4	6	112
Rock Bass	5	1	3	9	6	6	1	10	14	10	7	1	2	3	60
Pumpkinseed	0	1	1	2	2	0	0	3	4	0	4	0	1	0	14
Cyprinids	12	3	1	16	74	44	112	37	31	13	39	96	10	20	476
Bottom															
White Sucker	23	2	1	26	35	33	52	18	27	23	40	18	18	18	282
Common Carp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brown Bullhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	51	13	11	75	140	103	176	101	120	77	134	128	51	59	1089

Reach 5A Other Species Captures

	Multi-Pass Runs				Single-Pass Runs										
	1	2	3	Total	16	32	34	40	48	50	52	56	64	66	Total
Predators															
Smallmouth Bass	0	2	0	2	0	0	0	0	0	0	0	1	0	1	2
Chain Pickerel	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
Redfin Pickerel	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3
Rainbow Trout	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Brown Trout	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Forage															
Black Crappie	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Bluegill Hybrid	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	2	0	2	0	1	3	0	1	0	3	1	2	1	12
Total Captures	51	15	11	77	140	104	179	101	121	77	137	129	53	60	1101

Reach 5B Common Species Captures (Number of Fish Caught)

	Multi-Pass Runs						Single-Pass Runs											
	1	2	3	4	5	6	Total	75	77	81	83	87	91	95	97	103	107	Total
Predators																		
Largemouth Bass	0	5	4	2	2	1	14	10	1	4	8	5	9	10	4	3	2	56
Yellow Perch	32	26	29	22	6	7	122	37	19	29	25	22	32	27	50	50	26	317
Northern Pike	1	2	2	2	0	0	7	1	1	3	1	0	2	4	2	3	2	19
Forage																		
Bluegill	19	22	22	9	11	7	90	25	10	21	13	22	16	12	18	19	17	173
Rock Bass	1	4	3	3	3	3	17	3	1	7	5	16	5	2	6	1	0	46
Pumpkinseed	7	6	5	4	1	2	25	8	1	10	2	2	5	3	4	2	3	40
Cyprinids	4	8	2	7	5	11	37	182	3	6	54	16	15	67	27	21	3	394
Bottom																		
White Sucker	1	1	0	0	0	1	3	131	5	2	2	0	2	4	45	6	2	199
Common Carp	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Brown Bullhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goldfish	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	65	74	67	49	28	32	315	397	41	82	110	83	88	130	156	105	55	1247

Reach 5B Other Species Captures

	Multi-Pass Runs						Single-Pass Runs											
	1	2	3	4	5	6	Total	75	77	81	83	87	91	95	97	103	107	Total
Predators																		
Chain Pickerel	1	0	0	0	0	0	1	1	0	1	0	4	0	1	0	0	0	7
Redfin Pickerel	0	4	6	2	1	4	17	2	0	4	3	5	4	9	3	5	3	38
Smallmouth Bass	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
Forage																		
Black Crappie	0	0	0	0	1	0	1	0	1	1	0	0	3	1	0	0	0	6
Bluegill Hybrid	1	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	3
Total	2	4	6	2	2	4	20	3	1	6	4	9	7	14	3	5	4	56
Total Captures	67	78	73	51	30	36	335	400	42	88	114	92	95	144	159	110	59	1303

Reach 5C Common Species Captures (Number of Fish Caught)

	Multi-Pass Runs						Single-Pass Runs										
	1	2	3	4	5	Total	116	118	120	122	128	130	134	146	152	156	Total
Predators																	
Largemouth Bass	6	2	3	2	1	14	8	2	9	15	11	6	2	17	19	12	101
Yellow Perch	13	9	18	6	3	49	34	47	19	12	57	32	20	14	27	13	275
Northern Pike	0	0	0	1	0	1	5	2	3	0	2	0	0	2	0	0	14
Forage																	
Bluegill	36	22	14	17	8	97	60	62	63	30	57	70	27	49	57	57	532
Rock Bass	7	8	8	9	2	34	11	5	5	8	19	14	5	15	16	14	112
Pumpkinseed	3	7	2	1	2	15	16	20	16	6	25	25	4	12	17	20	161
Cyprinids	0	0	0	0	0	0	7	15	22	7	13	15	11	19	62	3	174
Bottom																	
White Sucker	1	0	1	1	0	3	3	30	4	1	6	9	5	5	6	7	76
Common Carp	0	1	0	0	0	1	1	1	0	0	0	1	4	0	2	0	9
Brown Bullhead	0	0	0	0	0	0	0	1	1	1	0	1	0	1	8	0	13
Goldfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	66	49	46	37	16	214	145	185	142	80	190	173	78	134	215	126	1468

Reach 5C Other Species Captures

	Multi-Pass Runs						Single-Pass Runs										
	1	2	3	4	5	Total	116	118	120	122	128	130	134	146	152	156	Total
Predators																	
Redfin Pickerel	1	0	0	0	0	1	3	5	0	3	1	2	0	2	10	1	27
Chain Pickerel	0	0	0	0	0	0	3	0	2	1	2	2	0	0	1	4	15
ChainxRedfin Hybrid	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
Forage																	
Black Crappie	0	0	0	0	0	0	2	1	3	0	1	5	0	3	6	0	21
Bluegill Hybrid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	1	0	0	0	0	1	8	6	5	4	5	9	0	5	18	6	66
Total Captures	67	49	46	37	16	215	153	191	147	84	195	182	78	139	233	132	1534

Backwater Reach Common Species Captures (Number of Fish Caught)

	Multi-Pass Runs					Single-Pass Runs										
	1	2	3	4	Total	1	2	3	4	5	6	7	8	9	10	Total
Predators																
Largemouth Bass	5	1	2	2	10	5	3	2	2	1	3	0	6	2	2	26
Yellow Perch	15	14	20	8	57	5	10	20	5	1	3	4	3	2	6	59
Northern Pike	2	0	1	0	3	1	1	1	0	0	1	0	0	0	1	5
Forage																
Bluegill	5	3	3	2	13	30	46	20	22	8	17	31	15	15	3	207
Rock Bass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pumpkinseed	3	2	1	1	7	10	16	3	4	5	3	7	3	6	0	57
Cyprinids	2	2	0	4	8	0	0	0	0	0	0	0	12	0	10	22
Bottom																
White Sucker	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Common Carp	0	0	0	2	2	0	0	0	0	0	0	4	1	0	0	5
Brown Bullhead	10	1	2	2	15	5	5	1	2	0	1	1	2	0	0	17
Goldfish	0	2	0	0	2	6	1	0	1	0	4	1	2	1	3	19
Total	42	25	29	21	117	62	82	47	36	16	32	48	45	26	25	419

Backwater Reach Other Species Captures

	Multi-Pass Runs					Single-Pass Runs										
	1	2	3	4	Total	1	2	3	4	5	6	7	8	9	10	Total
Predators																
Chain Pickerel	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Forage																
Black Crappie	1	1	0	1	3	4	11	0	1	0	1	4	4	0	0	25
Bluegill Hybrid	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	1	1	0	1	3	5	11	0	1	0	2	4	4	0	0	27
Total Captures	43	26	29	22	120	67	93	47	37	16	34	52	49	26	25	446

Woods Pond Common Species Captures (Number of Fish Caught)

	Multi-Pass Runs							Single-Pass Runs										
	1	2	3	4	5	6	Total	1	2	3	4	5	6	7	8	9	10	Total
Predators																		
Largemouth Bass	11	9	5	7	3	7	42	1	3	1	2	1	1	5	4	8	8	34
Yellow Perch	6	9	2	4	2	0	23	30	8	19	23	17	18	15	14	5	11	160
Northern Pike	4	4	1	4	2	0	15	1	2	0	5	2	1	0	0	0	3	14
Forage																		
Bluegill	118	93	104	98	86	121	620	27	98	43	71	31	51	97	48	14	175	655
Rock Bass	3	5	2	4	4	2	20	1	3	2	10	0	0	1	1	7	2	27
Pumpkinseed	9	5	12	6	13	11	56	0	20	8	34	0	6	6	5	3	6	88
Cyprinids	0	1	1	0	0	1	3	0	0	2	0	0	0	1	0	0	1	4
Bottom																		
White Sucker	3	0	0	0	0	1	4	0	0	3	2	3	0	0	0	0	2	10
Common Carp	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Brown Bullhead	1	0	0	13	2	0	16	20	7	10	1	2	8	8	13	2	10	81
Goldfish	0	1	2	0	1	1	5	1	4	0	5	0	2	4	2	1		19
Total	155	127	129	136	113	144	804	81	145	88	153	57	87	137	88	40	218	1094

Woods Pond Other Species Captures

	Multi-Pass Runs							Single-Pass Runs										
	1	2	3	4	5	6	Total	1	2	3	4	5	6	7	8	9	10	Total
Predators																		
Chain Pickerel	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Redfin Pickerel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Forage																		
Black Crappie	4	3	3	7	4	1	22	0	1	1	2	1	0	0	0	0	2	7
Bottom																		
Yellow Bullhead	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Bluegill Hybrid	1	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0	0	1
Total	5	3	3	8	5	1	25	0	1	1	3	1	0	1	0	0	3	10
Total Captures	160	130	132	144	118	145	829	81	146	89	156	58	87	138	88	40	221	1104

Reach 5A Common Species Captures (grams/m^2)

	Multi-Pass Runs				Single-Pass Runs										
	1	2	3	Total	16	32	34	40	48	50	52	56	64	66	Total
Predators															
Largemouth Bass	0.635	0.315	0.143	1.093	0.640	0.381	0.231	0.738	0.178	0.232	0.568	0.417	0.533	0.193	4.111
Yellow Perch	0.242	0.055	0.008	0.305	0.132	0.363	0.077	0.413	0.143	0.325	0.253	0.146	0.216	0.227	2.295
Northern Pike	0.000	0.000	0.000	0.000	0.097	0.000	0.462	0.025	0.017	0.000	0.268	0.000	0.071	0.000	0.940
Forage															
Bluegill	0.049	0.102	0.075	0.226	0.092	0.172	0.010	0.119	0.233	0.201	0.136	0.009	0.042	0.027	1.041
Rock Bass	0.294	0.107	0.026	0.427	0.141	0.401	0.030	0.354	0.609	0.463	0.217	0.034	0.057	0.057	2.363
Pumpkinseed	0.000	0.003	0.020	0.023	0.010	0.000	0.000	0.037	0.027	0.000	0.025	0.000	0.026	0.000	0.125
Cyprinids	0.368	0.039	0.045	0.452	0.143	0.616	0.211	0.201	0.272	0.066	0.170	0.224	0.084	0.106	2.093
Bottom															
White Sucker	3.272	0.070	0.202	3.544	2.117	5.282	3.564	0.710	2.962	2.038	2.349	2.561	2.314	2.027	25.924
Common Carp	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Brown Bullhead	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Goldfish	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	4.860	0.691	0.519	6.070	3.372	7.215	4.585	2.597	4.441	3.325	3.986	3.391	3.343	2.637	38.892

Reach 5A Other Species Captures

	Multi-Pass Runs				Single-Pass Runs										
	1	2	3	Total	16	32	34	40	48	50	52	56	64	66	Total
Predators															
Smallmouth Bass	0.000	0.106	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.107	0.000	0.005	0.112
Chain Pickerel	0.000	0.000	0.000	0.000	0.000	0.099	0.000	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.124
Redfin Pickerel	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.081	0.000	0.000	0.000	0.081
Rainbow Trout	0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140
Brown Trout	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031
Forage															
Black Crappie	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.045
Bluegill Hybrid	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.009
Total	0.000	0.106	0.000	0.106	0.000	0.099	0.171	0.000	0.009	0.000	0.151	0.107	0.000	0.005	0.542
Total Captures	4.860	0.797	0.519	6.176	3.372	7.314	4.756	2.597	4.450	3.325	4.137	3.498	3.343	2.642	39.434

Summary of Common Species g per m sq

Reach 5B Common Species Captures (grams/m^2)

	Multi-Pass Runs							Single-Pass Runs										
	1	2	3	4	5	6	Total	75	77	81	83	87	91	95	97	103	107	Total
Predators																		
Largemouth Bass	0.000	0.299	0.335	0.262	0.238	0.046	1.180	1.611	0.044	0.918	0.989	0.458	0.405	0.746	0.105	0.306	0.099	5.681
Yellow Perch	0.494	0.267	0.386	0.285	0.074	0.092	1.598	0.637	1.218	0.642	1.096	0.723	0.456	0.311	0.748	0.721	0.291	6.843
Northern Pike	0.039	0.009	0.030	0.092	0.000	0.000	0.170	0.638	0.017	0.152	0.003	0.000	0.440	0.114	0.015	0.111	0.006	1.496
Forage																		
Bluegill	0.113	0.230	0.213	0.055	0.067	0.057	0.735	0.241	0.238	0.169	0.114	0.254	0.139	0.110	0.168	0.091	0.124	1.648
Rock Bass	0.044	0.144	0.112	0.134	0.097	0.087	0.618	0.083	0.059	0.399	0.201	0.557	0.160	0.053	0.215	0.002	0.000	1.729
Pumpkinseed	0.131	0.072	0.113	0.076	0.002	0.029	0.423	0.080	0.014	0.102	0.055	0.035	0.095	0.024	0.067	0.038	0.052	0.562
Cyprinids	0.021	0.027	0.001	0.005	0.002	0.000	0.056	0.344	0.015	0.030	0.051	0.014	0.025	0.085	0.012	0.129	0.001	0.706
Bottom																		
White Sucker	0.131	0.134	0.000	0.000	0.000	0.159	0.424	28.226	0.513	0.360	0.290	0.000	0.057	0.220	6.934	0.443	0.157	37.200
Common Carp	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.792	0.000	0.000	0.000	0.000	2.792
Brown Bullhead	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Goldfish	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.000	0.000	0.000	0.128
Total	0.973	1.182	1.190	0.909	0.480	0.470	5.204	31.860	2.118	2.772	2.799	2.041	4.569	1.791	8.264	1.841	0.730	58.785

Reach 5B Other Species Captures

	Multi-Pass Runs							Single-Pass Runs										
	1	2	3	4	5	6	Total	75	77	81	83	87	91	95	97	103	107	Total
Predators																		
Chain Pickerel	0.013	0.000	0.000	0.000	0.000	0.000	0.013	0.014	0.000	0.005	0.000	0.108	0.000	0.006	0.000	0.000	0.000	0.133
Redfin Pickerel	0.000	0.012	0.012	0.003	0.004	0.010	0.041	0.009	0.000	0.028	0.012	0.035	0.013	0.037	0.008	0.021	0.010	0.173
Smallmouth Bass	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.003	0.095
Forage																		
Black Crappie	0.000	0.000	0.000	0.000	0.032	0.000	0.032	0.000	0.068	0.051	0.000	0.000	0.047	0.033	0.000	0.000	0.000	0.199
Bluegill Hybrid	0.025	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.000	0.000	0.000	0.035
Total	0.038	0.012	0.012	0.003	0.036	0.010	0.111	0.023	0.068	0.084	0.104	0.143	0.060	0.111	0.008	0.021	0.013	0.635
Total Captures	1.011	1.194	1.202	0.912	0.516	0.480	5.315	31.883	2.186	2.856	2.903	2.184	4.629	1.902	8.272	1.862	0.743	59.420

Reach 5C Common Species Captures (grams/m^2)

	Multi-Pass Runs					Single-Pass Runs											
	1	2	3	4	5	Total	116	118	120	122	128	130	134	146	152	156	Total
Predators																	
Largemouth Bass	1.642	0.318	0.511	0.515	0.015	3.001	0.851	0.075	0.912	0.982	1.212	0.483	0.288	1.828	0.250	0.391	7.272
Yellow Perch	0.512	0.200	0.667	0.112	0.039	1.530	0.449	0.773	0.409	0.149	0.663	0.728	0.669	0.479	0.166	0.210	4.695
Northern Pike	0.000	0.000	0.000	0.246	0.000	0.246	0.244	0.133	0.437	0.000	0.146	0.000	0.000	0.149	0.000	0.000	1.109
Forage																	
Bluegill	0.576	0.381	0.209	0.237	0.131	1.534	0.316	0.336	0.526	0.197	0.509	0.613	0.297	0.310	0.134	0.291	3.529
Rock Bass	0.284	0.426	0.216	0.460	0.063	1.449	0.312	0.132	0.108	0.218	0.653	0.257	0.205	0.252	0.189	0.194	2.520
Pumpkinseed	0.088	0.141	0.027	0.005	0.026	0.287	0.137	0.157	0.071	0.042	0.255	0.284	0.034	0.149	0.071	0.122	1.322
Cyprinids	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.052	0.037	0.004	0.047	0.028	0.024	0.032	0.040	0.002	0.271
Bottom																	
White Sucker	0.115	0.000	0.255	0.011	0.000	0.381	0.172	3.360	0.697	0.167	0.896	1.729	1.391	0.500	0.529	0.709	10.150
Common Carp	0.000	1.074	0.000	0.000	0.000	1.074	0.673	0.517	0.000	0.000	0.000	0.697	2.435	0.000	0.122	0.000	4.444
Brown Bullhead	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.022	0.083	0.000	0.054	0.000	0.044	0.265	0.000	0.523
Goldfish	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.000	0.082	
Total	3.217	2.540	1.885	1.586	0.274	9.502	3.159	5.590	3.219	1.842	4.381	4.873	5.343	3.743	1.848	1.919	35.917

Reach 5C Other Species Captures

	Multi-Pass Runs					Single-Pass Runs											
	1	2	3	4	5	Total	116	118	120	122	128	130	134	146	152	156	Total
Predators																	
Redfin Pickerel	0.003	0.000	0.000	0.000	0.000	0.003	0.003	0.027	0.000	0.006	0.002	0.004	0.000	0.003	0.035	0.001	0.081
Chain Pickerel	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.000	0.109	0.001	0.077	0.050	0.000	0.000	0.030	0.075	0.407
ChainxRedfin Hybrid	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.038	0.000	0.000	0.000	0.024	0.000	0.062
Forage																	
Black Crappie	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.003	0.077	0.000	0.028	0.200	0.000	0.091	0.059	0.000	0.498
Bluegill Hybrid	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
Total	0.003	0.000	0.000	0.000	0.000	0.003	0.108	0.030	0.186	0.007	0.145	0.254	0.000	0.094	0.148	0.078	1.050
Total Captures	3.220	2.540	1.885	1.586	0.274	9.505	3.267	5.620	3.405	1.849	4.526	5.127	5.343	3.837	1.996	1.997	36.967

Backwater Reach Common Species Captures (grams/m^2)

	Multi-Pass Runs					Single-Pass Runs										
	1	2	3	4	Total	1	2	3	4	5	6	7	8	9	10	Total
Predators																
Largemouth Bass	0.508	0.001	0.517	0.005	1.031	0.938	0.571	1.154	1.408	0.002	0.007	0.000	0.243	0.029	0.350	4.702
Yellow Perch	1.204	1.489	1.515	0.775	4.983	0.330	0.913	1.227	0.336	0.024	0.054	0.209	0.207	0.067	0.398	3.765
Northern Pike	0.017	0.000	0.307	0.000	0.324	0.367	0.194	0.275	0.000	0.000	0.273	0.000	0.000	0.000	0.334	1.443
Forage																
Bluegill	0.126	0.013	0.042	0.019	0.200	1.050	1.654	0.833	1.111	0.143	0.214	1.219	0.278	0.338	0.006	6.846
Rock Bass	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pumpkinseed	0.126	0.139	0.016	0.057	0.338	0.563	1.048	0.204	0.295	0.206	0.084	0.327	0.042	0.163	0.000	2.932
Cyprinids	0.032	0.002	0.000	0.003	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.007	0.019
Bottom																
White Sucker	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.591	0.000	0.000	0.258	0.000	0.000	0.849
Common Carp	0.000	0.000	0.000	4.301	4.301	0.000	0.000	0.000	0.000	0.000	0.000	6.526	1.038	0.000	0.000	7.564
Brown Bullhead	1.726	0.118	0.355	0.329	2.528	0.980	0.743	0.029	0.106	0.000	0.054	0.131	0.374	0.000	0.000	2.417
Goldfish	0.000	0.852	0.000	0.000	0.852	2.485	0.257	0.000	0.498	0.000	1.105	0.367	0.792	0.439	1.168	7.111
Total	3.739	2.614	2.752	5.489	14.594	6.713	5.380	3.722	3.754	0.966	1.791	8.779	3.244	1.036	2.263	37.648

Backwater Reach Other Species Captures

	Multi-Pass Runs					Single-Pass Runs										
	1	2	3	4	Total	1	2	3	4	5	6	7	8	9	10	Total
Predators																
Chain Pickerel	0.000	0.000	0.000	0.000	0.000	0.199	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.199
Forage																
Black Crappie	0.001	0.001	0.000	0.023	0.025	0.354	1.017	0.000	0.037	0.000	0.008	0.220	0.163	0.000	0.000	1.799
Bluegill Hybrid	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.011
Total	0.001	0.001	0.000	0.023	0.025	0.553	1.017	0.000	0.037	0.000	0.019	0.220	0.163	0.000	0.000	2.009
Total Captures	3.740	2.615	2.752	5.512	14.619	7.266	6.397	3.722	3.791	0.966	1.810	8.999	3.407	1.036	2.263	39.657

Woods Pond Common Species Captures (grams/m^2)

	Multi-Pass Runs							Single-Pass Runs											
	1	2	3	4	5	6	Total	1	2	3	4	5	6	7	8	9	10	Total	
Predators																			
Largemouth Bass	0.649	0.887	0.416	0.251	0.007	0.184	2.394	0.001	0.003	0.001	0.129	0.006	0.002	0.200	0.010	1.129	0.311	1.792	
Yellow Perch	0.199	0.186	0.035	0.107	0.011	0.000	0.538	0.520	0.136	0.739	0.425	0.632	0.529	0.397	0.273	0.101	0.262	4.014	
Northern Pike	0.666	0.152	0.225	0.496	0.050	0.000	1.589	0.080	0.008	0.000	0.129	0.011	0.004	0.000	0.000	0.055	0.287		
Forage																			
Bluegill	0.908	0.989	1.003	0.753	0.804	1.057	5.514	0.138	0.759	0.346	0.522	0.150	0.247	1.059	0.525	0.196	1.245	5.187	
Rock Bass	0.053	0.072	0.087	0.072	0.056	0.085	0.425	0.032	0.052	0.072	0.189	0.000	0.000	0.013	0.034	0.188	0.023	0.603	
Pumpkinseed	0.249	0.095	0.231	0.084	0.272	0.128	1.059	0.000	0.203	0.026	0.213	0.000	0.089	0.120	0.122	0.056	0.128	0.957	
Cyprinids	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.064	0.000	0.000	0.000	0.065	
Bottom																			
White Sucker	0.812	0.000	0.000	0.000	0.000	0.240	1.052	0.000	0.000	0.257	0.070	0.570	0.000	0.000	0.000	0.000	0.553	1.450	
Common Carp	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.002	
Brown Bullhead	0.010	0.000	0.000	0.150	0.098	0.000	0.258	1.102	0.264	0.239	0.003	0.121	0.345	0.405	0.807	0.079	0.834	4.199	
Goldfish	0.000	0.030	0.461	0.000	0.207	0.228	0.926	0.126	0.489	0.000	0.642	0.000	0.002	0.721	0.003	0.185	0.000	2.168	
Total	3.546	2.412	2.458	1.913	1.505	1.922	13.756	1.999	1.914	1.681	2.322	1.491	1.218	2.979	1.775	1.934	3.411	20.724	

Woods Pond Other Species Captures

	Multi-Pass Runs							Single-Pass Runs											
	1	2	3	4	5	6	Total	1	2	3	4	5	6	7	8	9	10	Total	
Predators																			
Chain Pickerel	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.030	
Redfin Pickerel	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.008	0.008	
Forage																			
Bluegill Hybrid	0.008	0.000	0.000	0.000	0.032	0.000	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Black Crappie	0.059	0.032	0.001	0.053	0.021	0.001	0.167	0.000	0.011	0.007	0.007	0.006	0.000	0.000	0.000	0.001	0.001	0.032	
Bottom																			
Yellow Bullhead	0.000	0.000	0.000	0.033	0.000	0.000	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Total	0.067	0.032	0.001	0.086	0.053	0.001	0.240	0.000	0.011	0.007	0.037	0.006	0.000	0.000	0.000	0.009	0.070		
Total Captures	3.613	2.444	2.459	1.999	1.558	1.923	13.996	1.999	1.925	1.688	2.359	1.497	1.218	2.979	1.775	1.934	3.420	20.794	

Summary of Weight of 10 Single-Pass Samples by Size Class

Reach	Size Class (cm)	n	% of n	Weight (g)	% of Weight
5A	<10	373	33.9%	1,899.5	0.9%
	10-20	342	31.1%	18,488.3	9.1%
	20-30	143	13.0%	28,285.1	13.9%
	30-40	181	16.4%	102,065.3	50.0%
	40-50	59	5.4%	48,687.5	23.9%
	50-60	1	0.1%	1,234.5	0.6%
	60-70	2	0.2%	3,333.0	1.6%
	70-80	0	0.0%	0.0	0.0%
	Total	1101	1	203,993.2	1

Reach	Size Class (cm)	n	% of n	Weight (g)	% of Weight
BW	<10	126	28.7%	1,131.3	1.9%
	10-20	222	50.6%	19,220.7	32.7%
	20-30	64	14.6%	17,832.4	30.3%
	30-40	23	5.2%	16,748.5	28.5%
	40-50	4	0.9%	3,841.0	6.5%
	50-60	0	0.0%	0.0	0.0%
	60-70	0	0.0%	0.0	0.0%
	70-80	0	0.0%	0.0	0.0%
	Total	439	1	58,773.9	1

Reach	Size Class (cm)	n	% of n	Weight (g)	% of Weight
5B	<10	448	34.4%	2,481.2	1.0%
	10-20	479	36.8%	25,107.1	9.6%
	20-30	144	11.1%	30,476.8	11.7%
	30-40	102	7.8%	66,915.5	25.6%
	40-50	125	9.6%	115,489.5	44.2%
	50-60	1	0.1%	1,011.5	0.4%
	60-70	1	0.1%	1,456.0	0.6%
	70-80	3	0.2%	18,175.2	7.0%
	Total	1303	1	261,112.8	1

Reach	Size Class (cm)	n	% of n	Weight (g)	% of Weight
WP	<10	494	44.8%	4,790.9	5.7%
	10-20	448	40.7%	28,523.8	33.7%
	20-30	131	11.9%	31,672.6	37.5%
	30-40	23	2.1%	14,779.5	17.5%
	40-50	6	0.5%	4,771.0	5.6%
	50-60	0	0.0%	0.0	0.0%
	60-70	0	0.0%	0.0	0.0%
	70-80	0	0.0%	0.0	0.0%
	Total	1102	1	84,537.8	1

Reach	Size Class (cm)	n	% of n	Weight (g)	% of Weight
5C	<10	519	34.1%	4,658.4	2.7%
	10-20	713	46.9%	41,092.1	23.5%
	20-30	156	10.3%	35,656.3	20.4%
	30-40	89	5.9%	54,584.0	31.3%
	40-50	43	2.8%	38,576.5	22.1%
	50-60	0	0.0%	0.0	0.0%
	60-70	0	0.0%	0.0	0.0%
	70-80	0	0.0%	0.0	0.0%
	Total	1520	1	174,567.3	1

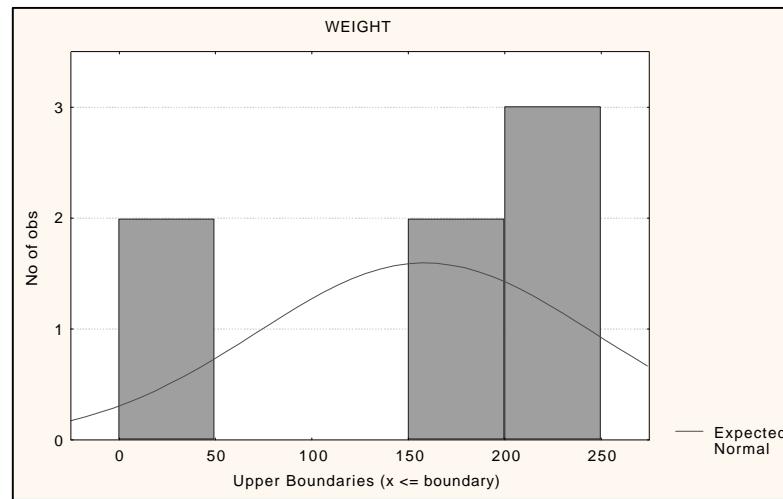
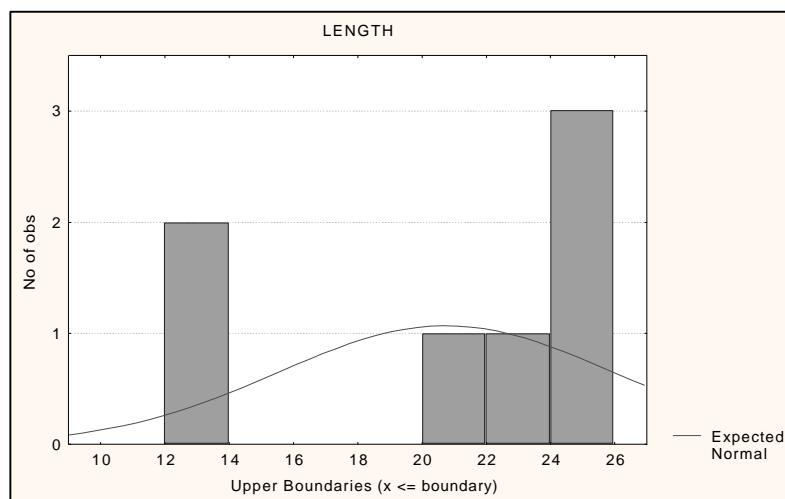
Summary of Weight by Size Class Table

Reach 5A Black Crappie Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	1	24.00				24.0	24.0				
WEIGHT (g)	1	301.50				301.5	301.5				

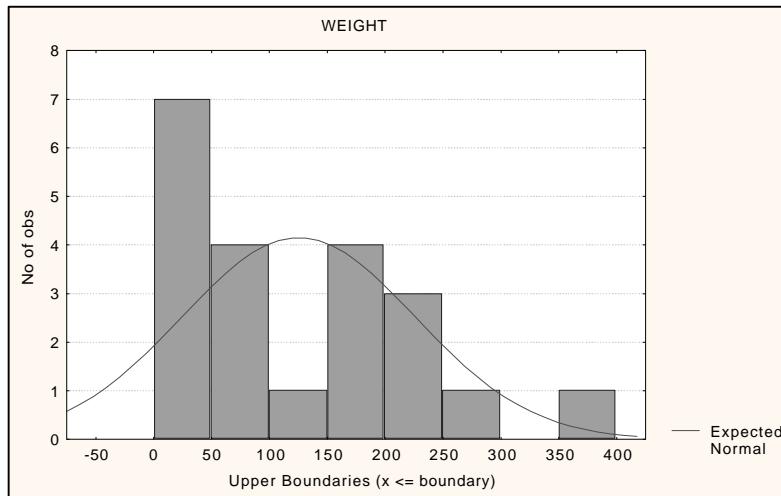
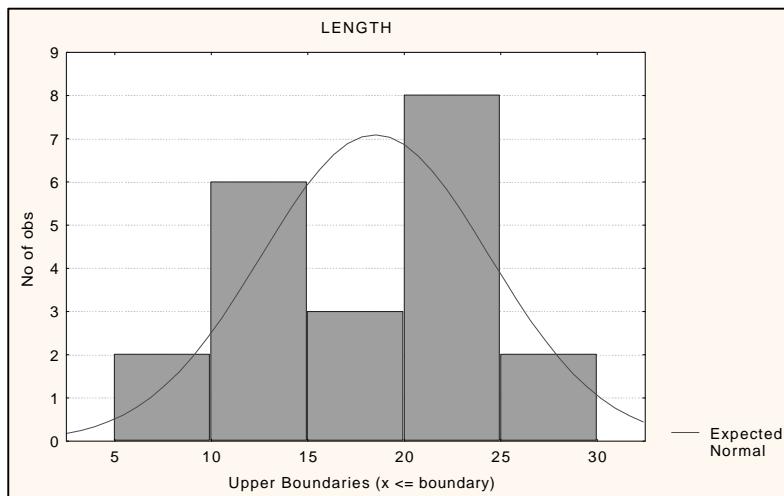
Reach 5B Black Crappie Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Standard		Error	Skewness	Kurtosis
			-95.000%	+95.000%	Median	Minimum			
LENGTH (cm)	7	20.74	15.91	25.58	23.0	12.8	25.3	5.2262	1.9753 -0.9588 -1.0460
WEIGHT (g)	7	158.64	77.74	239.54	195.5	30.0	234.0	87.4727	33.0616 -0.9950 -1.0462



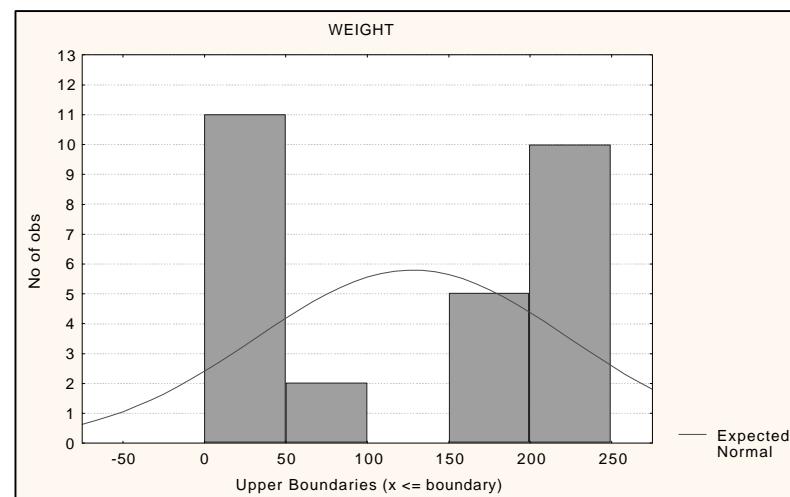
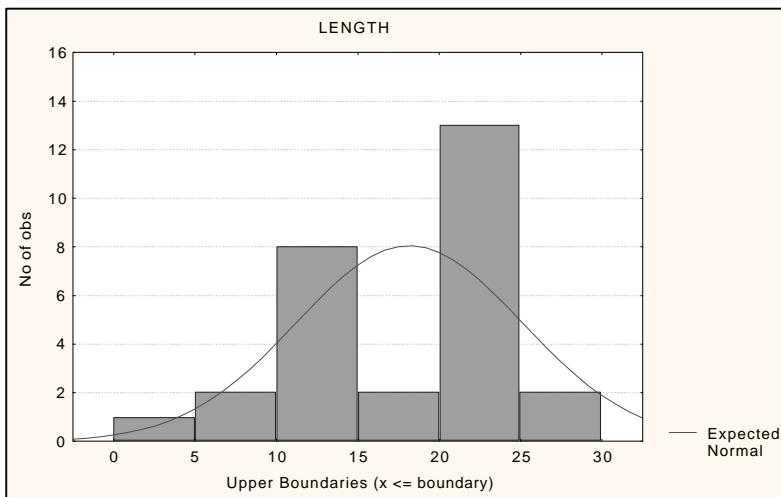
Reach 5C Black Crappie Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	21	18.51	15.82	21.19	17.6	9.7	28.6	5.9051	1.2886	-0.0872	-1.3367
WEIGHT (g)	21	125.22	79.30	171.14	82.5	11.0	365.0	100.8790	22.0136	0.6576	-0.3754



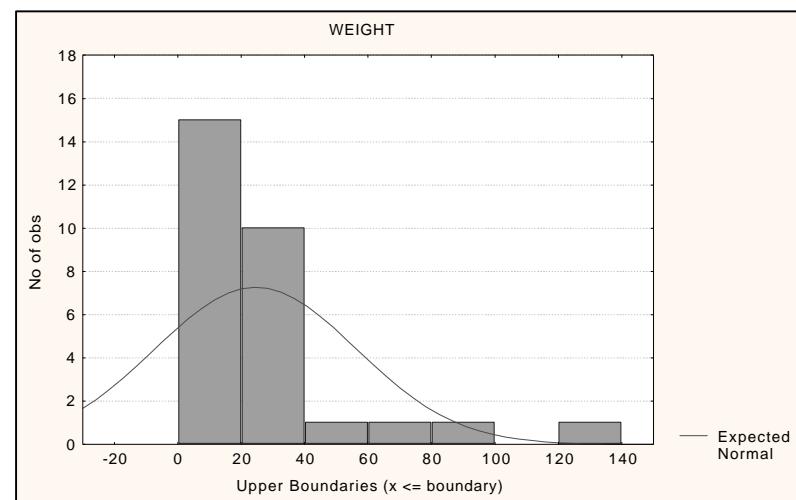
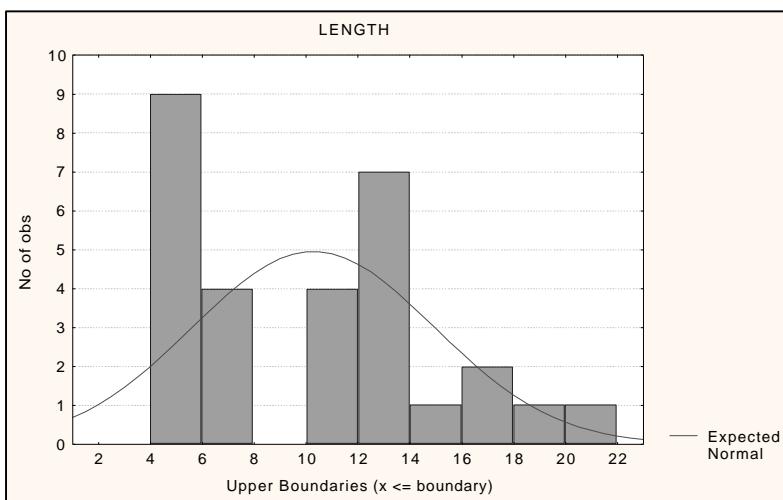
Backwaters Black Crappie Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Standard		Error	Skewness	Kurtosis
			-95.000%	+95.000%	Median	Minimum			
LENGTH (cm)	28	18.16	15.47	20.85	22.7	4.6	25.5	6.9398	1.3115 -0.6389 -0.9901
WEIGHT (g)	28	127.67	90.31	165.03	173.5	1.0	247.5	96.3462	18.2077 -0.1122 -1.8982



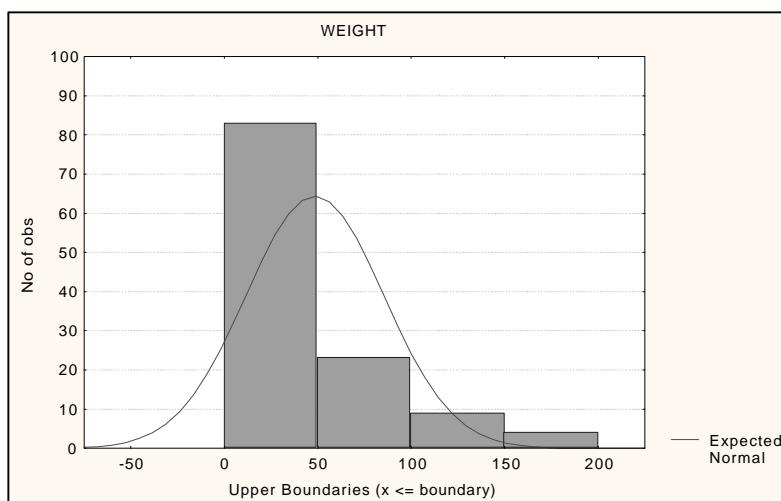
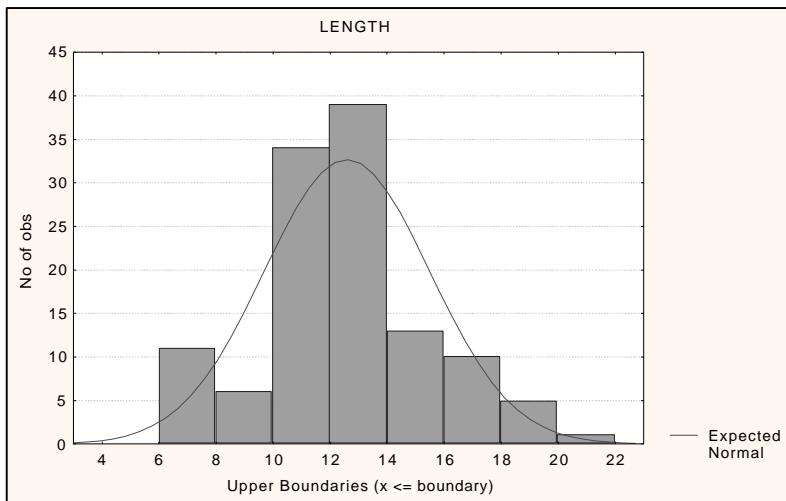
Woods Pond Black Crappie Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Confid.		Standard				
			-95.000%	+95.000%	Median	Minimum	Maximum	Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	29	10.28	8.50	12.06	11.4	5.1	20.2	4.6698	0.8672	0.3983	-1.0266
WEIGHT (g)	29	24.55	12.45	36.66	19.5	1.0	136.9	31.8240	5.9096	2.1934	5.3053



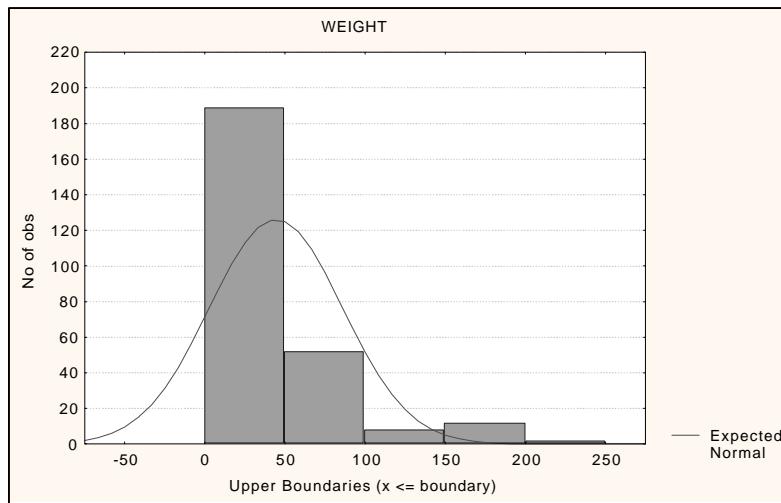
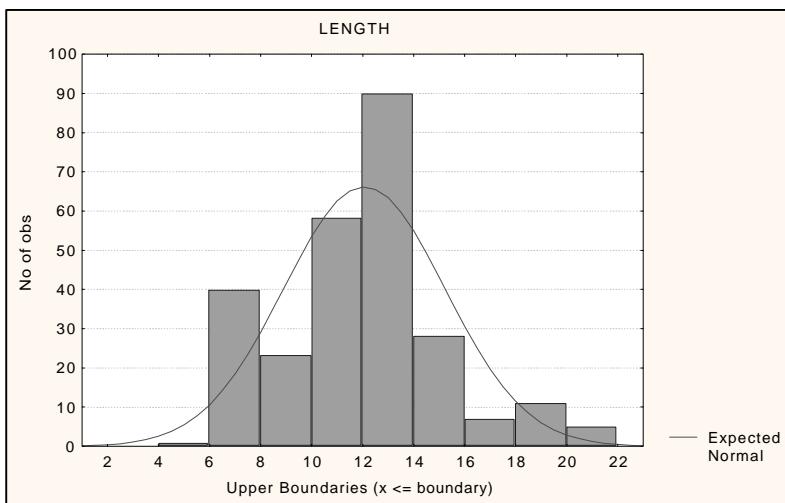
Reach 5A Bluegill Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	119	12.59	12.06	13.12	12.5	6.2	20.1	2.9079	0.2666	0.2223	0.2579
WEIGHT (g)	119	48.44	41.75	55.13	39.0	4.5	188.0	36.8737	3.3802	1.6309	2.7416



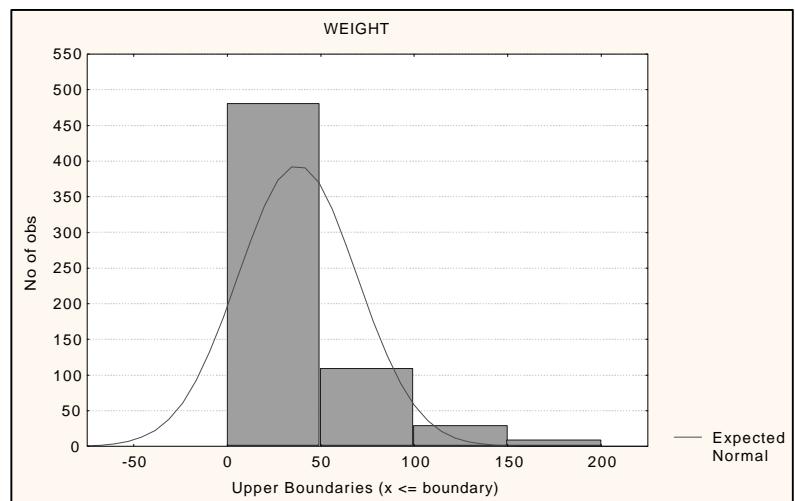
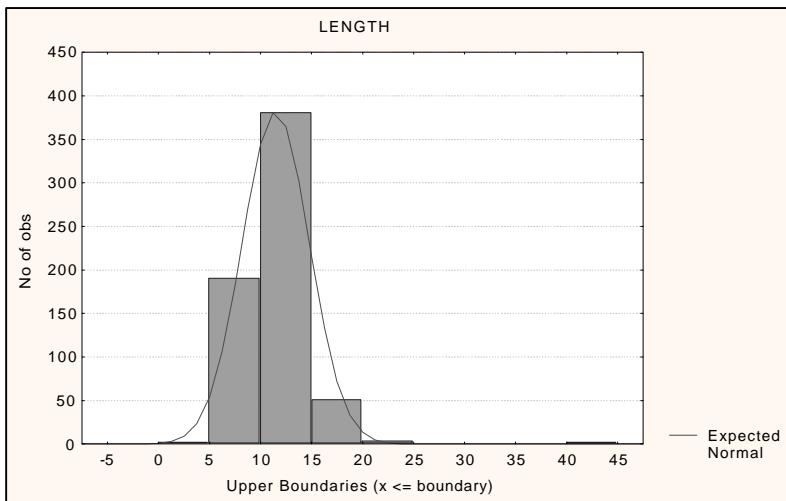
Reach 5B Bluegill Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Standard					
			-95.000%	+95.000%		Minimum	Maximum	Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	263	12.07	11.68	12.45	12.2	5.4	21.0	3.1706	0.1955	0.4317	0.4216
WEIGHT (g)	263	44.35	39.30	49.41	35.0	2.0	212.0	41.6080	2.5657	2.1659	4.9926



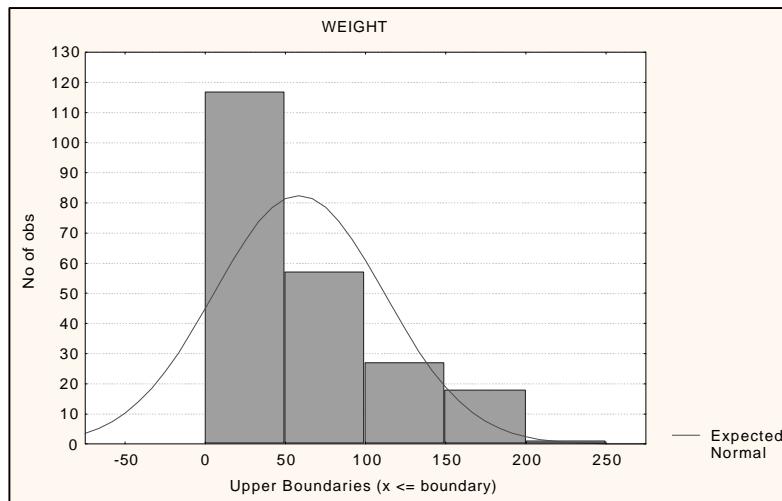
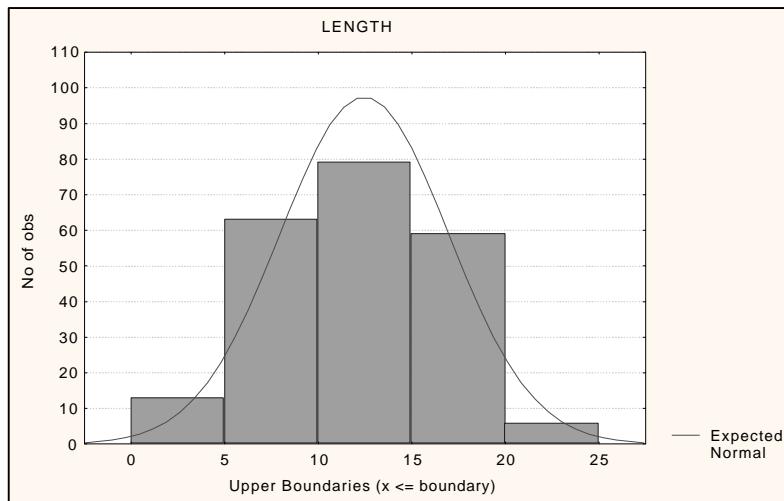
Reach 5C Bluegill Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	629	11.50	11.24	11.76	11.7	2.5	40.3	3.2858	0.1310	1.2775	9.0333
WEIGHT (g)	629	37.59	35.09	40.08	32.0	0.5	200.0	31.8647	1.2705	1.8739	4.6642



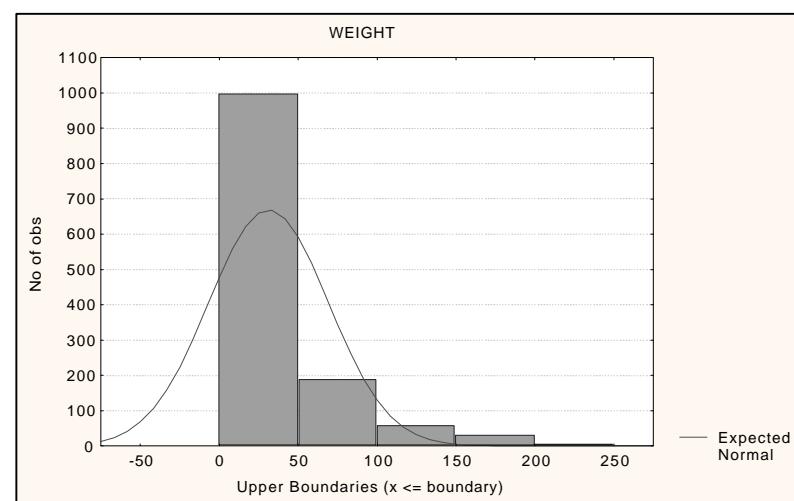
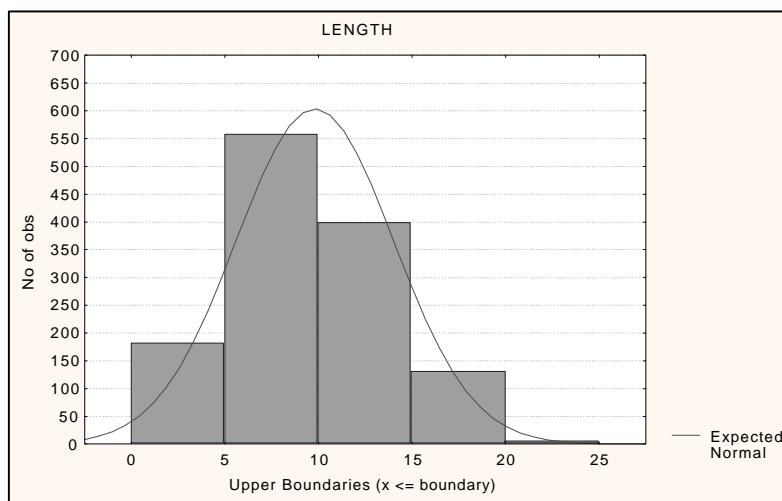
Backwaters Bluegill Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	220	12.46	11.86	13.06	13.1	2.5	20.6	4.5071	0.3039	-0.2516	-0.6693
WEIGHT (g)	220	58.52	51.45	65.59	46.8	0.2	204.0	53.2161	3.5878	0.9843	0.0162



Woods Pond Bluegill Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Standard						
			-95.000%	+95.000%	Median	Minimum	Maximum	Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	1274	9.81	9.57	10.04	9.0	2.0	21.1	4.2119	0.1180	0.3027	-0.5070
WEIGHT (g)	1274	31.23	29.14	33.32	14.0	0.1	206.0	37.9894	1.0643	1.9339	3.7752

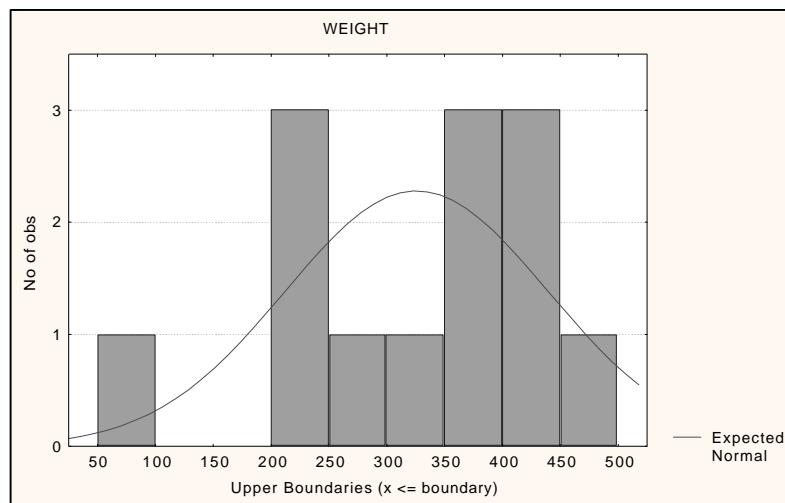
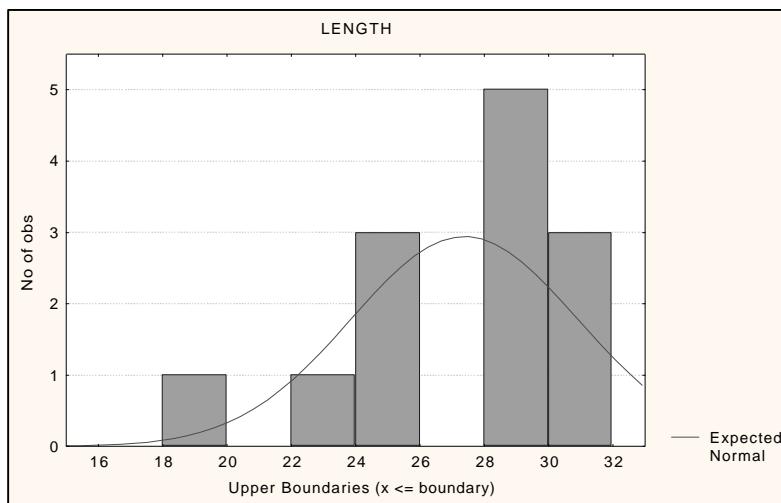


Reach 5A Brown Bullhead Length-Weight Descriptive Statistics

Reach 5B Brown Bullhead Length-Weight Descriptive Statistics

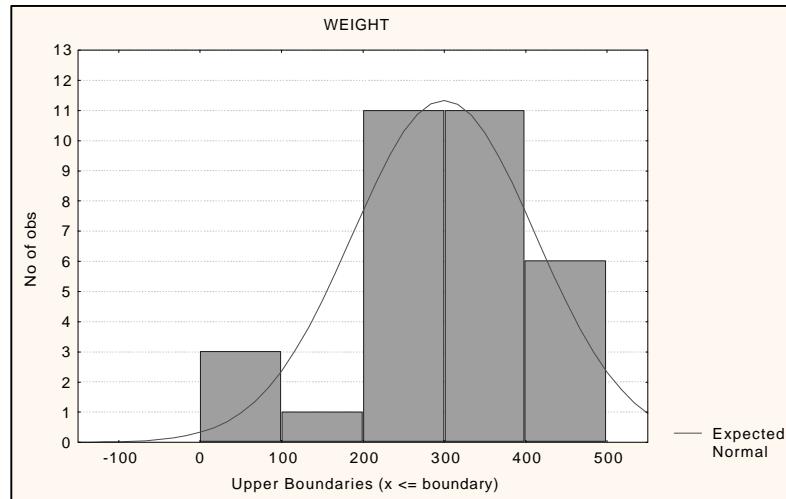
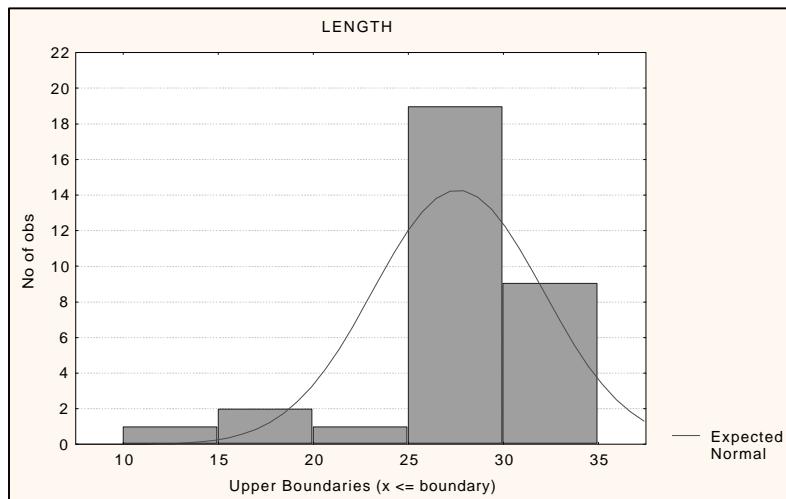
Reach 5C Brown Bullhead Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	13	27.38	25.25	29.51	28.5	19.1	31.0	3.5261	0.9780	-1.2596	1.1203
WEIGHT (g)	13	325.70	256.97	394.43	361.5	93.5	496.5	113.7356	31.5446	-0.5331	-0.2666



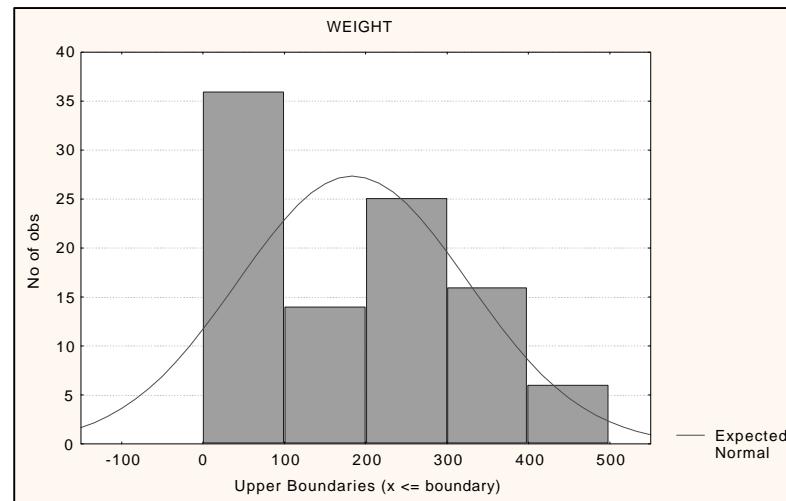
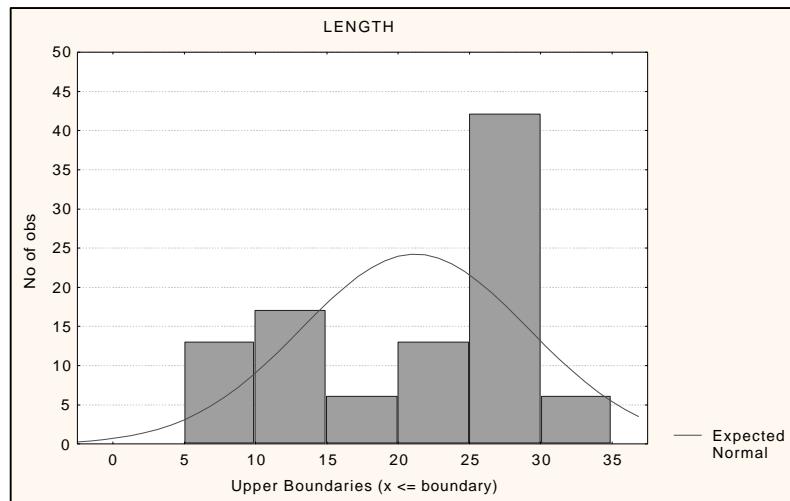
Backwaters Brown Bullhead Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard			
			-95.000%	+95.000%				Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	32	27.61	26.00	29.22	28.4	14.0	33.6	4.4718	0.7905	-1.7722	3.2972
WEIGHT (g)	32	299.45	258.85	340.06	307.0	31.0	496.0	112.6193	19.9085	-0.6040	0.7102



Woods Pond Brown Bullhead Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	97	21.18	19.57	22.79	25.0	5.7	32.5	7.9883	0.8111	-0.5158	-1.2674
WEIGHT (g)	97	184.19	155.68	212.70	198.5	3.2	491.0	141.4399	14.3610	0.1482	-1.2134



Reach 5A Brown Trout Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	1	24.00				24.0	24.0				
WEIGHT (g)	1	225.00				225.0	225.0				

Reach 5B Brown Trout Length-Weight Descriptive Statistics

Reach 5C Brown Trout Length-Weight Descriptive Statistics

Backwaters Brown Trout Length-Weight Descriptive Statistics

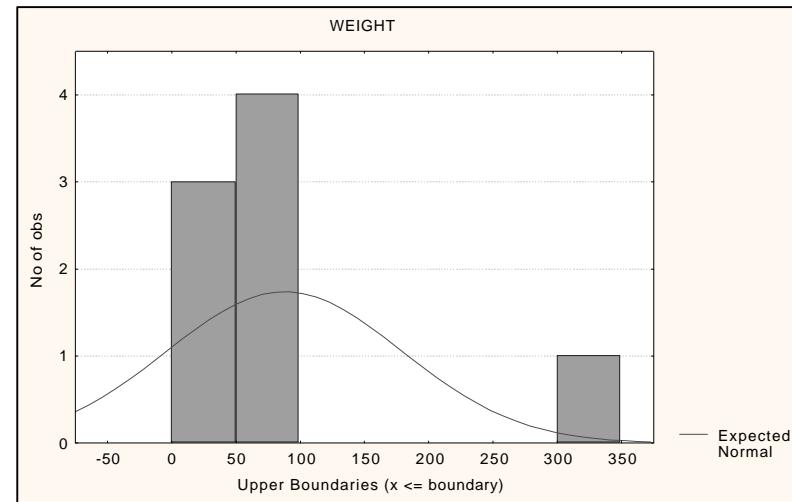
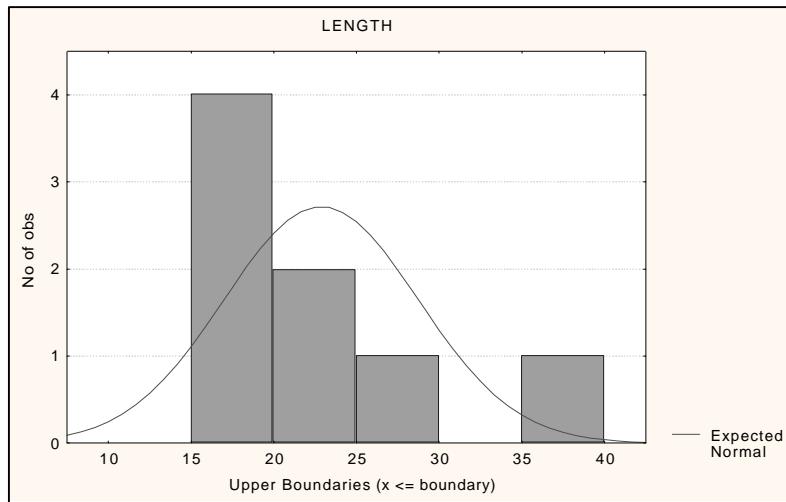
Woods Pond Brown Trout Length-Weight Descriptive Statistics

Reach 5A Chain Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	2	32.80	-2.78	68.38	32.8	30.0	35.6	3.9598	2.8000		
WEIGHT (g)	2	246.00	-706.97	1198.97	246.0	171.0	321.0	106.0660	75.0000		

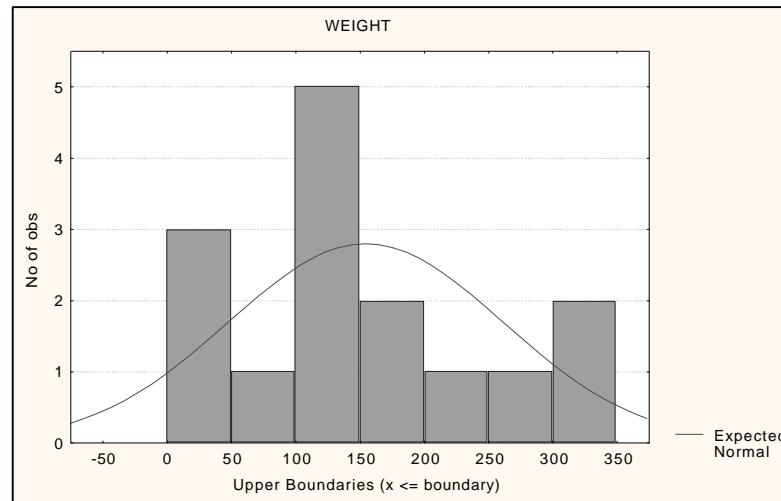
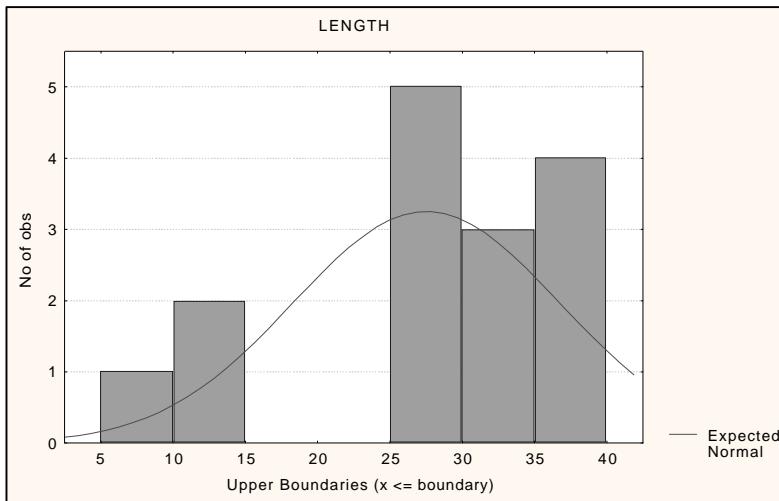
Reach 5B Chain Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	8	22.86	17.95	27.78	21.9	16.5	35.1	5.8771	2.0779	1.3542	2.1991
WEIGHT (g)	8	87.69	10.95	164.43	62.3	23.0	308.0	91.7905	32.4528	2.4991	6.6244



Reach 5C Chain Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	15	27.51	22.41	32.60	28.9	8.8	37.0	9.2006	2.3756	-1.1171	0.1904
WEIGHT (g)	15	154.34	95.16	213.52	139.0	3.0	339.0	106.8667	27.5929	0.2859	-0.5138



Backwaters Chain Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard		
			-95.000%	+95.000%				Std.Dev.	Error	Skewness
LENGTH (cm)	1	40.10				40.1	40.1			
WEIGHT (g)	1	371.50				371.5	371.5			

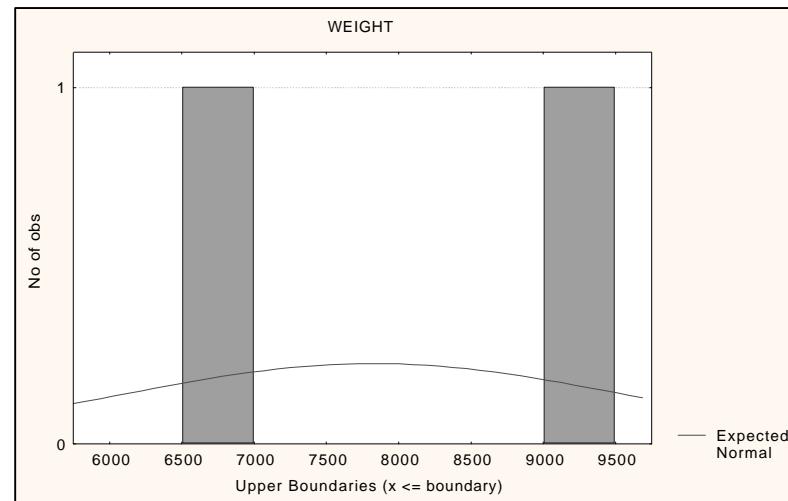
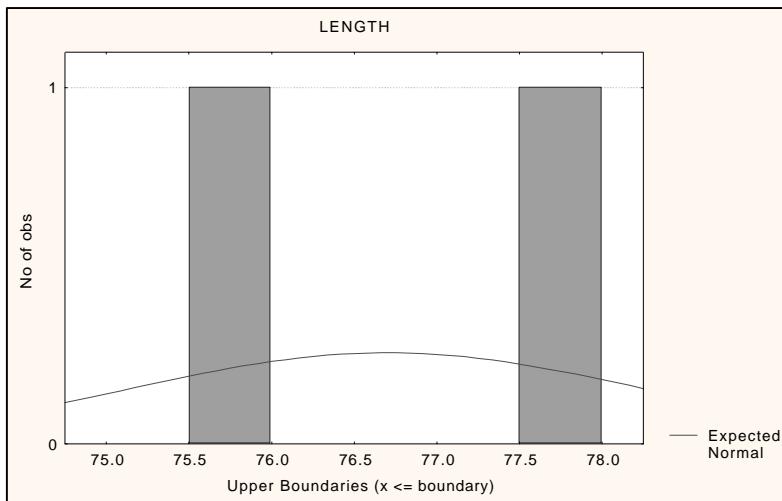
Woods Pond Chain Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	1	29.30				29.3	29.3				
WEIGHT (g)	1	134.50				134.5	134.5				

Reach 5A Common Carp Length-Weight Descriptive Statistics

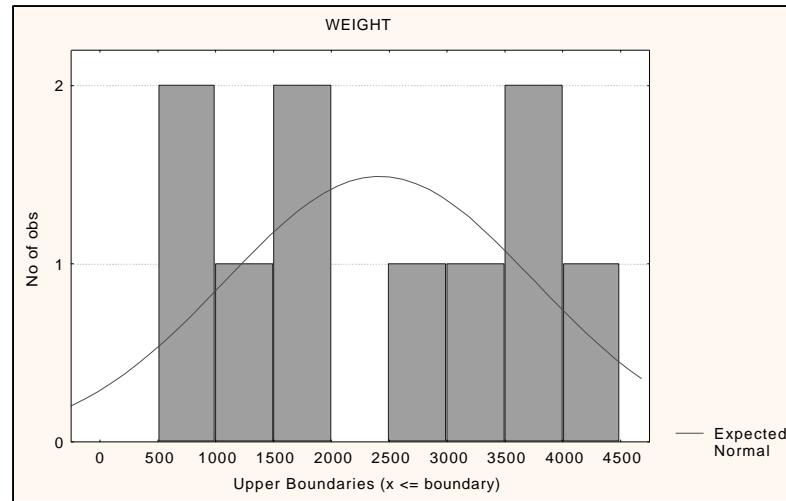
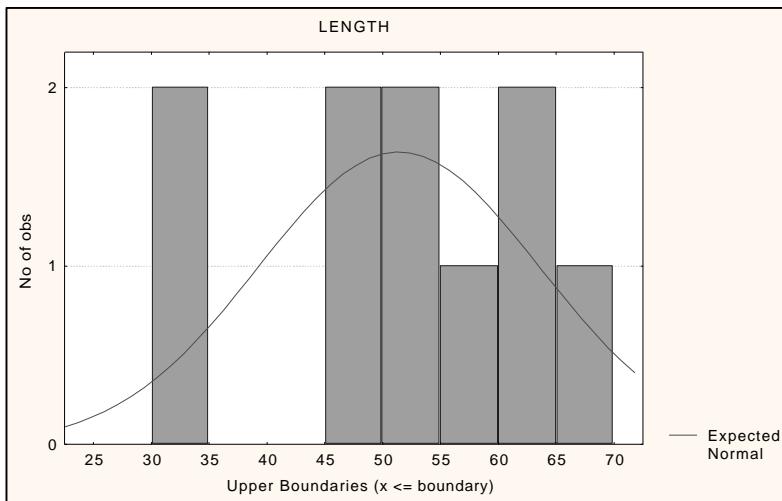
Reach 5B Common Carp Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	2	76.70	62.72	90.68	76.7	75.6	77.8	1.5556	1.1000		
WEIGHT (g)	2	7824.60	-8025.12	23674.32	7824.6	6577.2	9072.0	1764.0900	1247.4000		



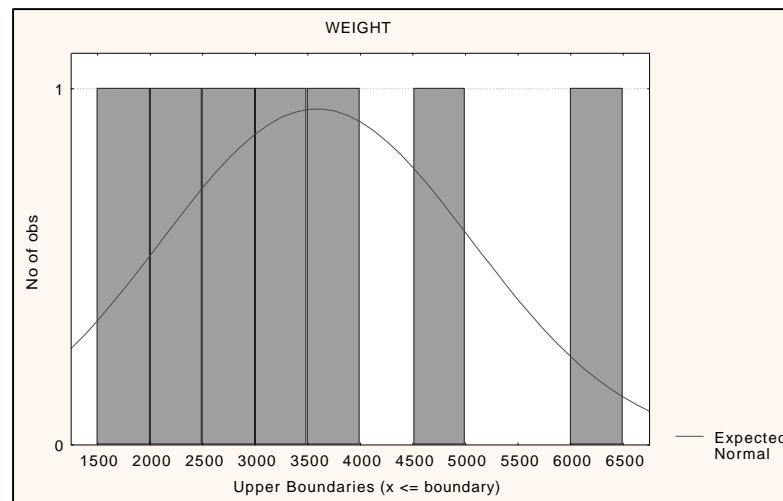
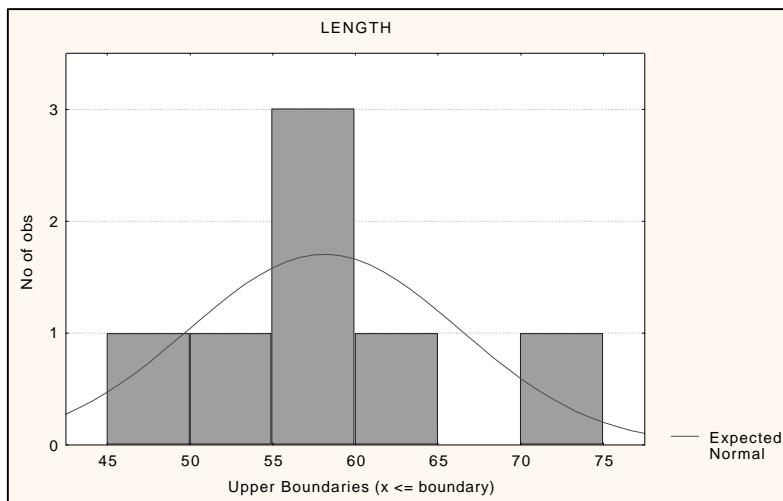
Reach 5C Common Carp Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	10	51.39	42.69	60.09	52.5	31.0	66.4	12.1652	3.8470	-0.6780	-0.5048
WEIGHT (g)	10	2417.21	1460.88	3373.54	2314.3	578.0	4216.5	1336.8563	422.7511	-0.0243	-1.6587



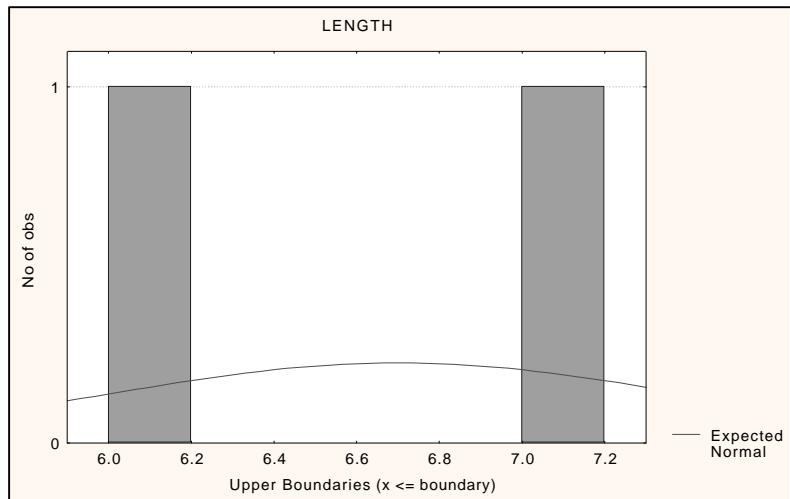
Backwaters Common Carp Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	7	58.11	50.54	65.69	56.5	48.0	74.0	8.1946	3.0973	1.1716	2.4139
WEIGHT (g)	7	3582.71	2215.06	4950.37	3360.0	1995.0	6160.0	1478.7885	558.9295	0.8567	0.1312



Woods Pond Common Carp Length-Weight Descriptive Statistics

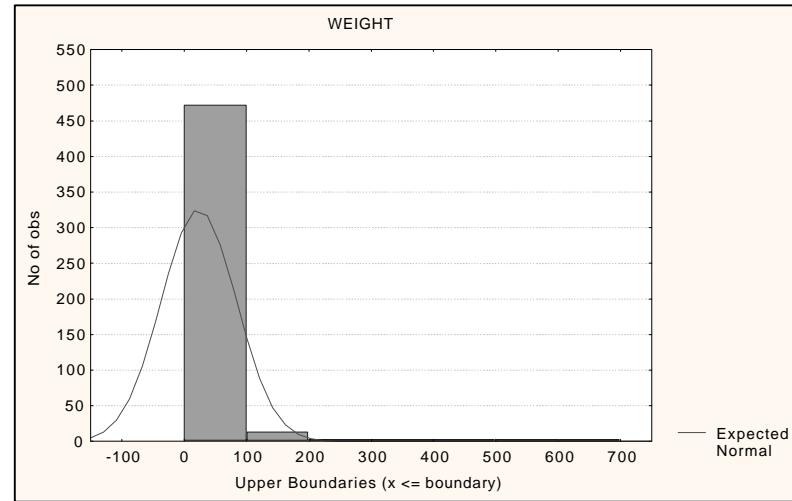
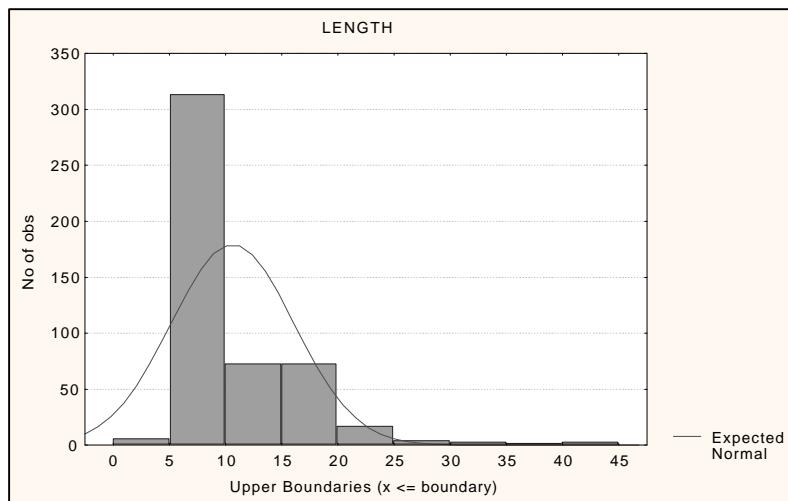
Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	2	6.70	0.35	13.05	6.7	6.2	7.2	0.7071	0.5000		
WEIGHT (g)	2	5.00			5.0	5.0	5.0	0.0000	0.0000		



Note: Since the weight variable has no variance
a normal distribution can't be plotted.

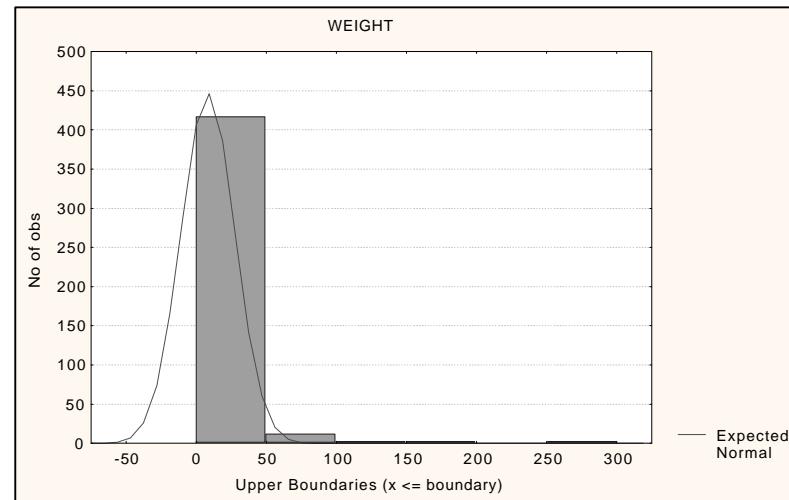
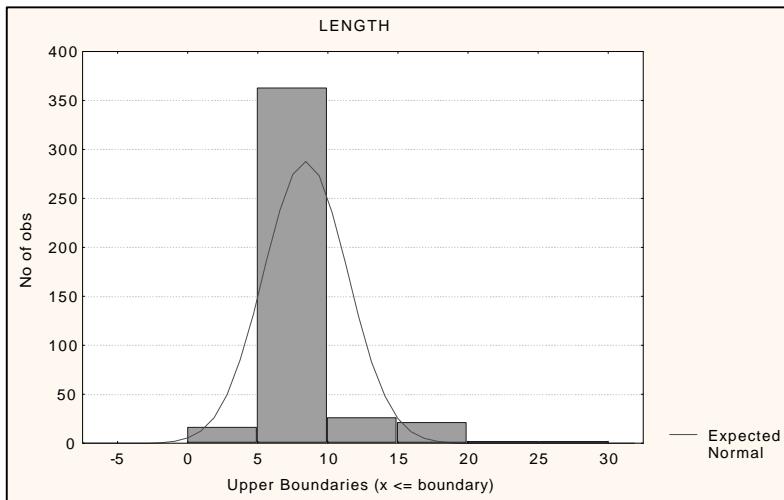
Reach 5A Cyprinids Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	492	10.62	10.14	11.11	8.4	4.2	40.6	5.4792	0.2470	2.0237	5.4861
WEIGHT (g)	492	23.60	18.26	28.94	5.0	0.5	691.0	60.2657	2.7170	6.8085	57.5093



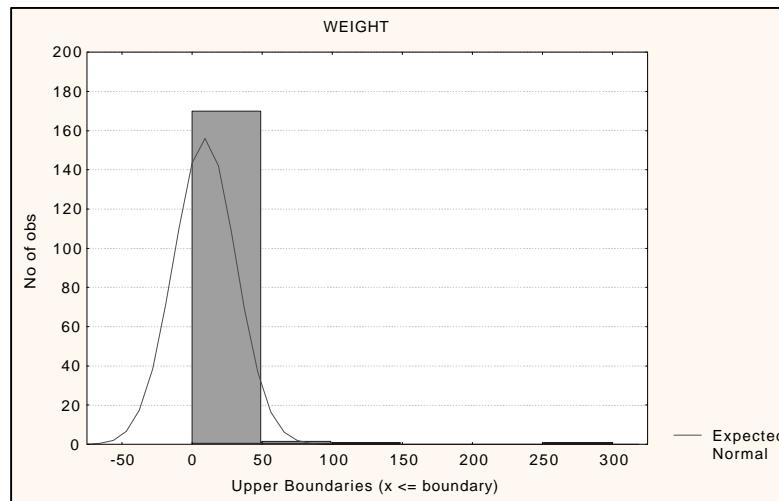
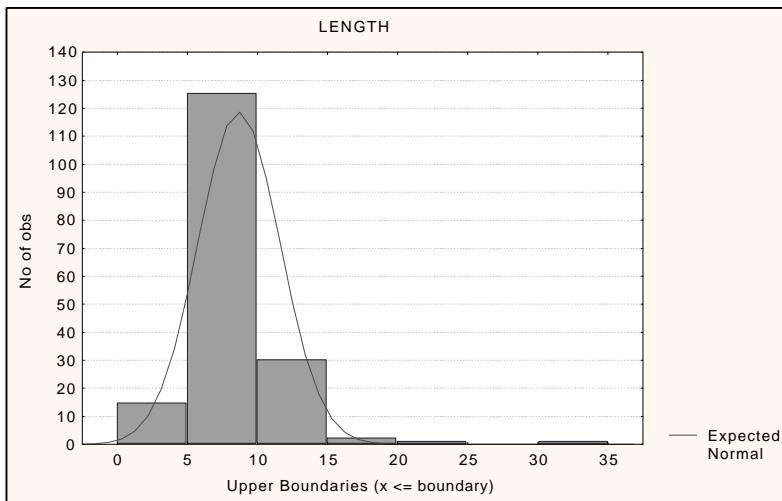
Reach 5B Cyprinids Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	431	8.41	8.13	8.70	8.0	2.3	28.5	2.9857	0.1438	2.7970	10.7784
WEIGHT (g)	431	8.37	6.55	10.20	4.5	0.1	270.5	19.2445	0.9270	8.3007	92.5252



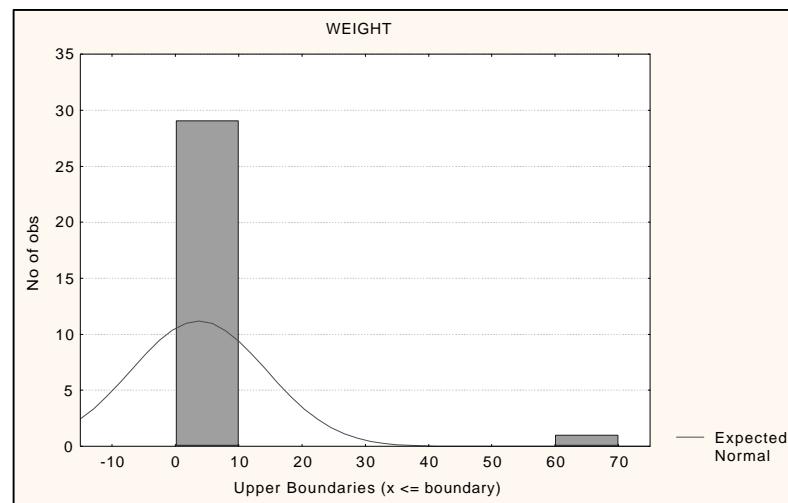
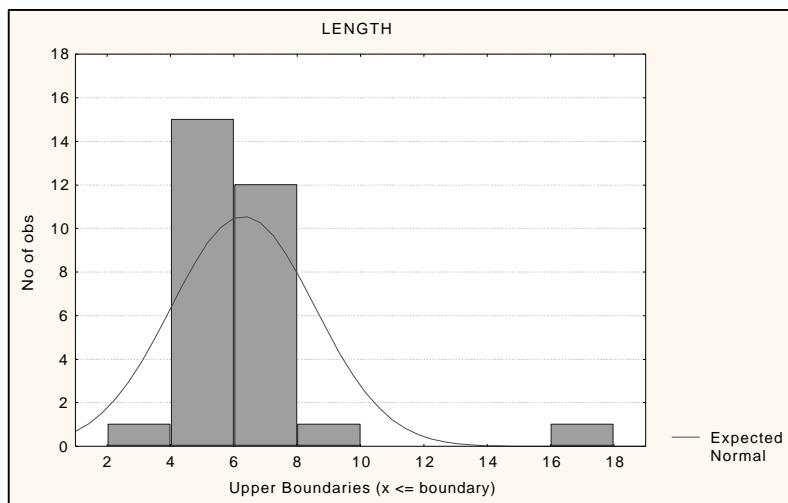
Reach 5C Cyprinids Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	174	8.68	8.24	9.12	9.1	3.1	30.8	2.9246	0.2217	2.8563	19.7018
WEIGHT (g)	174	9.09	5.76	12.42	6.5	0.5	269.6	22.2466	1.6865	9.9560	111.6678



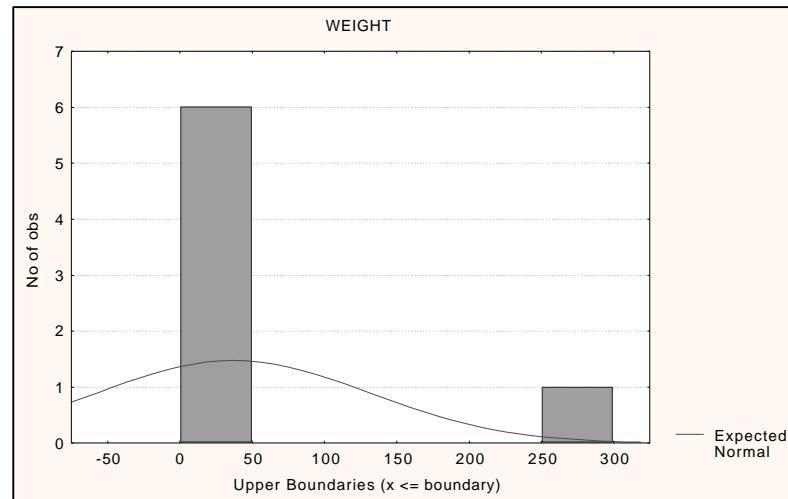
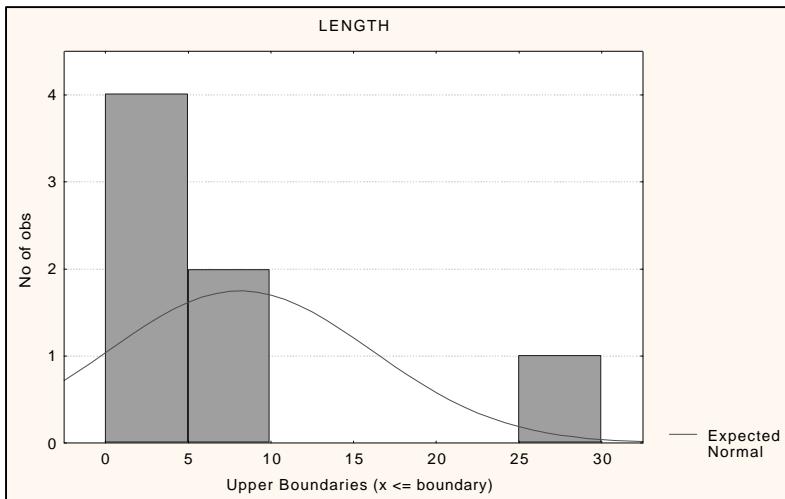
Backwaters Cyprinids Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard			
			-95.000%	+95.000%				Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	30	6.29	5.44	7.14	6.0	3.5	17.2	2.2666	0.4138	4.0093	19.6110
WEIGHT (g)	30	3.70	-0.30	7.69	1.5	0.3	60.2	10.7057	1.9546	5.4219	29.5804



Woods Pond Cyprinids Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	7	8.14	0.76	15.53	4.8	4.2	26.1	7.9833	3.0174	2.5579	6.6357
WEIGHT (g)	7	37.00	-50.48	124.48	1.0	0.5	251.5	94.5885	35.7511	2.6454	6.9986



Reach 5A Goldfish Length-Weight Descriptive Statistics

Reach 5B Goldfish Length-Weight Descriptive Statistics

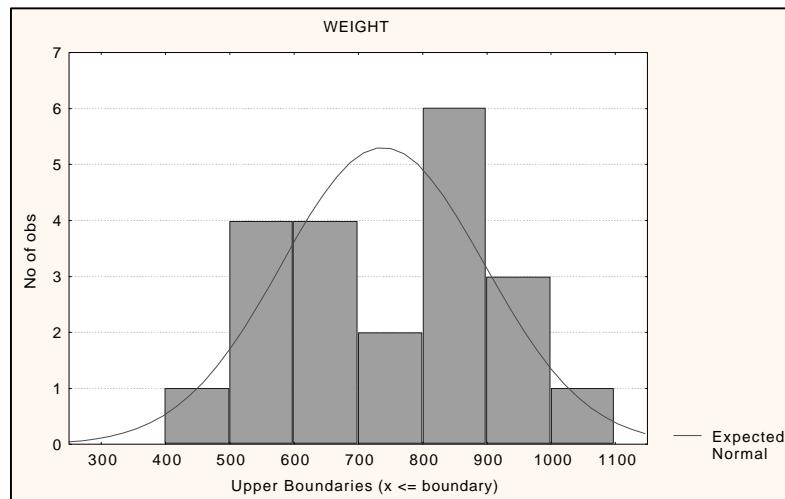
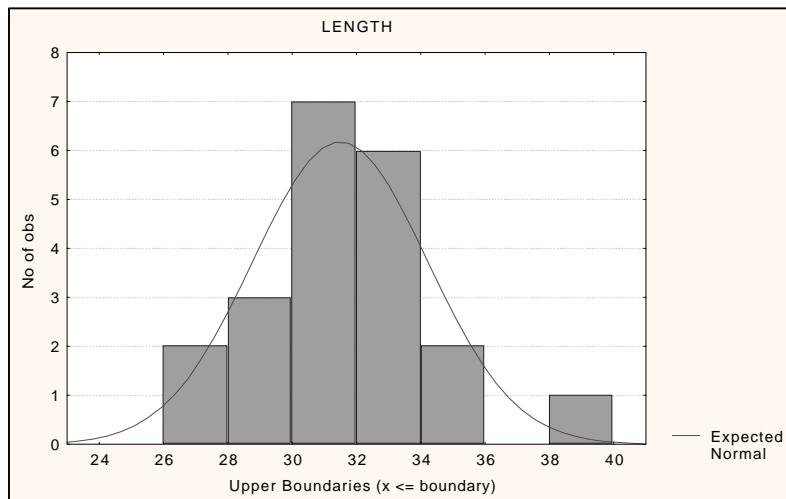
Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	1	33.00				33.0	33.0				
WEIGHT (g)	1	827.00				827.0	827.0				

Reach 5C Goldfish Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	1	33.20				33.2	33.2				
WEIGHT (g)	1	897.50				897.5	897.5				

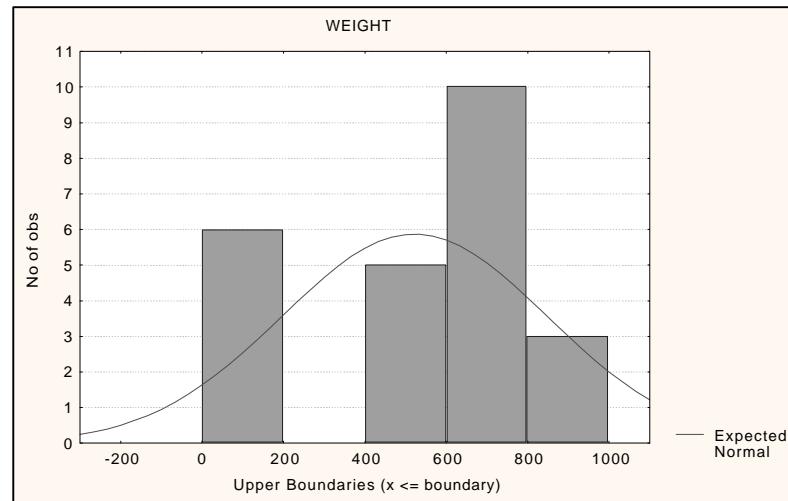
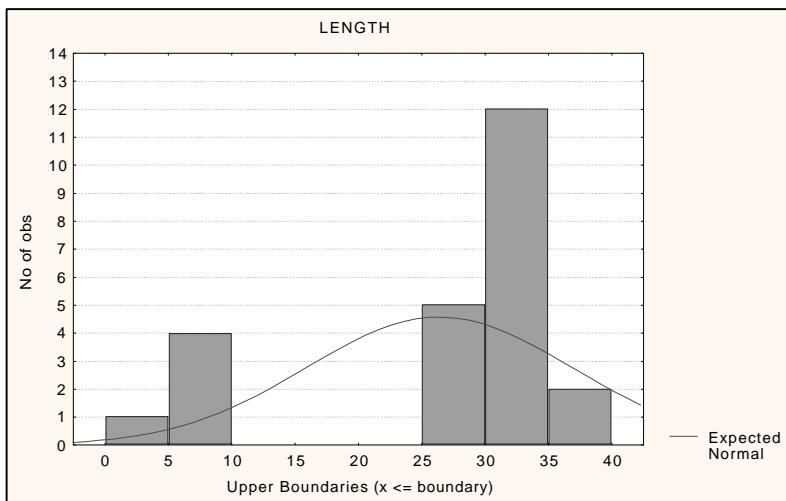
Backwaters Goldfish Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard			
			-95.000%	+95.000%				Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	21	31.49	30.26	32.73	31.1	26.3	38.2	2.7125	0.5919	0.4231	0.7583
WEIGHT (g)	21	738.33	666.39	810.28	762.5	442.5	1002.0	158.0486	34.4890	-0.1964	-1.0045



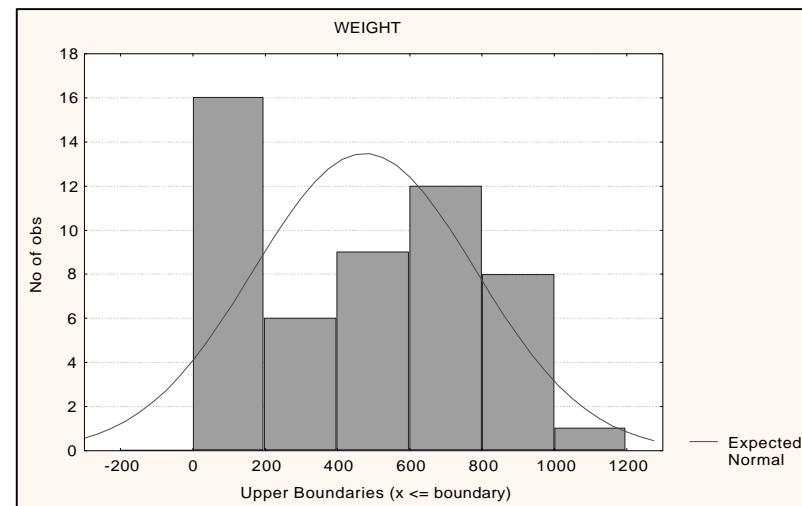
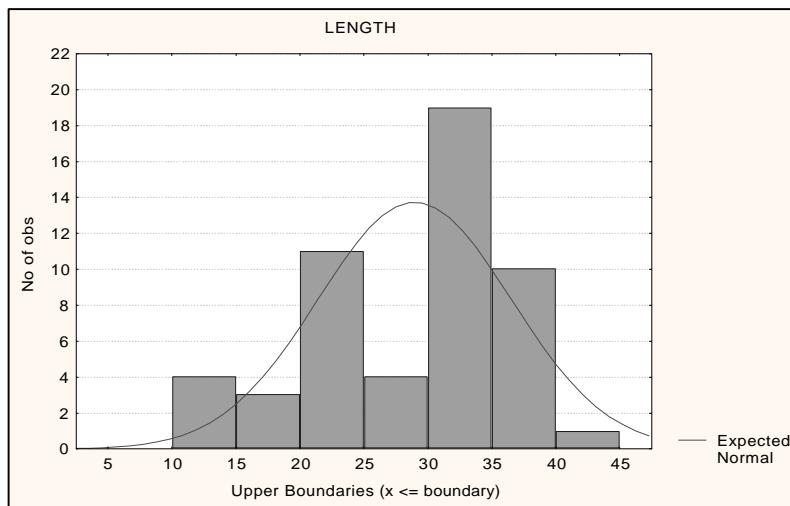
Woods Pond Goldfish Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	24	26.38	21.96	30.79	31.0	5.0	36.1	10.4538	2.1339	-1.4025	0.2317
WEIGHT (g)	24	521.79	384.06	659.53	609.8	1.7	985.0	326.1798	66.5812	-0.6033	-0.9105



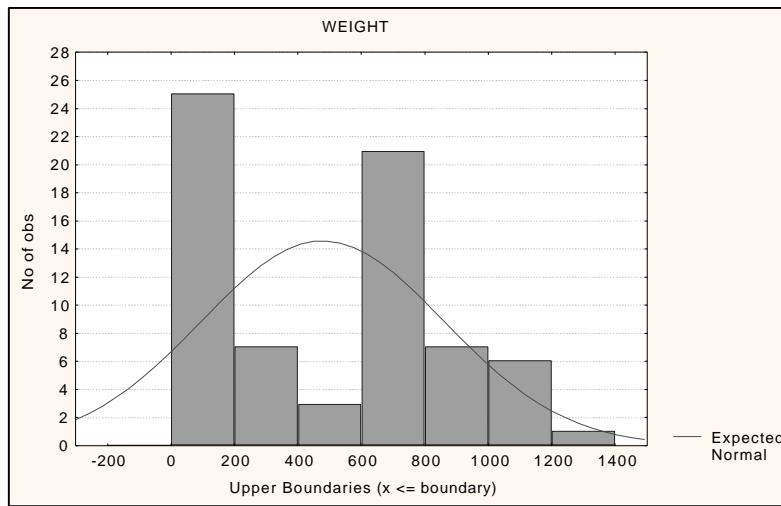
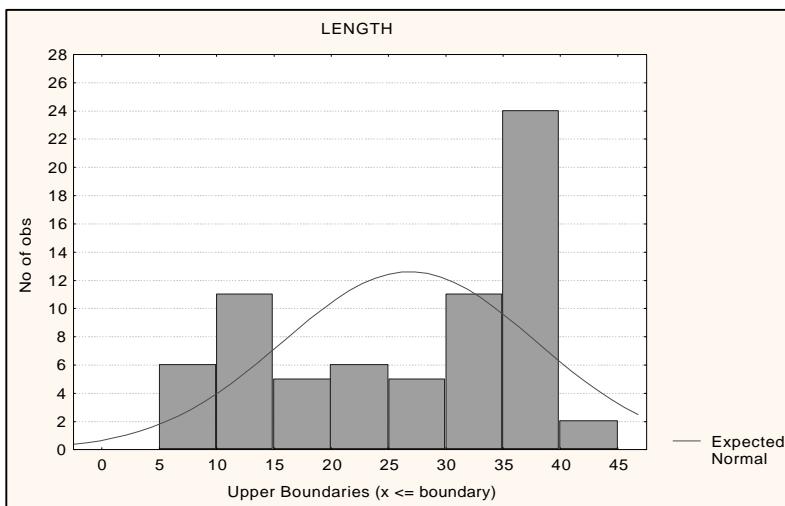
Reach 5A Largemouth Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	52	28.96	26.86	31.07	32.5	12.4	41.9	7.5567	1.0479	-0.6870	-0.5477
WEIGHT (g)	52	475.03	389.36	560.69	538.0	24.5	1132.0	307.7049	42.6710	0.1052	-1.2038



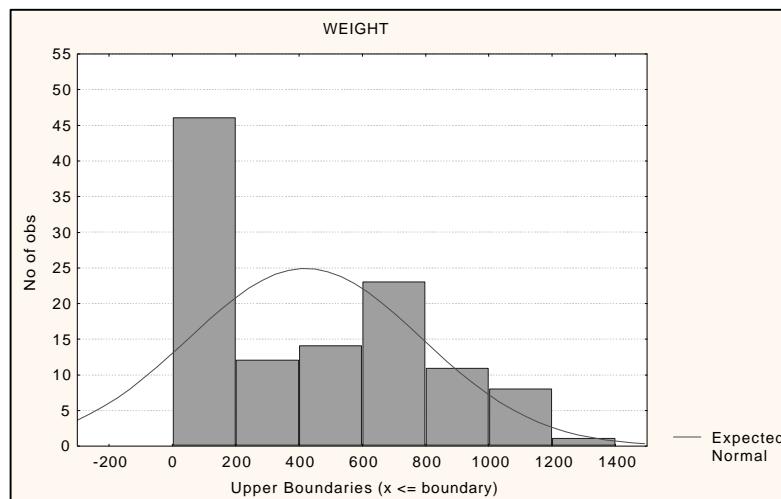
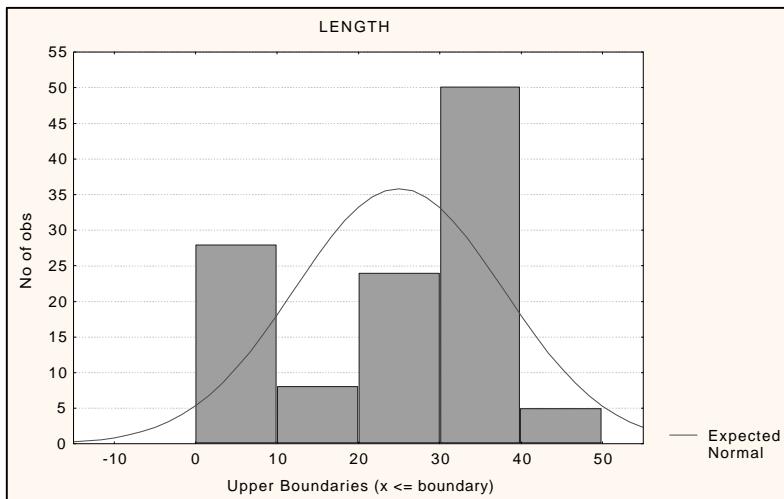
Reach 5B Largemouth Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Standard					
			-95.000%	+95.000%		Minimum	Maximum	Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	70	26.83	24.19	29.47	32.6	5.1	41.2	11.0742	1.3236	-0.5687	-1.1183
WEIGHT (g)	70	478.16	386.83	569.49	602.3	1.5	1245.0	383.0295	45.7808	0.1078	-1.4377



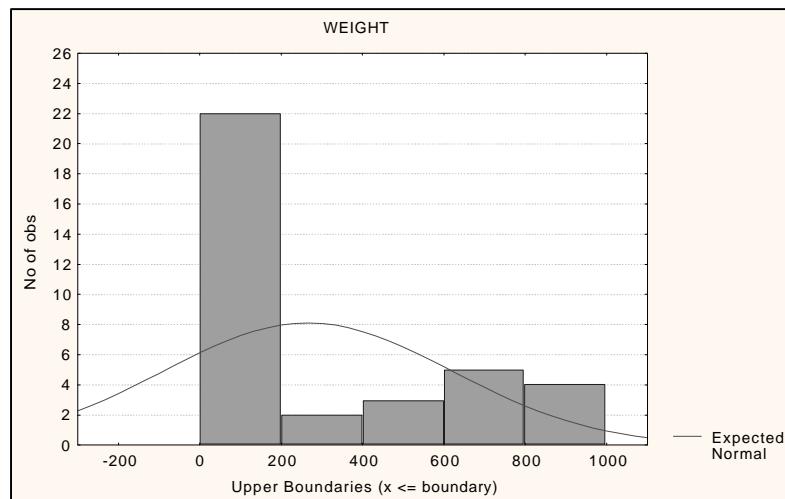
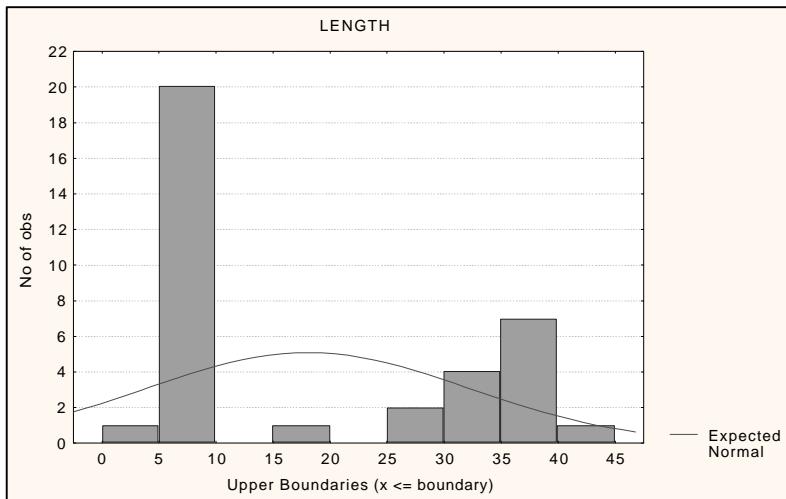
Reach 5C Largemouth Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Standard					
			-95.000%	+95.000%		Minimum	Maximum	Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	115	24.95	22.59	27.32	29.5	3.6	47.6	12.8063	1.1942	-0.4637	-1.2765
WEIGHT (g)	115	420.02	352.02	488.03	361.5	1.0	1206.5	368.1193	34.3273	0.3674	-1.1523



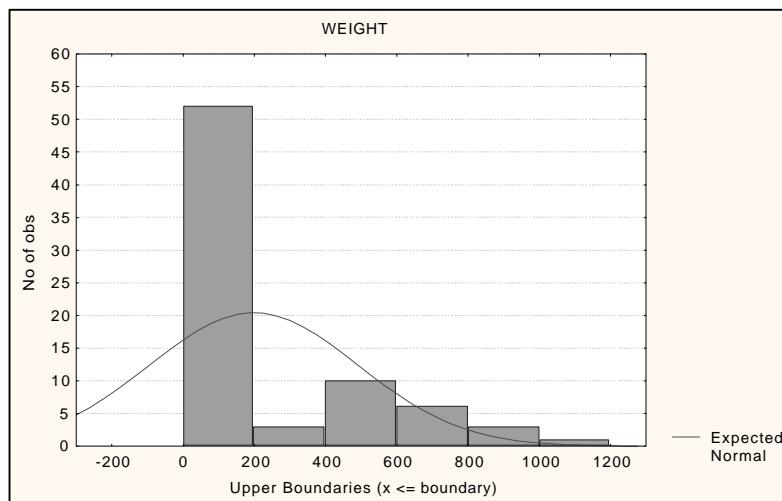
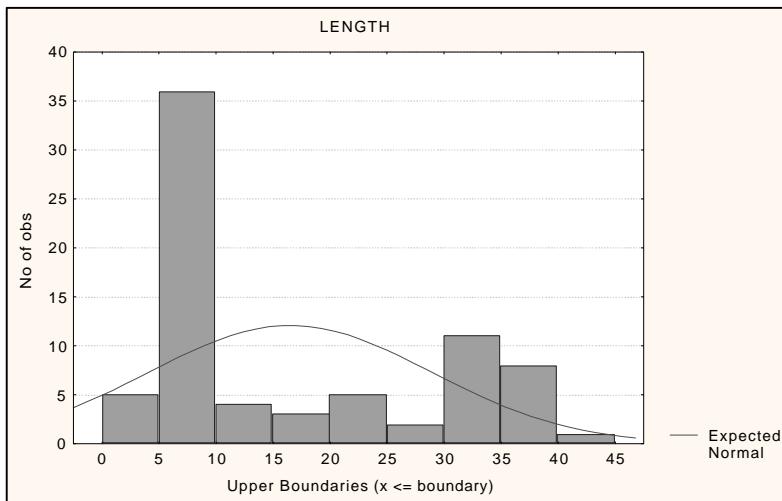
Backwaters Largemouth Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard			
			-95.000%	+95.000%				Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	36	18.05	13.27	22.82	7.8	5.0	40.2	14.1048	2.3508	0.5254	-1.6853
WEIGHT (g)	36	265.50	145.63	385.37	6.9	1.5	999.0	354.2751	59.0458	0.8753	-0.8728



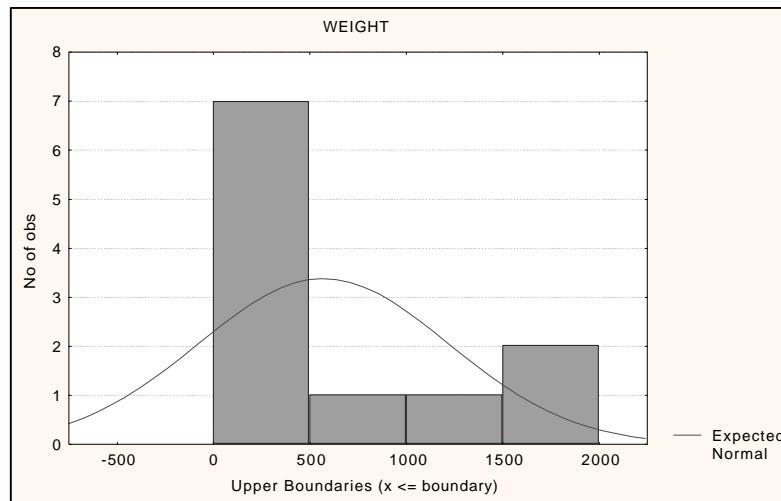
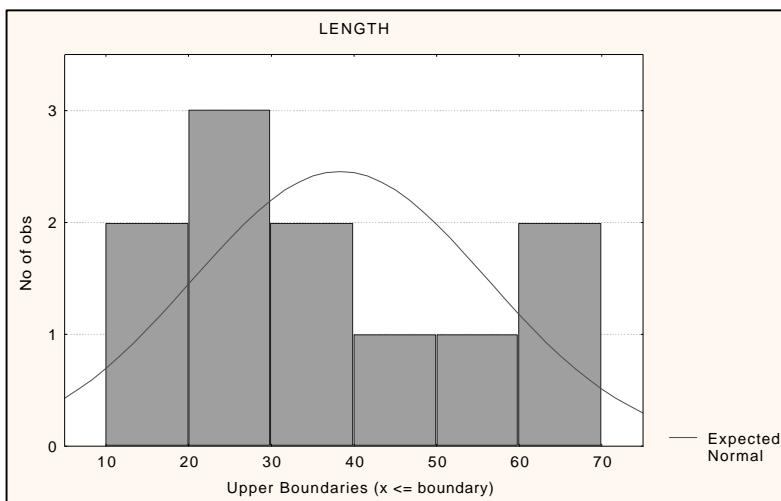
Woods Pond Largemouth Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard			
			-95.000%	+95.000%				Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	75	16.50	13.66	19.35	9.1	4.2	40.3	12.3731	1.4287	0.6602	-1.2918
WEIGHT (g)	75	198.66	131.22	266.10	9.0	1.0	1192.0	293.1145	33.8459	1.3419	0.7747



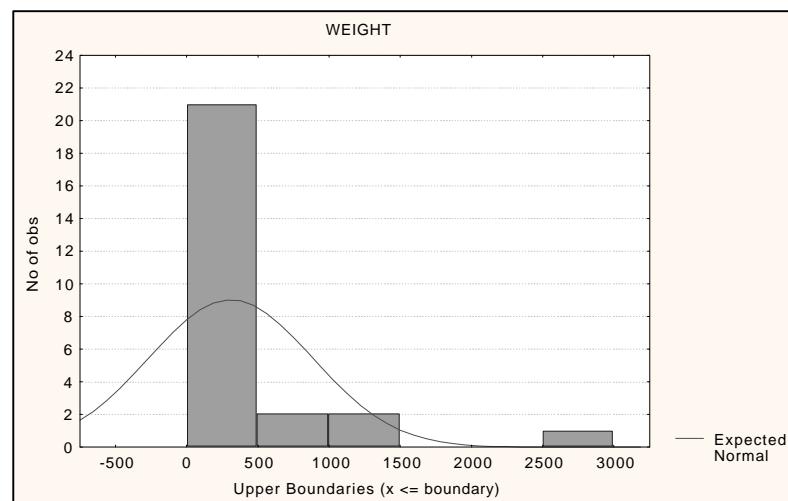
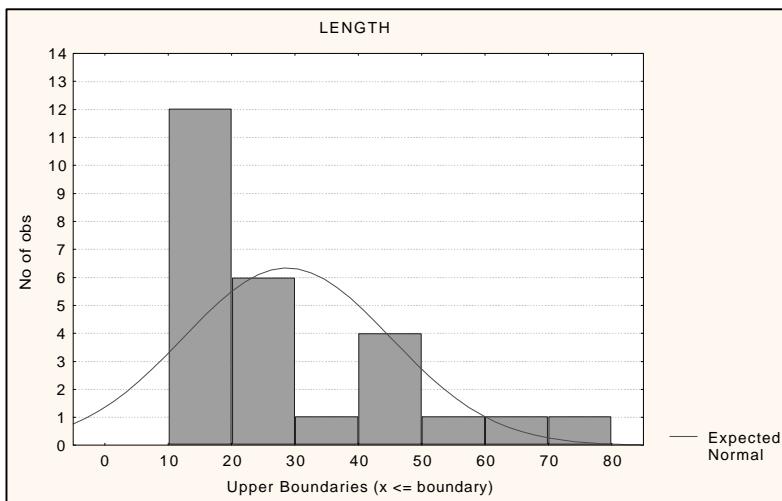
Reach 5A Northern Pike Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	11	38.34	26.33	50.34	37.2	16.1	67.0	17.8677	5.3873	0.4221	-1.2070
WEIGHT (g)	11	569.82	133.96	1005.68	282.5	20.0	1730.0	648.7874	195.6168	1.0305	-0.5732



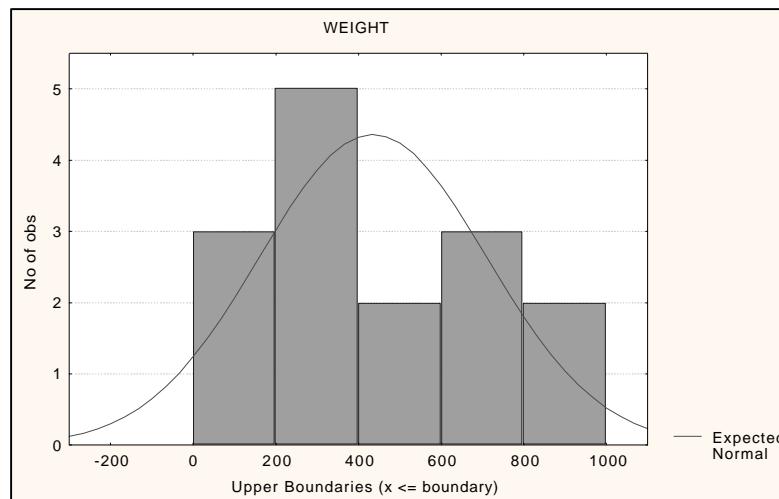
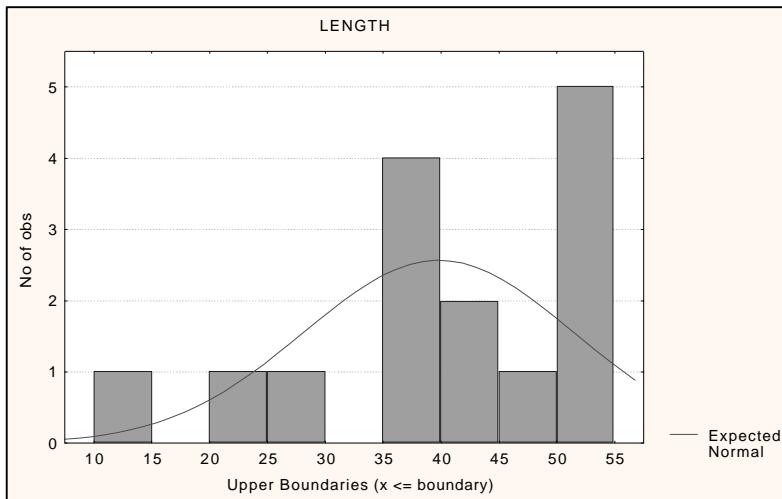
Reach 5B Northern Pike Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	26	28.72	22.11	35.33	20.3	13.1	71.2	16.3660	3.2096	1.3417	0.8043
WEIGHT (g)	26	309.15	77.17	541.14	49.3	13.0	2526.0	574.3496	112.6392	2.8470	8.8677



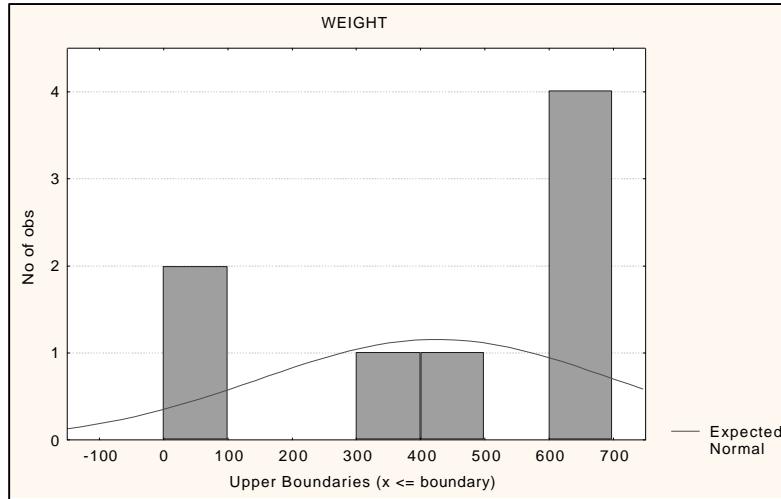
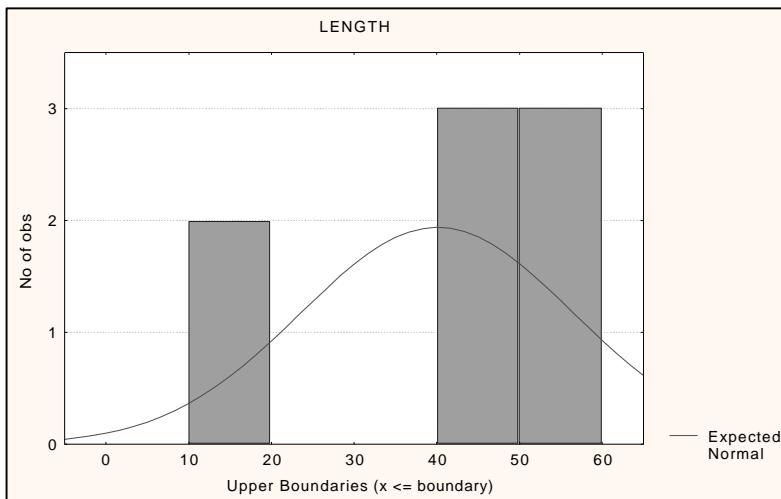
Reach 5C Northern Pike Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	15	39.79	33.33	46.24	41.0	15.0	53.9	11.6550	3.0093	-0.7419	0.0208
WEIGHT (g)	15	435.10	283.10	587.10	392.0	16.5	875.5	274.4727	70.8685	0.1484	-1.1289



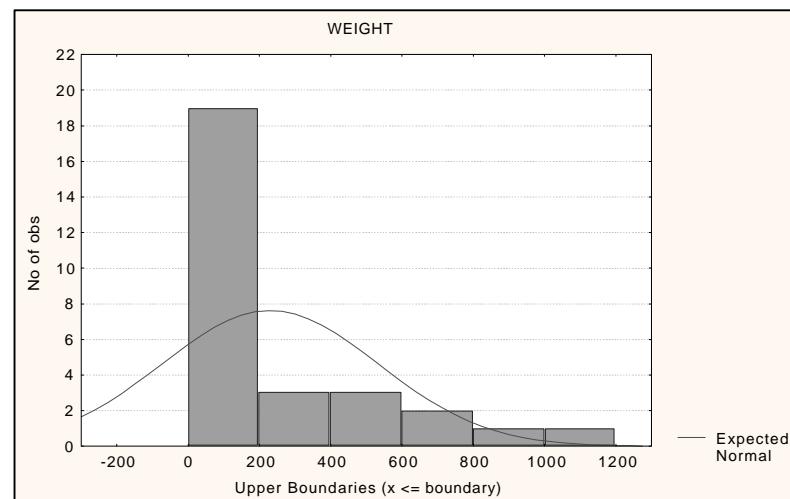
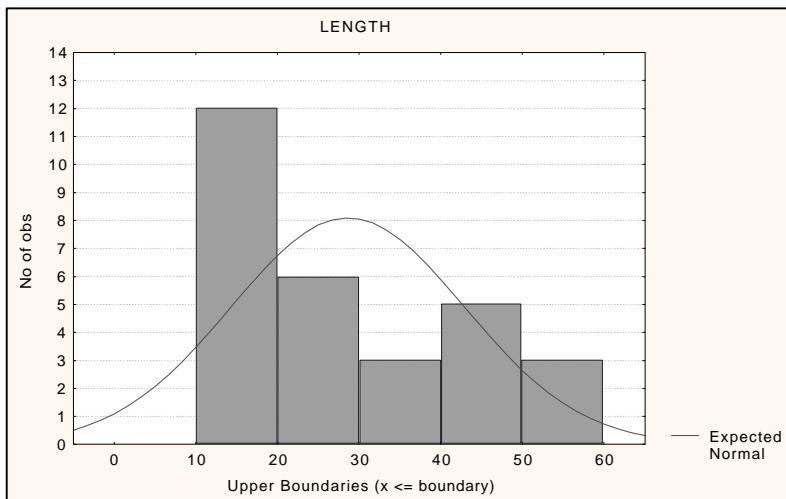
Backwaters Northern Pike Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	8	40.05	26.29	53.81	46.0	11.3	53.2	16.4624	5.8203	-1.2538	-0.0863
WEIGHT (g)	8	425.15	194.42	655.88	505.0	7.0	684.5	275.9888	97.5768	-0.8261	-0.9940



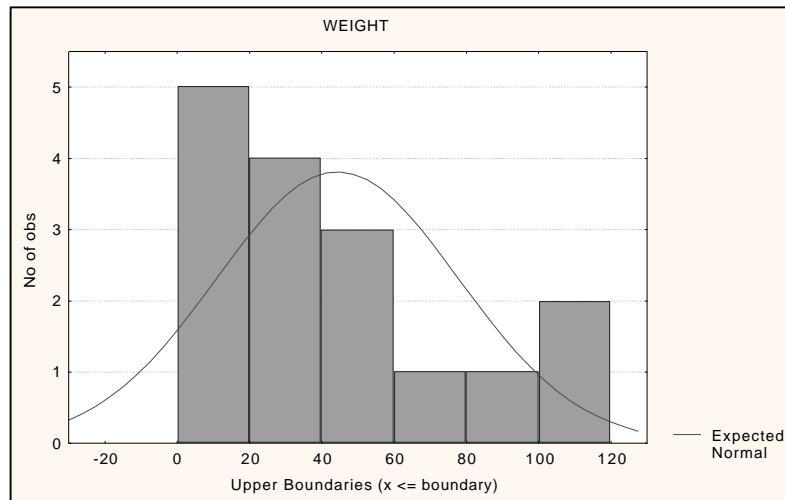
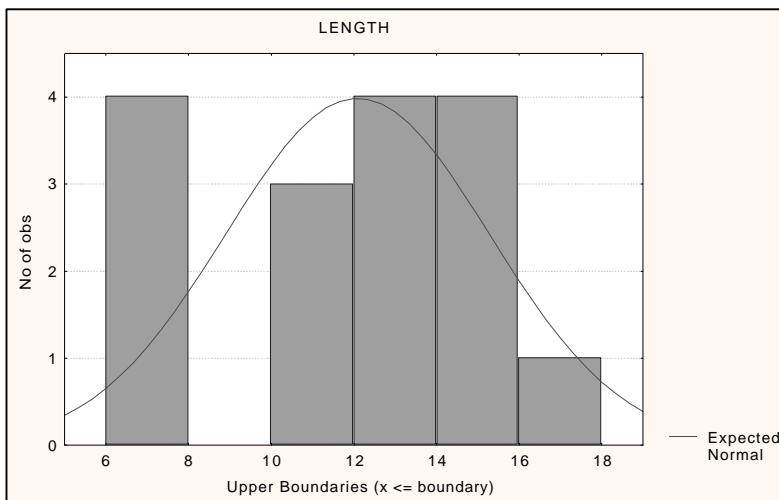
Woods Pond Northern Pike Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	29	28.60	23.16	34.03	23.5	12.0	56.0	14.2956	2.6546	0.6503	-1.0249
WEIGHT (g)	29	230.06	114.57	345.54	66.4	7.0	1098.5	303.5963	56.3764	1.5436	1.5536



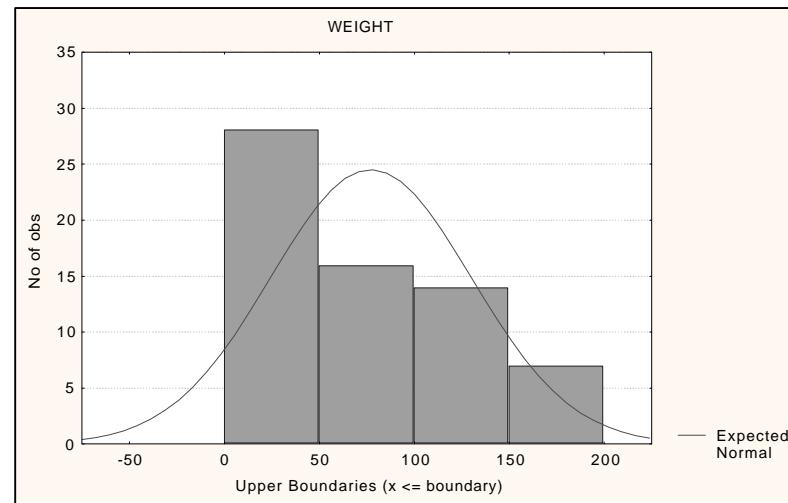
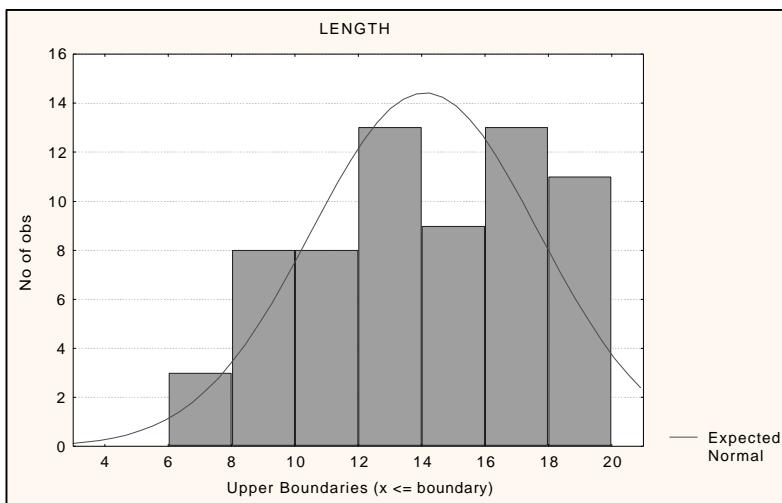
Reach 5A Pumpkinseed Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	16	12.09	10.38	13.79	12.8	7.1	16.3	3.2031	0.8008	-0.4318	-1.1900
WEIGHT (g)	16	44.32	26.48	62.16	34.0	7.5	110.0	33.4861	8.3715	0.6495	-0.5779



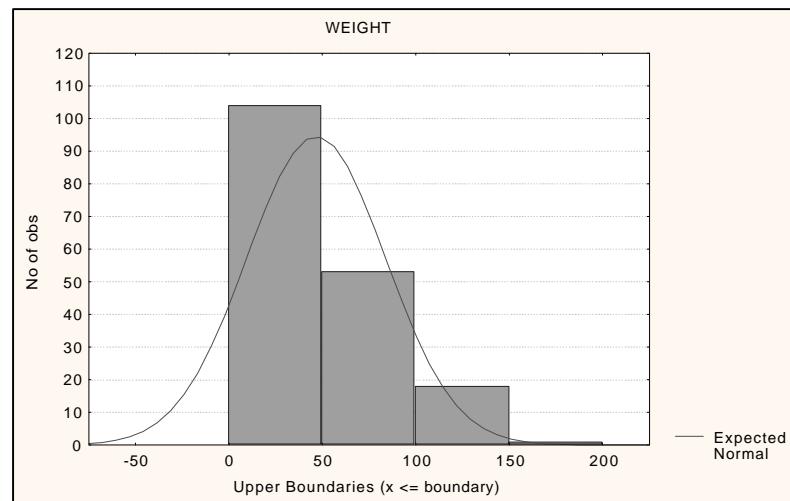
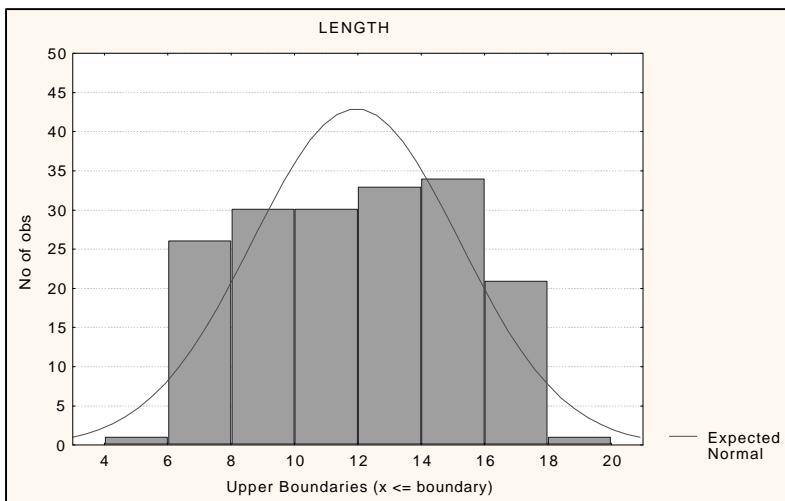
Reach 5B Pumpkinseed Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Standard					
			-95.000%	+95.000%		Minimum	Maximum	Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	65	14.10	13.21	14.99	14.2	6.8	20.0	3.5951	0.4459	-0.2749	-1.0196
WEIGHT (g)	65	77.15	64.04	90.25	69.5	5.0	197.0	52.8855	6.5596	0.3798	-1.1082



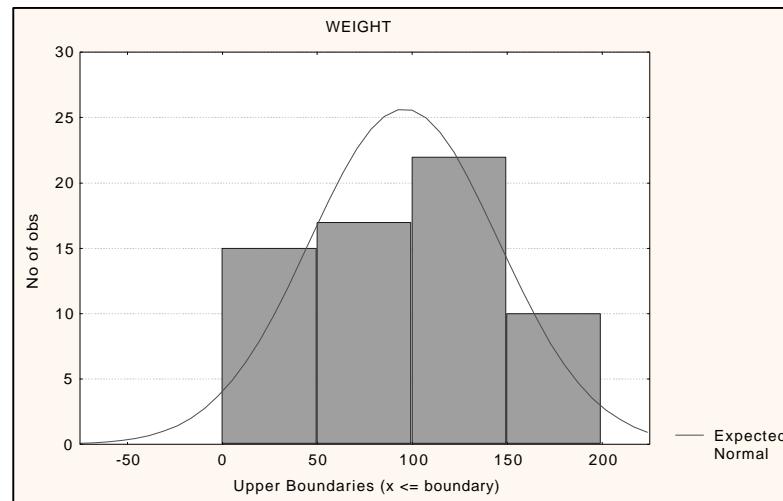
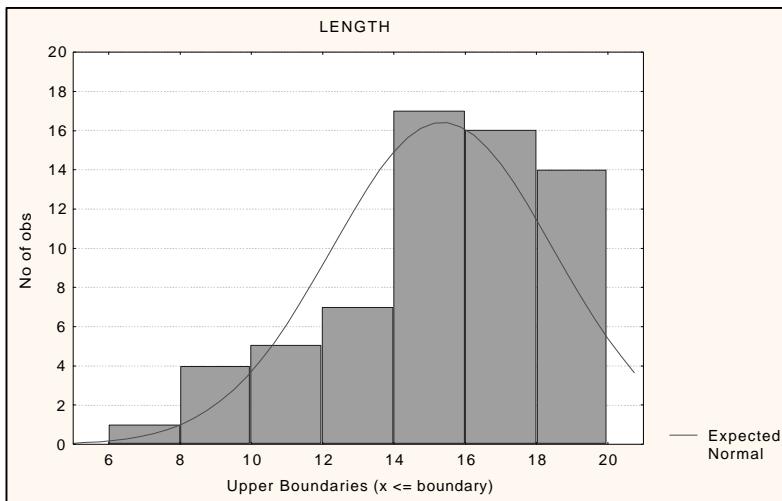
Reach 5C Pumpkinseed Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	176	11.94	11.45	12.43	12.2	6.0	19.0	3.2722	0.2467	0.0158	-1.1404
WEIGHT (g)	176	46.67	41.14	52.19	37.8	3.5	171.5	37.1322	2.7989	0.8631	0.0611



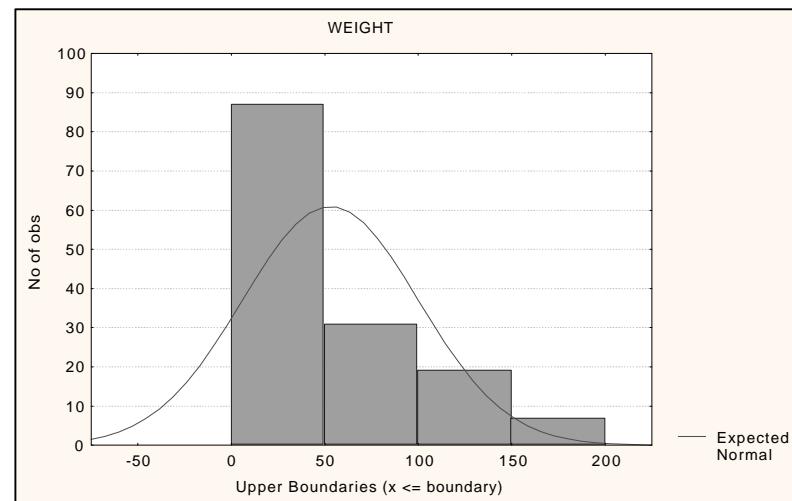
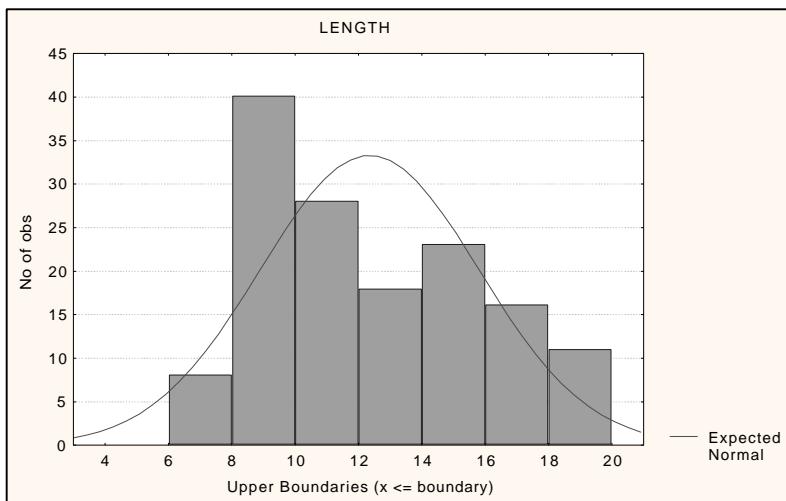
Backwaters Pumpkinseed Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard			
			-95.000%	+95.000%				Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	64	15.36	14.58	16.14	16.0	7.3	19.6	3.1097	0.3887	-0.9368	0.1376
WEIGHT (g)	64	95.82	83.39	108.25	100.8	7.0	182.6	49.7714	6.2214	-0.1729	-1.0023



Woods Pond Pumpkinseed Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	144	12.35	11.78	12.92	11.3	6.9	19.1	3.4514	0.2876	0.4011	-1.1000
WEIGHT (g)	144	53.01	45.25	60.77	29.7	5.5	191.3	47.1151	3.9263	1.0936	0.0237



Reach 5A Rainbow Trout Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	2	36.20	13.33	59.07	36.2	34.4	38.0	2.5456	1.8000		
WEIGHT (g)	2	503.00	-157.72	1163.72	503.0	451.0	555.0	73.5391	52.0000		

Reach 5B Rainbow Trout Length-Weight Descriptive Statistics

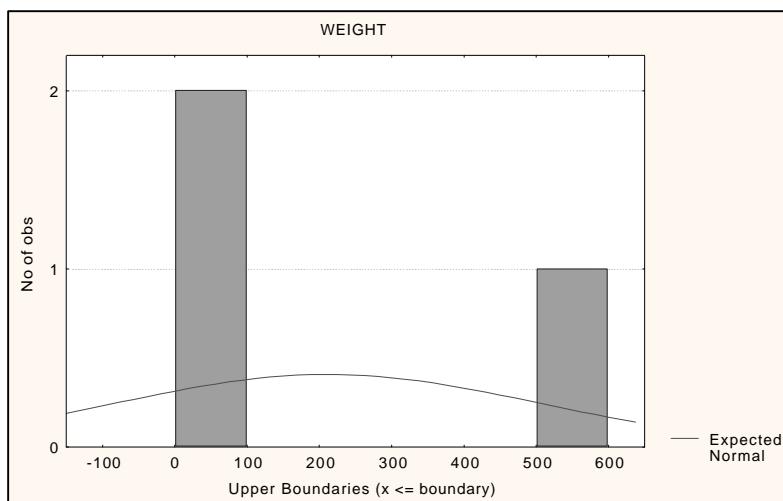
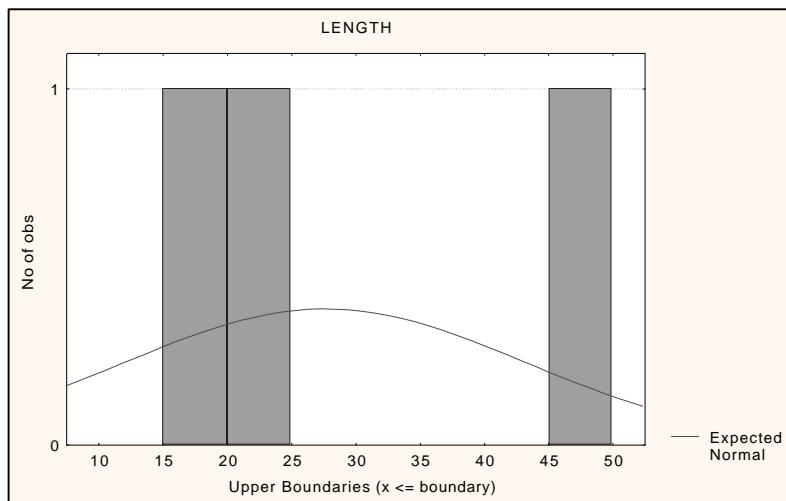
Reach 5C Rainbow Trout Length-Weight Descriptive Statistics

Backwaters Rainbow Trout Length-Weight Descriptive Statistics

Woods Pond Rainbow Trout Length-Weight Descriptive Statistics

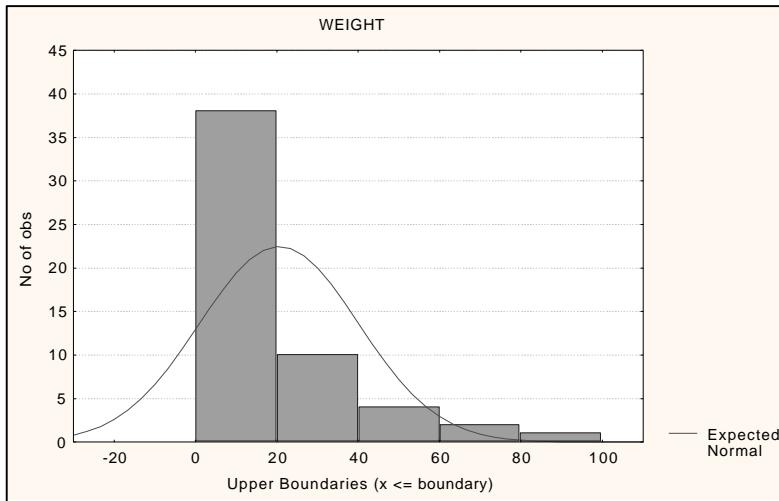
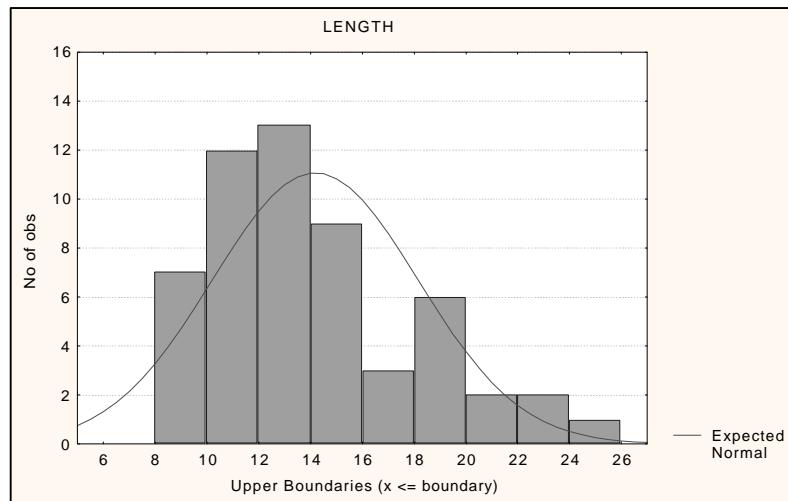
Reach 5A Redfin Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	3	27.60	-11.23	66.43	21.3	16.1	45.4	15.6330	9.0257	1.5190	
WEIGHT (g)	3	211.17	-516.89	939.22	59.5	25.0	549.0	293.0803	169.2100	1.7051	



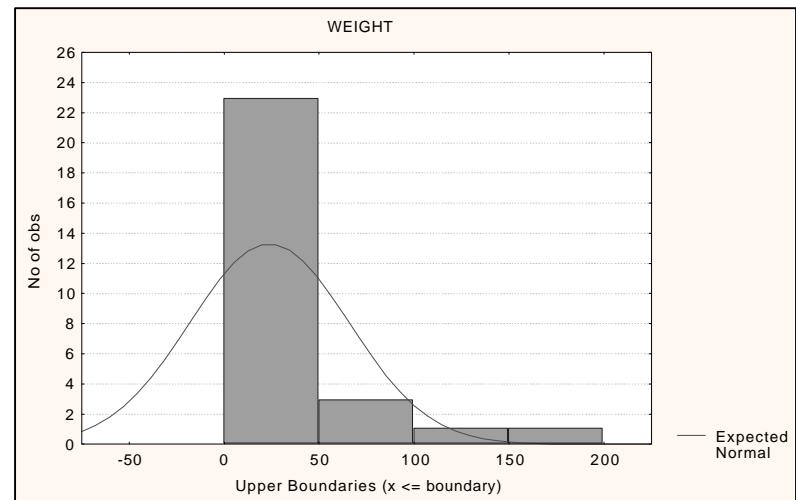
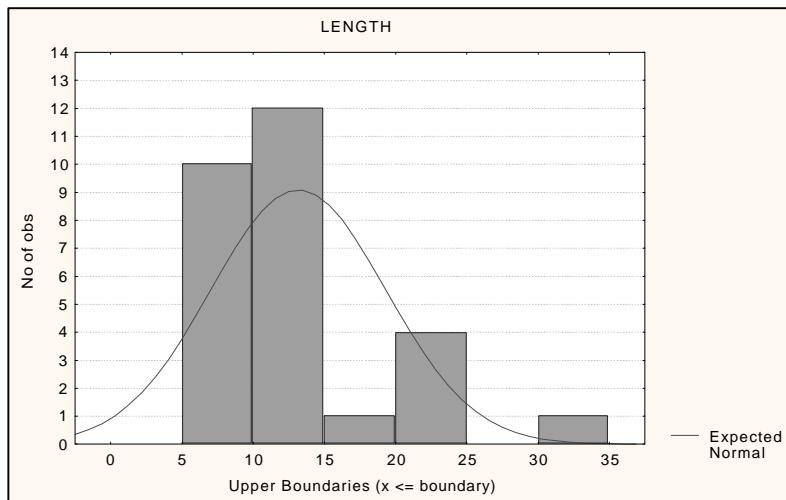
Reach 5B Redfin Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	55	14.18	13.11	15.25	13.5	8.2	24.5	3.9640	0.5345	0.7283	-0.1113
WEIGHT (g)	55	20.55	15.27	25.84	13.5	2.5	97.0	19.5372	2.6344	1.9329	4.1658



Reach 5C Redfin Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	28	13.17	10.79	15.56	11.3	7.3	31.4	6.1506	1.1624	1.6510	1.9644
WEIGHT (g)	28	23.84	7.54	40.15	7.8	2.5	191.0	42.0435	7.9455	2.8890	9.0533



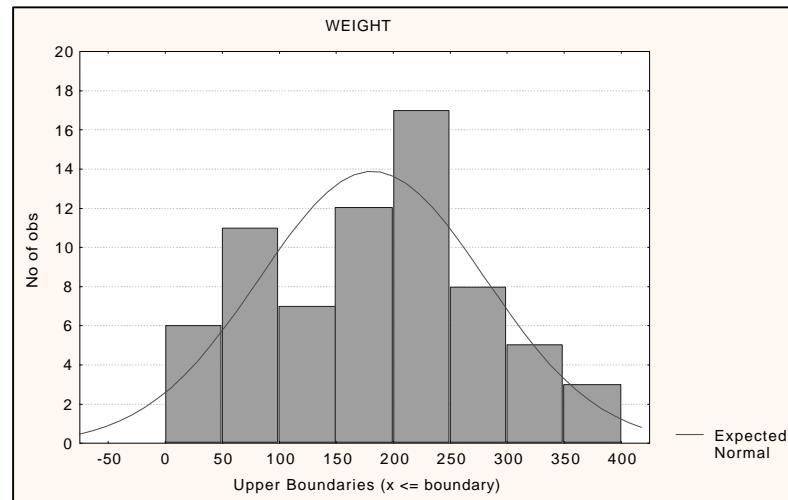
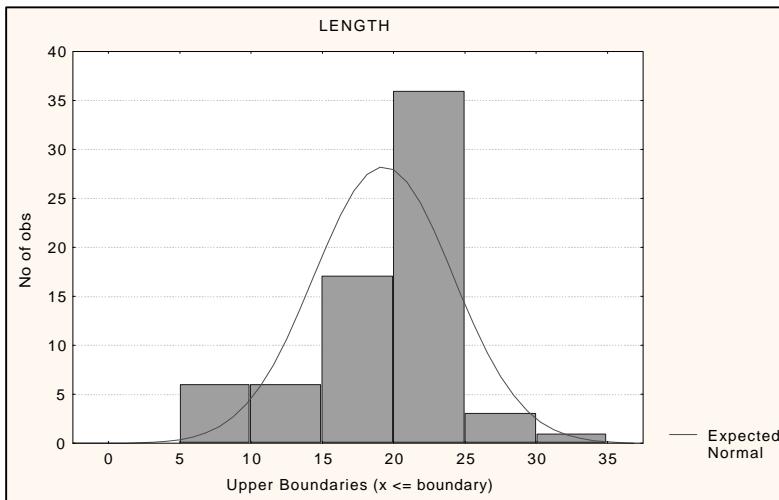
Backwaters Redfin Pickerel Length-Weight Descriptive Statistics

Woods Pond Redfin Pickerel Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	1	16.30				16.3	16.3				
WEIGHT (g)	1	26.60				26.6	26.6				

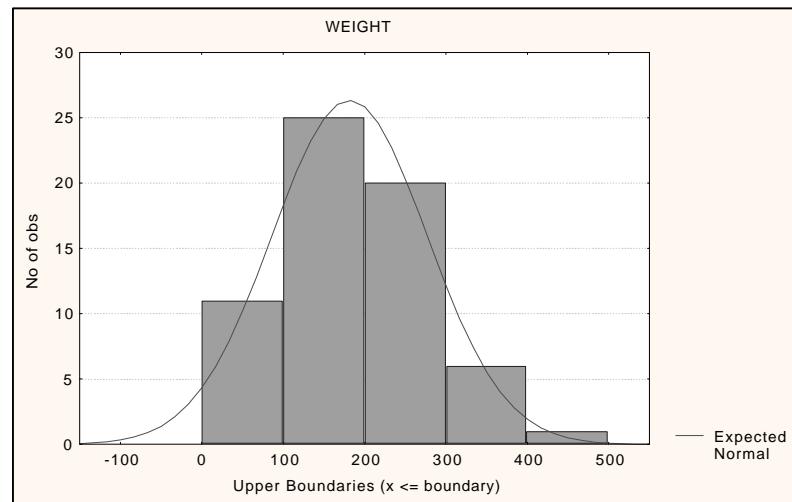
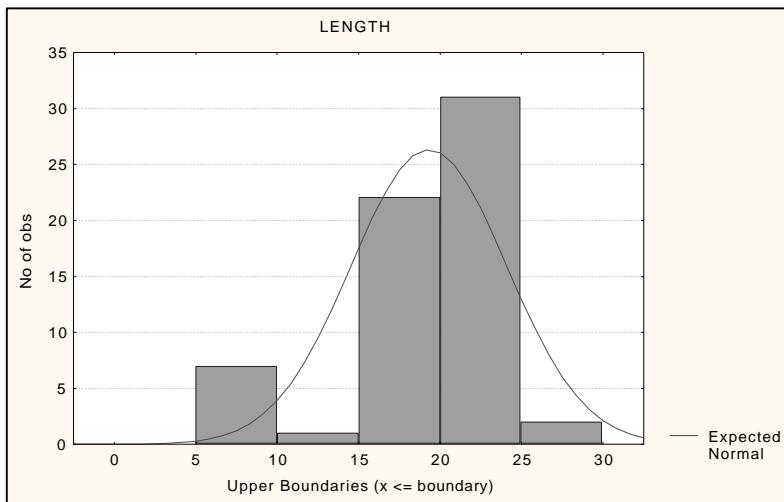
Reach 5A Rock Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	69	19.30	18.13	20.47	20.5	6.3	31.3	4.8720	0.5865	-0.8826	1.0204
WEIGHT (g)	69	181.64	157.82	205.46	194.5	4.0	380.5	99.1616	11.9377	-0.0458	-0.7123



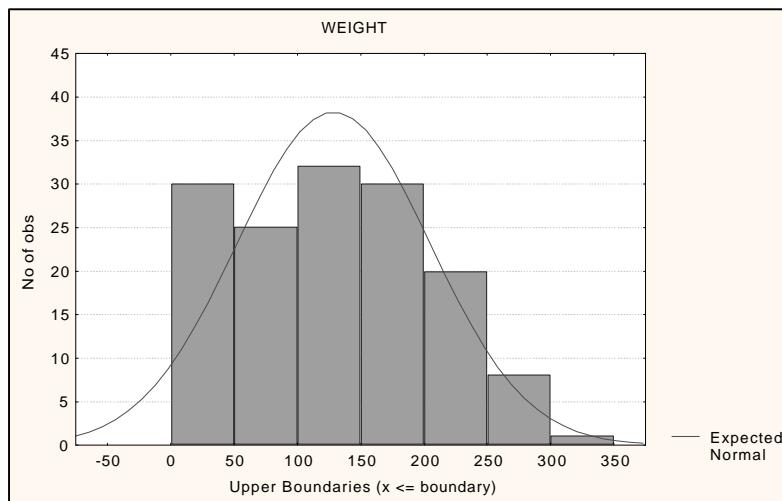
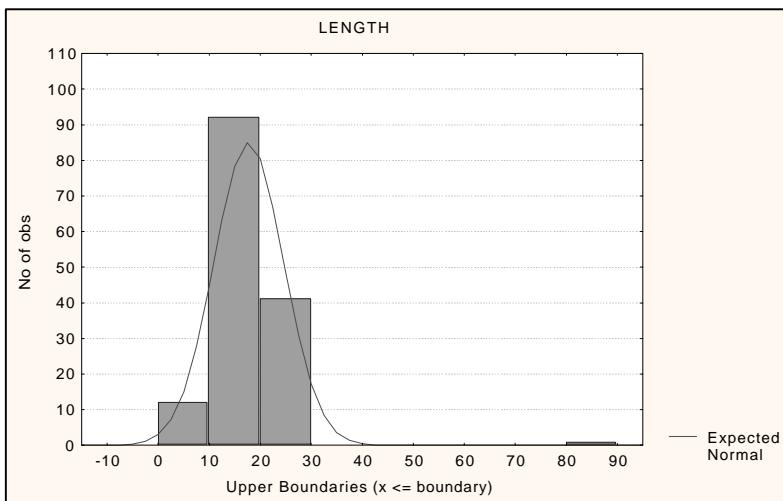
Reach 5B Rock Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	63	19.31	18.11	20.51	20.6	7.0	28.0	4.7728	0.6013	-1.2683	1.3351
WEIGHT (g)	63	181.47	157.43	205.51	189.0	6.5	426.0	95.4475	12.0253	0.0041	-0.0742



Reach 5C Rock Bass Length-Weight Descriptive Statistics

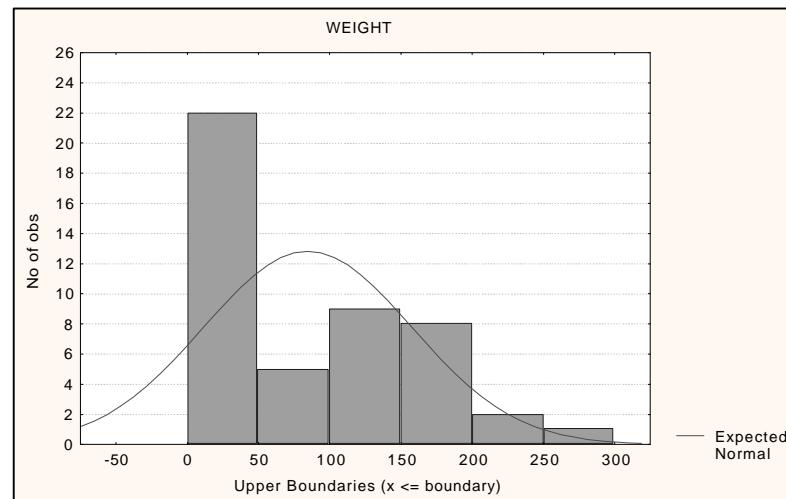
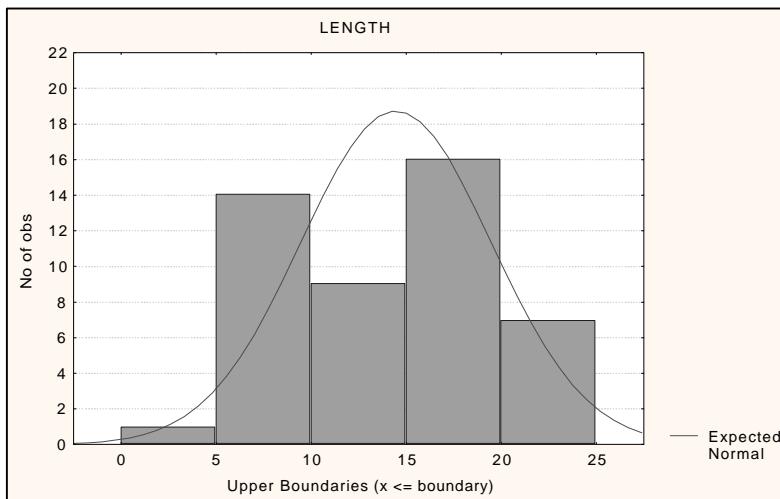
Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	146	17.76	16.64	18.88	18.5	4.7	81.2	6.8565	0.5674	5.2247	50.2297
WEIGHT (g)	146	128.60	116.15	141.05	129.5	1.5	345.0	76.0990	6.2980	0.0986	-0.7540



Backwaters Rock Bass Length-Weight Descriptive Statistics

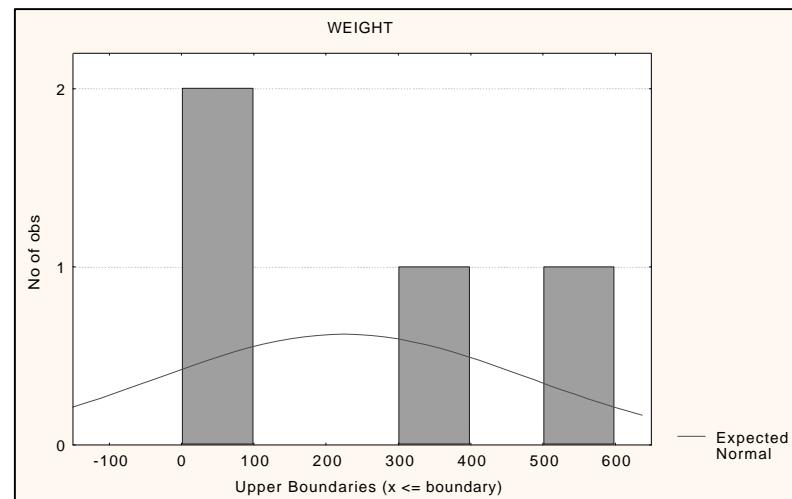
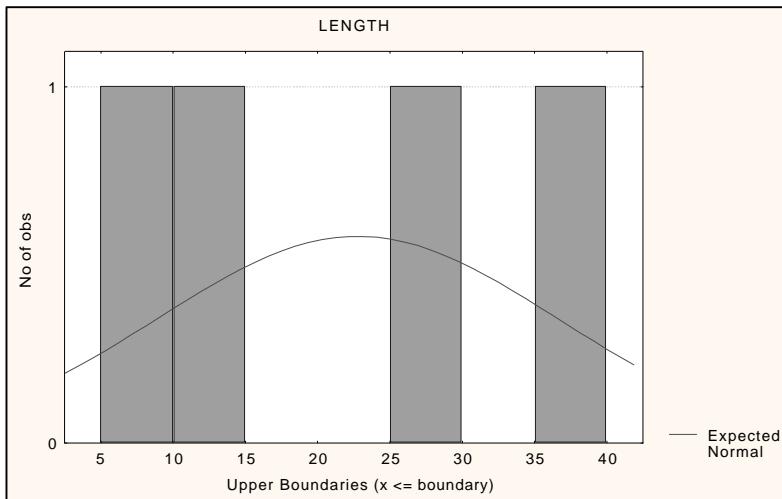
Woods Pond Rock Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	47	14.46	12.99	15.93	13.7	3.6	22.4	5.0083	0.7305	-0.0631	-1.2627
WEIGHT (g)	47	84.56	63.09	106.02	55.5	1.5	282.0	73.0962	10.6622	0.7526	-0.3414



Reach 5A Smallmouth Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	4	22.75	0.89	44.61	21.5	9.5	38.6	13.7391	6.8696	0.2880	-3.7160
WEIGHT (g)	4	223.70	-184.21	631.61	165.4	11.0	553.0	256.3482	128.1741	0.7629	-1.7295



Reach 5B Smallmouth Bass Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	2	22.10	-102.42	146.62	22.1	12.3	31.9	13.8593	9.8000		
WEIGHT (g)	2	229.25	-2385.05	2843.55	229.3	23.5	435.0	290.9744	205.7500		

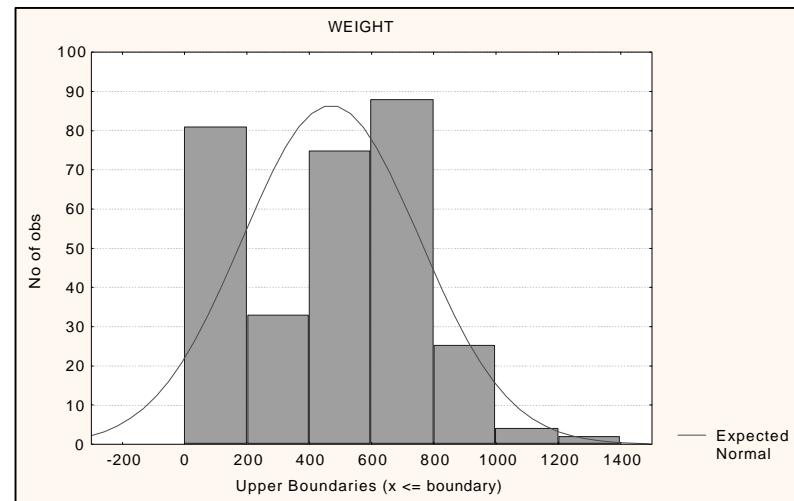
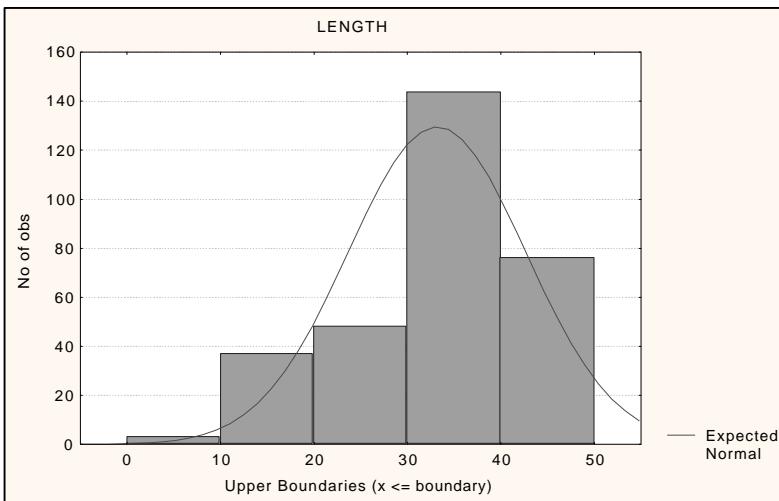
Reach 5C Smallmouth Bass Length-Weight Descriptive Statistics

Backwaters Smallmouth Bass Length-Weight Descriptive Statistics

Woods Pond Smallmouth Bass Length-Weight Descriptive Statistics

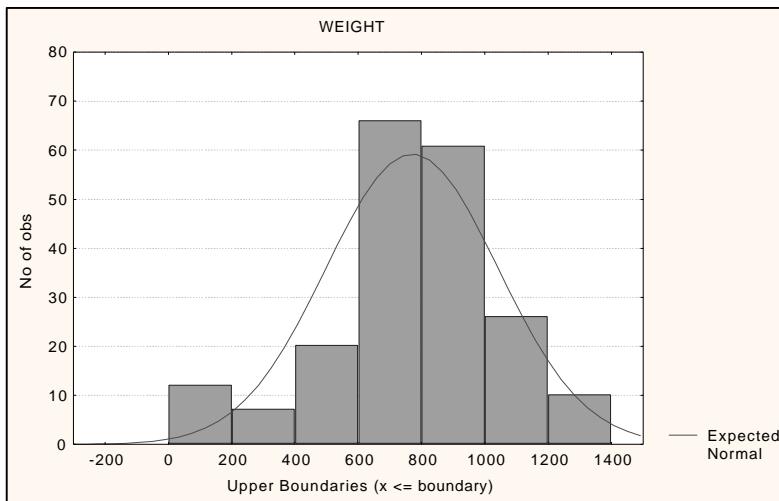
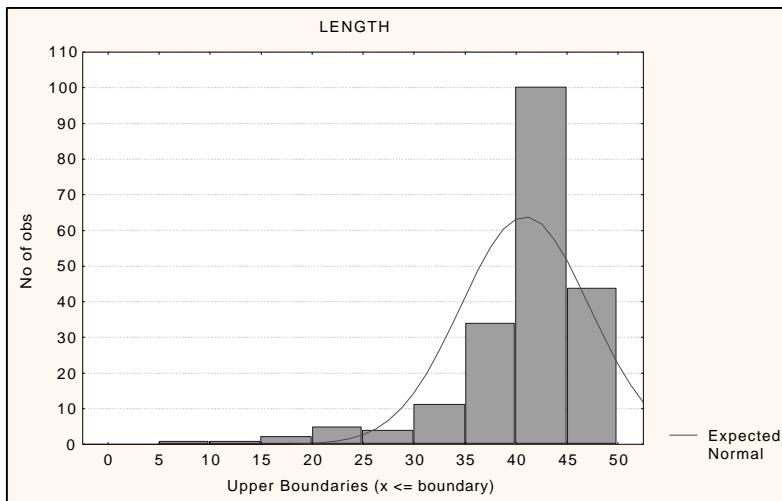
Reach 5A White Sucker Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	308	33.16	32.09	34.22	36.4	6.9	49.5	9.4888	0.5407	-0.9093	-0.2210
WEIGHT (g)	308	470.27	438.39	502.15	519.5	3.0	1303.0	284.3566	16.2027	-0.0477	-0.7407



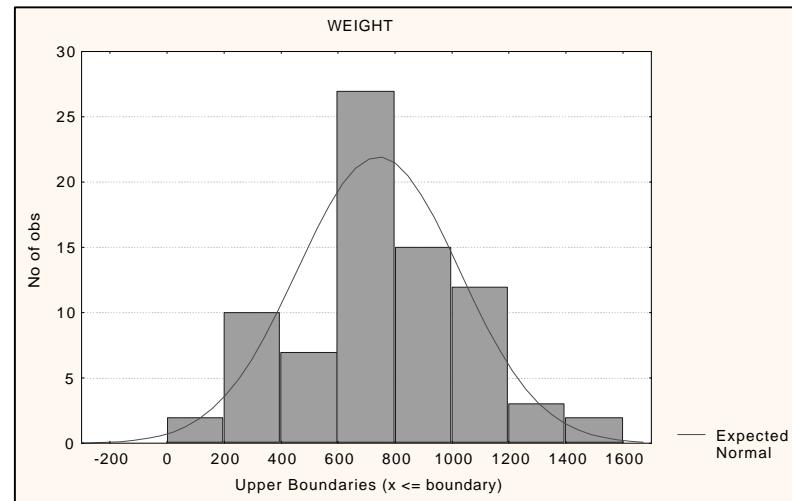
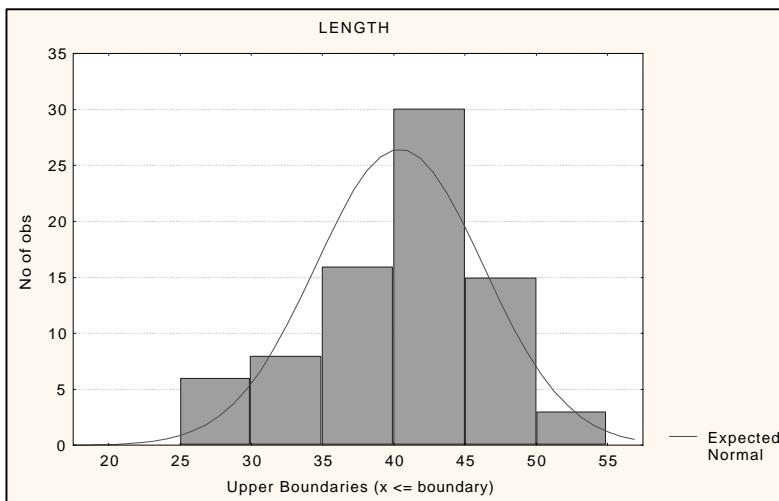
Reach 5B White Sucker Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	202	40.88	40.01	41.76	42.0	8.2	49.5	6.3108	0.4440	-2.1539	6.1896
WEIGHT (g)	202	770.28	732.50	808.06	784.5	6.0	1389.5	272.3136	19.1599	-0.6011	0.5687



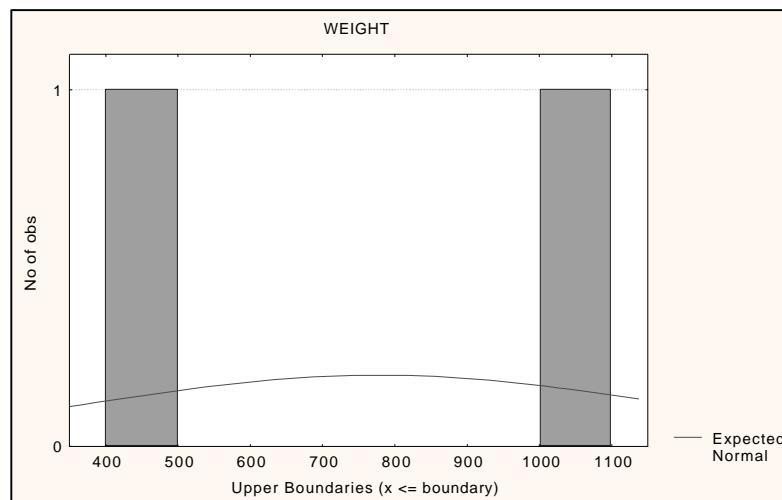
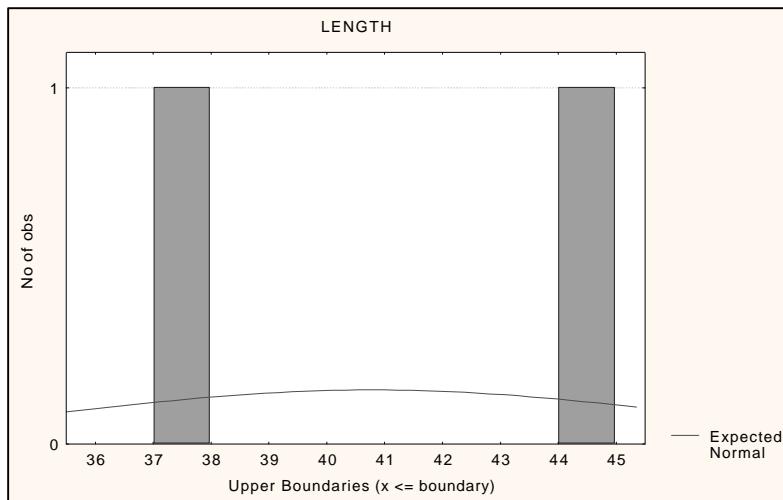
Reach 5C White Sucker Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	78	40.41	39.08	41.73	41.2	25.9	51.5	5.8841	0.6662	-0.5712	-0.0364
WEIGHT (g)	78	741.60	677.61	805.59	722.5	37.0	1420.0	283.8103	32.1352	0.0133	0.0505



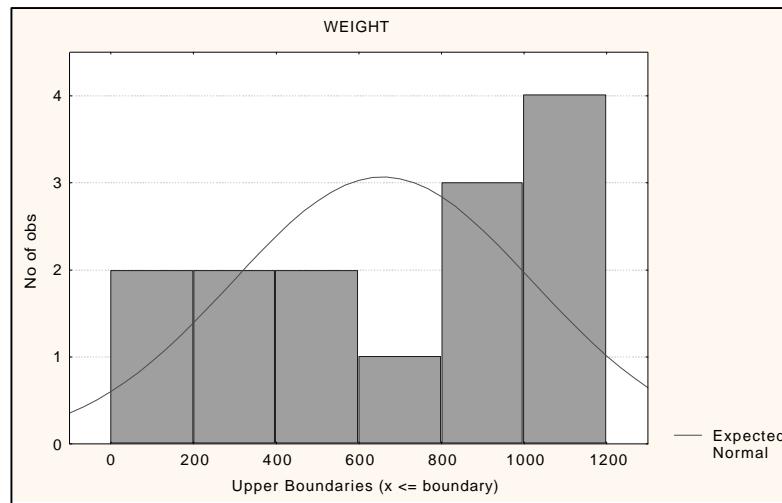
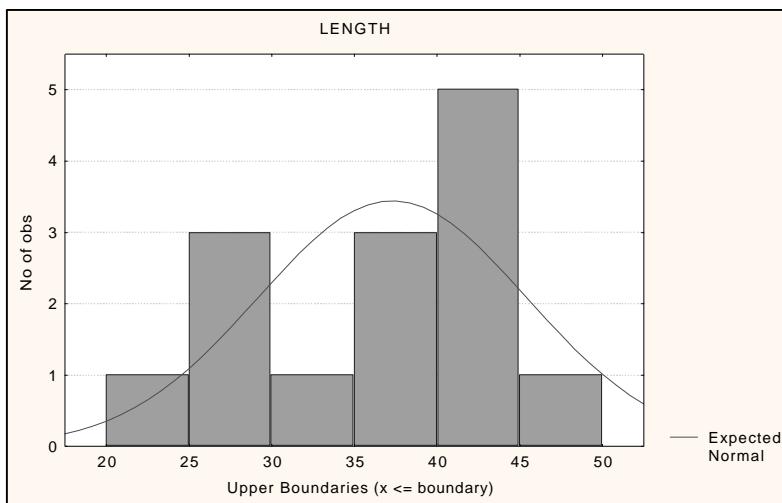
Backwaters White Sucker Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.	Confid.	Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	2	40.80	-6.21	87.81	40.8	37.1	44.5	5.2326	3.7000		
WEIGHT (g)	2	778.50	-2804.65	4361.65	778.5	496.5	1060.5	398.8082	282.0000		



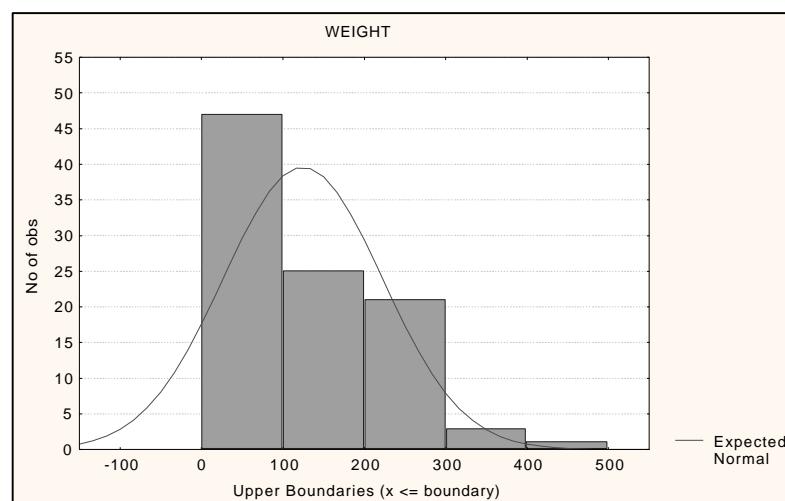
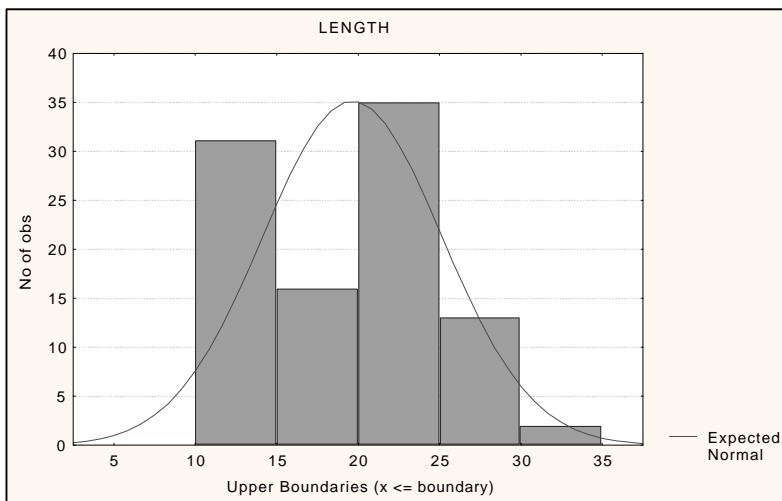
Woods Pond White Sucker Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	14	37.29	32.61	41.98	39.6	23.1	47.2	8.1095	2.1674	-0.5789	-1.2029
WEIGHT (g)	14	657.56	447.25	867.87	777.8	132.5	1110.0	364.2468	97.3491	-0.2935	-1.7023



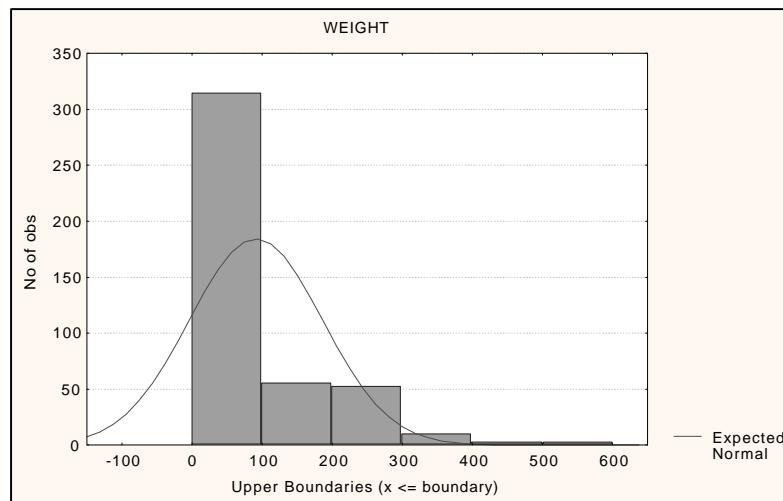
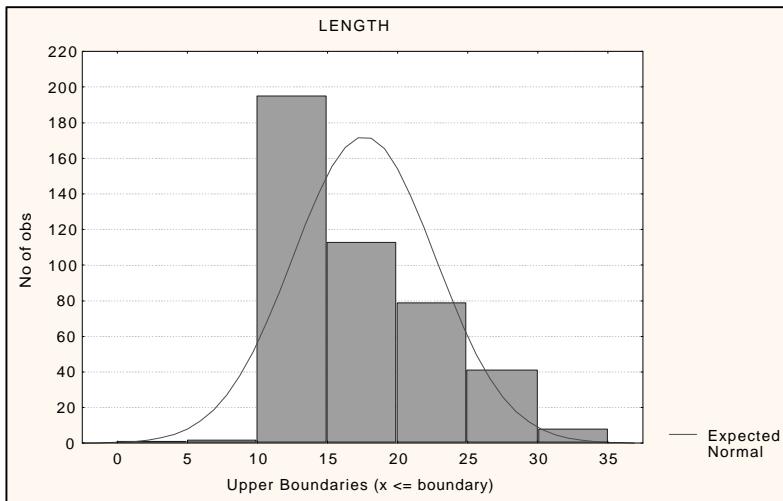
Reach 5A Yellow Perch Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	97	19.65	18.54	20.76	20.5	10.5	30.8	5.5080	0.5593	-0.0642	-1.2725
WEIGHT (g)	97	124.43	104.72	144.14	111.0	11.5	441.0	97.7888	9.9289	0.7389	-0.0487



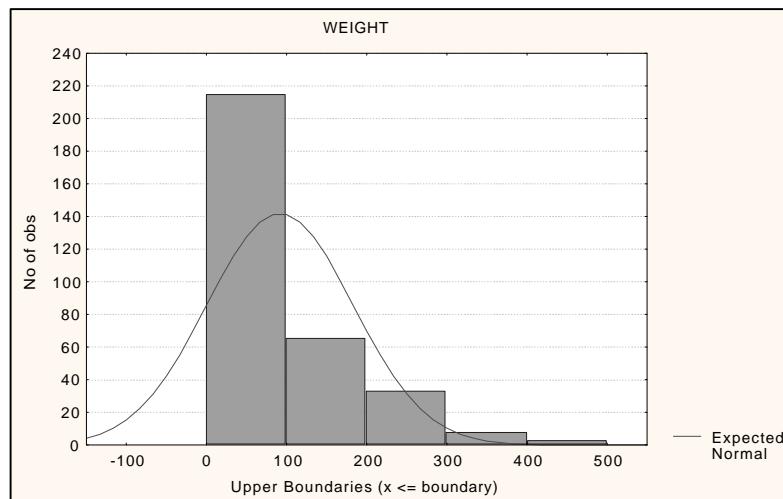
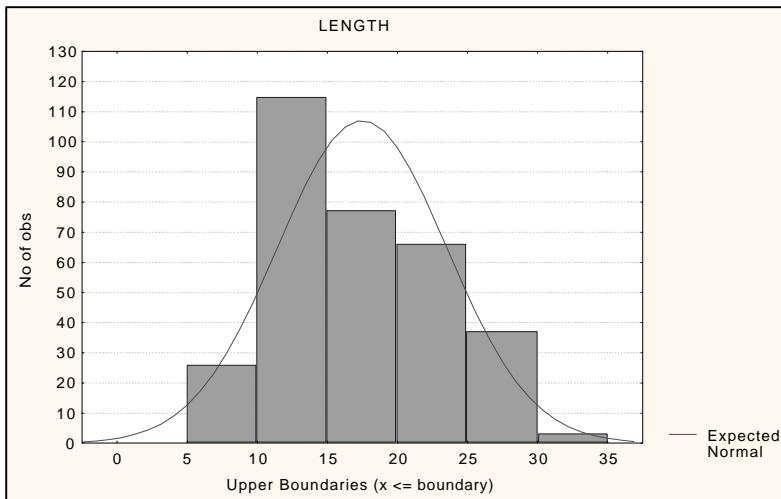
Reach 5B Yellow Perch Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	439	17.61	17.13	18.09	16.2	4.7	32.3	5.0886	0.2429	0.7360	-0.2635
WEIGHT (g)	439	91.23	82.31	100.15	47.5	1.0	534.0	95.0877	4.5383	1.8221	3.5066



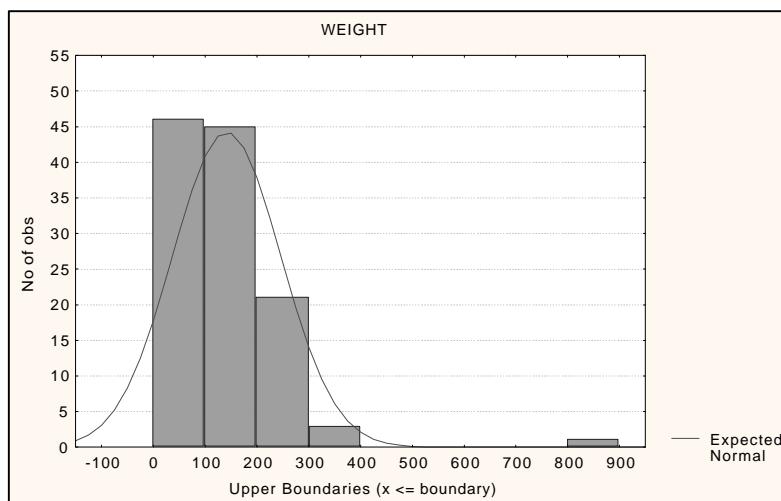
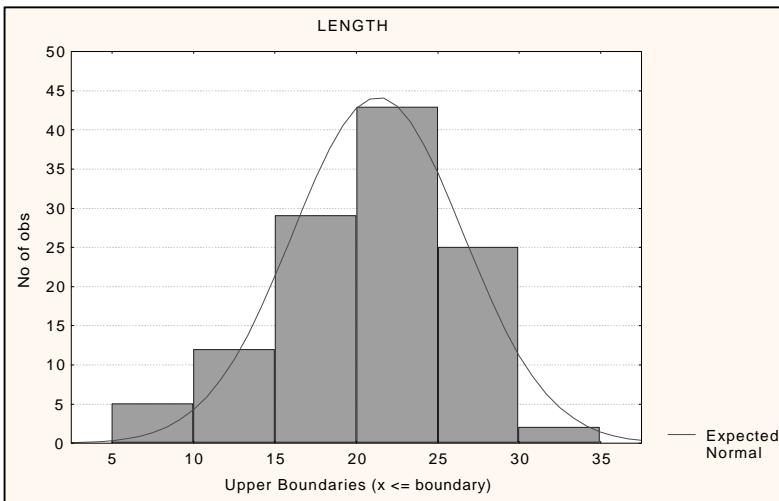
Reach 5C Yellow Perch Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	324	17.47	16.81	18.13	17.1	6.0	34.5	6.0379	0.3354	0.2313	-0.6777
WEIGHT (g)	324	91.61	81.66	101.57	55.8	2.0	430.0	91.1117	5.0618	1.3433	1.3131



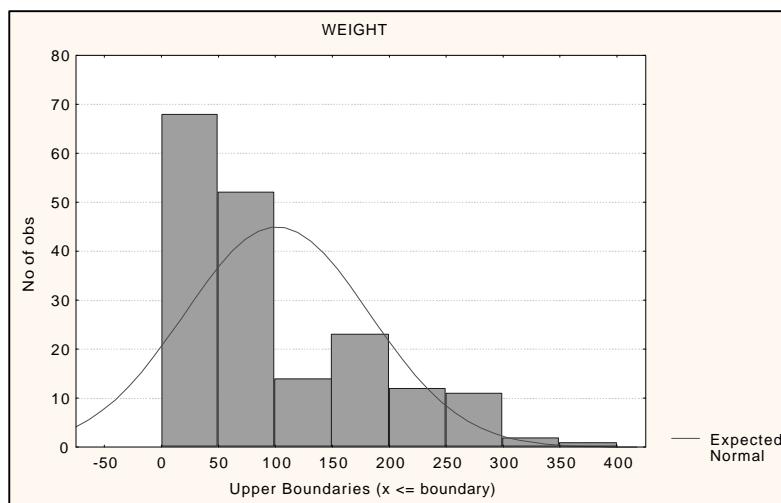
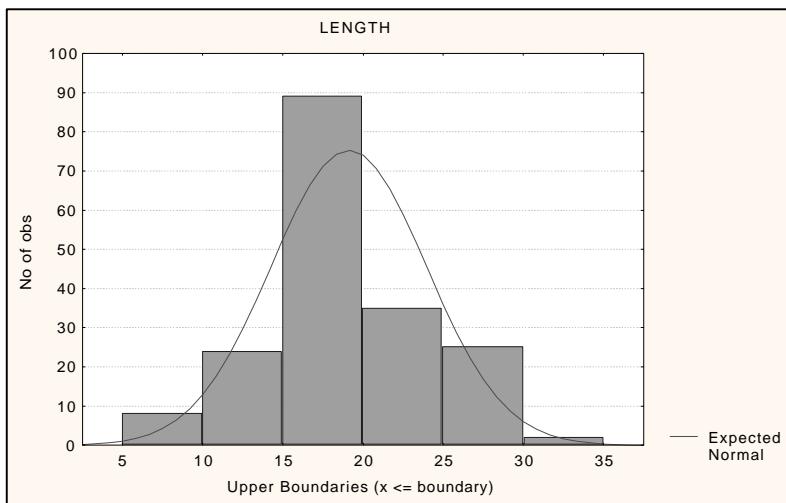
Backwaters Yellow Perch Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Standard			
			-95.000%	+95.000%				Std.Dev.	Error	Skewness	Kurtosis
LENGTH (cm)	116	21.32	20.35	22.28	22.9	8.0	30.7	5.2405	0.4866	-0.5222	-0.4480
WEIGHT (g)	116	141.43	122.18	160.68	142.8	5.5	801.5	104.6743	9.7188	2.2630	12.3231



Woods Pond Yellow Perch Length-Weight Descriptive Statistics

Metric	Valid N	Mean	Confid.		Median	Minimum	Maximum	Std.Dev.	Standard		
			-95.000%	+95.000%					Error	Skewness	Kurtosis
LENGTH (cm)	183	19.10	18.40	19.81	18.1	8.3	31.3	4.8487	0.3584	0.3200	-0.5122
WEIGHT (g)	183	101.51	89.69	113.34	66.2	6.6	384.0	81.0729	5.9931	1.1976	0.5934



Summary of Reach Specific Capture Probabilities from Multi-Pass (Depletion) Surveys					
<i>Reach and Species</i>	<i>Total Captured (all removals)</i>	<i>Population Estimate (from MicroFish)</i>	<i>CTCHPROB (from MicroFish)</i>	<i>SE of CP (from MicroFish)</i>	<i>Comments</i>
5A Bluegill	7	11	0.2692	0.3541	
5A Cyprinid	16	16	0.7619	0.1122	
5A Largemou	7	7	0.5833	0.2390	
5A Pumpkins	2	2	0.4000	0.6253	
5A Rock Bas	9	10	0.4737	0.2434	
5A White Su	26	26	0.8667	0.0663	
5A Yellow P	8	8	0.6667	0.1922	
5A Smallmou	2	2	0.5000	0.5189	
5A Total	77	82	0.5969	0.0682	
5B Bluegill	90	122	0.1982	0.0518	
5B Cyprinid	37	56	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
5B Largemou	14	23	0.1400	0.1389	
5B Northern	7	7	0.3684	0.1724	
5B Pumpkins	25	28	0.2941	0.0928	
5B Rock Bas	17	26	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
5B White Su	3	3	0.3333	0.2716	
5B Yellow P	122	147	0.2536	0.0428	
5B Chain Pi	1	1	0.0000	0.0000	No maximum likelihood estimate generated. All fish caught first pass.
5B Bluegil1	1	1	0.0000	0.0000	No maximum likelihood estimate generated. All fish caught first pass.
5B Black Cr	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
5B Redfin P	17	26	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
5B Total	335	441	0.1570	0.0277	
5C Bluegill	97	118	0.2896	0.0550	
5C Largemou	14	15	0.3784	0.1366	
5C Northern	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
5C Pumpkins	15	17	0.3191	0.1385	
5C Rock Bas	34	59	0.1560	0.1047	
5C White Su	3	3	0.3750	0.3066	
5C Yellow P	49	66	0.2344	0.0812	
5C Redfin P	1	1	0.0000	0.0000	No maximum likelihood estimate generated. All fish caught first pass.
5C Common C	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
5C Total	215	281	0.2440	0.0383	
WP Bluegill	619	2797	0.0407	0.0227	
WP Cyprinid	3	3	0.2727	0.2912	
WP Largemou	42	64	0.1609	0.0783	
WP Northern	15	16	0.3191	0.1193	
WP Pumpkins	56	84	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.

Summary of Reach Specific Capture Probabilities from Multi-Pass (Depletion) Surveys					
<i>Reach and Species</i>	<i>Total Captured (all removals)</i>	<i>Population Estimate (from MicroFish)</i>	<i>CTCHPROB (from MicroFish)</i>	<i>SE of CP (from MicroFish)</i>	<i>Comments</i>
WP Rock Bas	20	43	0.0976	0.1200	
WP White Su	4	4	0.4444	0.2170	
WP Yellow P	23	24	0.3710	0.0929	
WP Bluegil1	2	2	0.3333	0.3326	
WP Black Cr	22	45	0.1043	0.1137	
WP Goldfish	5	10	0.1020	0.2436	
WP Brown Bu	16	24	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
WP Yellow Bullhead	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
WP Total	828	3117	0.0484	0.0194	
BW Bluegill	13	15	0.3611	0.1754	
BW Cyprinid	8	12	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
BW Largemou	10	11	0.4000	0.1927	
BW Northern	3	3	0.6000	0.2838	
BW Pumpkins	7	7	0.5000	0.2102	
BW Yellow P	57	137	0.1253	0.1046	
BW Black Cr	3	3	0.4286	0.3537	
BW Common C	2	3	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
BW Goldfish	2	2	0.5000	0.3932	
BW Brown Bu	15	15	0.5769	0.1305	
BW Total	120	208	0.1942	0.0672	
Note 1: Maximum likelihood estimate terminated at 5 times the total catch. Estimate arbitrarily reset to 1.5 times total catch.					
Population estimate termination was caused by non-descending removal pattern. Results should not be considered reliable.					

Summary of Reach Specific Capture Probabilities from Multi-Pass (Depletion) Surveys

Sorted by Species Type and Species

Reach	Species	Total Captured (all removals)	Population Estimate (from MicroFish)	CTCHPROB (from MicroFish)	SE of CP (from MicroFish)	Comments
5A	Largemouth Bass	7	7	0.5833	0.2390	
5B	Largemouth Bass	14	23	0.1400	0.1389	
5C	Largemouth Bass	14	15	0.3784	0.1366	
BW	Largemouth Bass	10	11	0.4000	0.1927	
WP	Largemouth Bass	42	64	0.1609	0.0783	
5A	Yellow Perch	8	8	0.6667	0.1922	
5B	Yellow Perch	122	147	0.2536	0.0428	
5C	Yellow Perch	49	66	0.2344	0.0812	
BW	Yellow Perch	57	137	0.1253	0.1046	
WP	Yellow Perch	23	24	0.3710	0.0929	
5B	Northern Pike	7	7	0.3684	0.1724	
5C	Northern Pike	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
BW	Northern Pike	3	3	0.6000	0.2838	
WP	Northern Pike	15	16	0.3191	0.1193	
5B	BluegillxPumpkinseed hybrid	1	1	0.0000	0.0000	No maximum likelihood estimate generated. All fish caught first pass.
WP	BluegillxPumpkinseed hybrid	2	2	0.3333	0.3326	
5A	Bluegill	7	11	0.2692	0.3541	
5B	Bluegill	90	122	0.1982	0.0518	
5C	Bluegill	97	118	0.2896	0.0550	
BW	Bluegill	13	15	0.3611	0.1754	
WP	Bluegill	619	2797	0.0407	0.0227	
5A	Rock Bass	9	10	0.4737	0.2434	
5B	Rock Bass	17	26	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
5C	Rock Bass	34	59	0.1560	0.1047	
WP	Rock Bass	20	43	0.0976	0.1200	
5A	Pumpkinseed	2	2	0.4000	0.6253	
5B	Pumpkinseed	25	28	0.2941	0.0928	
5C	Pumpkinseed	15	17	0.3191	0.1385	
BW	Pumpkinseed	7	7	0.5000	0.2102	
WP	Pumpkinseed	56	84	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
5A	Cyprinid	16	16	0.7619	0.1122	
5B	Cyprinid	37	56	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
BW	Cyprinid	8	12	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
WP	Cyprinid	3	3	0.2727	0.2912	
5A	White Sucker	26	26	0.8667	0.0663	

Summary of Reach Specific Capture Probabilities from Multi-Pass (Depletion) Surveys

Sorted by Species Type and Species

<i>Reach</i>	<i>Species</i>	<i>Total Captured (all removals)</i>	<i>Population Estimate (from MicroFish)</i>	<i>CTCHPROB (from MicroFish)</i>	<i>SE of CP (from MicroFish)</i>	<i>Comments</i>
5B	White Sucker	3	3	0.3333	0.2716	
5C	White Sucker	3	3	0.3750	0.3066	
WP	White Sucker	4	4	0.4444	0.2170	
5C	Common Carp	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
BW	Common Carp	2	3	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
BW	Brown Bullhead	15	15	0.5769	0.1305	
WP	Brown Bullhead	16	24	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
BW	Goldfish	2	2	0.5000	0.3932	
WP	Goldfish	5	10	0.1020	0.2436	
5A	Smallmouth Bass	2	2	0.5000	0.5189	
5B	Chain Pickerel	1	1	0.0000	0.0000	No maximum likelihood estimate generated. All fish caught first pass.
5B	Redfin Pickerel	17	26	0.0000	0.0000	Non-descending capture. Unreliable results. See Note 1.
5C	Redfin Pickerel	1	1	0.0000	0.0000	No maximum likelihood estimate generated. All fish caught first pass.
5B	Black Crappie	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
BW	Black Crappie	3	3	0.4286	0.3537	
WP	Black Crappie	22	45	0.1043	0.1137	
WP	Yellow Bullhead	1	1	0.0000	0.0000	No maximum likelihood estimate generated. Only 1 fish caught.
5A	Total	244	341	0.5969	0.0682	
5B	Total	536	735	0.1570	0.0277	
5C	Total	825	1153	0.2440	0.0383	
BW	Total	1650	2306	0.1942	0.0672	
WP	Total	3507	4884	0.0484	0.0194	

Note 1: Maximum likelihood estimate terminated at 5 times the total catch. Estimate arbitrarily reset to 1.5 times total catch.

Population estimate termination was caused by non-descending removal pattern. Results should not be considered reliable.

Summary of Capture Probabilities by Reach and Size Class

Reach	Size Class	Multi-Pass Runs						Capture Probability	SE of CP
		1	2	3	4	5	6		
5A	<10 cm	1	2	2	--	--	--	5	0.143
	10-15 cm	6	4	4	--	--	--	14	0.318
	15-30 cm	24	8	4	--	--	--	36	0.655
	>30 cm	20	1	1	--	--	--	22	0.880
	Total	51	15	11	0	0	0	77	0.597

Reach	Size Class	Multi-Pass Runs						Capture Probability	SE of CP
		1	2	3	4	5	6		
5B	<10 cm	7	9	7	10	10	14	57	0.036
	10-15 cm	28	39	35	24	11	13	150	0.186
	15-30 cm	30	28	29	14	8	8	117	0.250
	>30 cm	2	2	2	3	1	1	11	0.186
	Total	67	78	73	51	30	36	335	0.157

Reach	Size Class	Multi-Pass Runs						Capture Probability	SE of CP
		1	2	3	4	5	6		
5C	<10 cm	9	1	2	4	3	--	19	0.279
	10-15 cm	29	28	20	14	7	--	98	0.275
	15-30 cm	23	18	21	16	6	--	84	0.209
	>30 cm	6	2	3	3	0	--	14	0.452
	Total	67	49	46	37	16	0	215	0.244

Reach	Size Class	Multi-Pass Runs						Capture Probability	SE of CP
		1	2	3	4	5	6		
BW	<10 cm	8	6	3	7	--	--	24	0.157
	10-15 cm	8	1	5	3	--	--	17	0.298
	15-30 cm	22	17	17	9	--	--	65	0.236
	>30 cm	5	2	4	3	--	--	14	0.203
	Total	43	26	29	22	0	0	120	0.194

Reach	Size Class	Multi-Pass Runs						Capture Probability	SE of CP
		1	2	3	4	5	6		
WP	<10 cm	89	55	70	79	60	92	445	0.036
	10-15 cm	36	38	34	42	39	33	222	0.036
	15-30 cm	25	29	23	20	18	17	132	0.102
	>30 cm	10	8	5	3	1	3	30	0.341
	Total	160	130	132	144	118	145	829	0.045

Note: For Woods Pond, CPs for <10 cm and 10-15 cm considered unreliable by MicroFish.

Backwaters

Species	Size/Age Class	Single-Pass Mean Biomass (g/m^2)	Total Biomass Estimate (g/m^2)	95% Conf. Interval	
				Lower	Upper
Predators					
Largemouth Bass	Age 0	0.0033	0.0132	0.0122	0.0142
	Age 1	0.0026	0.0104	0.0096	0.0112
	Age 2	0.0000	0.0000	0.0000	0.0000
	Age 3	0.0000	0.0000	0.0000	0.0000
	Age 4	0.0372	0.1489	0.1377	0.1600
	Age 5	0.0232	0.0928	0.0859	0.0998
	Age 6	0.0711	0.2845	0.2632	0.3058
	Age 7	0.1921	0.7688	0.7112	0.8262
	Age 8	0.1407	0.5631	0.5209	0.6052
	Age 9	0.0000	0.0000	0.0000	0.0000
	Age 10	0.0000	0.0000	0.0000	0.0000
Smallmouth Bass	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Northern Pike	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.1443	0.5775	0.5342	0.6206
Yellow Perch	<10 cm	0.0014	0.0056	0.0052	0.0060
	>10 cm	0.3753	1.5020	1.3894	1.6142
Chain Pickerel	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0199	0.0796	0.0737	0.0856
Redfin Pickerel	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Rainbow Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Brown Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Forage Fish					
Bluegill	<10 cm	0.0377	0.1509	0.1396	0.1622
	>10 cm	0.6479	2.5929	2.3985	2.7867
Rock Bass	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Pumpkinseed	<10 cm	0.0024	0.0096	0.0089	0.0103
	>10 cm	0.2908	1.1638	1.0765	1.2508
Cyprinids	<10 cm	0.0020	0.0080	0.0074	0.0086
	>10 cm	0.0000	0.0000	0.0000	0.0000
Black Crappie	<10 cm	0.0001	0.0004	0.0004	0.0004
	>10 cm	0.1797	0.7192	0.6652	0.7729
Bottom Feeders					
White Sucker	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0849	0.3398	0.3143	0.3652
Common Carp	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.7563	3.0267	2.7998	3.2529
Brown Bullhead	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.2417	0.9673	0.8948	1.0396
Goldfish	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.7111	2.8458	2.6325	3.0585
Totals		3.9657	15.8707		

Reach 5A

Species	Size/Age Class	Single-Pass Mean Biomass (g/m^2)	Total Biomass Estimate (g/m^2)	95% Conf. Interval	
				Lower	Upper
Predators					
Largemouth Bass	Age 0	0.0000	0.0000	0.0000	0.0000
	Age 1	0.0042	0.0168	0.0155	0.0181
	Age 2	0.0146	0.0584	0.0540	0.0628
	Age 3	0.0210	0.0840	0.0777	0.0903
	Age 4	0.0144	0.0576	0.0533	0.0619
	Age 5	0.0401	0.1605	0.1485	0.1725
	Age 6	0.1201	0.4806	0.4446	0.5166
	Age 7	0.1361	0.5447	0.5038	0.5854
	Age 8	0.0415	0.1661	0.1536	0.1785
	Age 9	0.0193	0.0772	0.0714	0.0830
	Age 10	0.0000	0.0000	0.0000	0.0000
Smallmouth Bass	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0112	0.0448	0.0415	0.0482
Northern Pike	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0940	0.3762	0.3480	0.4043
Yellow Perch	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.2296	0.9189	0.8500	0.9875
Chain Pickerel	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0124	0.0496	0.0459	0.0533
Redfin Pickerel	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0101	0.0404	0.0374	0.0434
Rainbow Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0140	0.0560	0.0518	0.0602
Brown Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0031	0.0124	0.0115	0.0133
Forage Fish					
Bluegill	<10 cm	0.0030	0.0120	0.0111	0.0129
	>10 cm	0.1021	0.4086	0.3780	0.4391
Rock Bass	<10 cm	0.0005	0.0020	0.0019	0.0022
	>10 cm	0.2358	0.9437	0.8729	1.0142
Pumpkinseed	<10 cm	0.0004	0.0016	0.0015	0.0017
	>10 cm	0.0121	0.0484	0.0448	0.0520
Cyprinids	<10 cm	0.0219	0.0876	0.0811	0.0942
	>10 cm	0.1873	0.7496	0.6934	0.8056
Black Crappie	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0045	0.0180	0.0167	0.0194
Bottom Feeders					
White Sucker	<10 cm	0.0002	0.0008	0.0007	0.0009
	>10 cm	2.5921	10.3736	9.5960	11.1489
Common Carp	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Brown Bullhead	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Goldfish	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Totals		3.9456	15.7903		

Reach 5B

Species	Size/Age Class	Single-Pass Mean Biomass (g/m^2)	Total Biomass Estimate (g/m^2)	95% Conf. Interval	
				Lower	Upper
Predators					
Largemouth Bass	Age 0	0.0005	0.0020	0.0019	0.0022
	Age 1	0.0067	0.0268	0.0248	0.0288
	Age 2	0.0146	0.0584	0.0540	0.0628
	Age 3	0.0163	0.0652	0.0603	0.0701
	Age 4	0.0068	0.0272	0.0252	0.0292
	Age 5	0.0133	0.0532	0.0492	0.0572
	Age 6	0.1135	0.4542	0.4202	0.4882
	Age 7	0.1603	0.6415	0.5934	0.6895
	Age 8	0.1036	0.4146	0.3835	0.4456
	Age 9	0.1052	0.4210	0.3895	0.4525
	Age 10	0.0272	0.1089	0.1007	0.1170
Smallmouth Bass	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0096	0.0384	0.0355	0.0413
Northern Pike	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.1496	0.5987	0.5538	0.6434
Yellow Perch	<10 cm	0.0003	0.0012	0.0011	0.0013
	>10 cm	0.6840	2.7374	2.5322	2.9420
Chain Pickerel	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0133	0.0532	0.0492	0.0572
Redfin Pickerel	<10 cm	0.0003	0.0012	0.0011	0.0013
	>10 cm	0.0171	0.0684	0.0633	0.0735
Rainbow Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Brown Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Forage Fish					
Bluegill	<10 cm	0.0074	0.0296	0.0274	0.0318
	>10 cm	0.1607	0.6431	0.5949	0.6912
Rock Bass	<10 cm	0.0014	0.0056	0.0052	0.0060
	>10 cm	0.1716	0.6867	0.6353	0.7381
Pumpkinseed	<10 cm	0.0020	0.0080	0.0074	0.0086
	>10 cm	0.0544	0.2177	0.2014	0.2340
Cyprinids	<10 cm	0.0338	0.1353	0.1251	0.1454
	>10 cm	0.0369	0.1477	0.1366	0.1587
Black Crappie	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0199	0.0796	0.0737	0.0856
Bottom Feeders					
White Sucker	<10 cm	0.0001	0.0004	0.0004	0.0004
	>10 cm	3.7199	14.8870	13.7711	15.9997
Common Carp	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.2792	1.1174	1.0336	1.2009
Brown Bullhead	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Goldfish	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0128	0.0512	0.0474	0.0551
Totals		5.9423	23.7811		

Reach 5C

Species	Size/Age Class	Single-Pass Mean Biomass (g/m^2)	Total Biomass Estimate (g/m^2)	95% Conf. Interval	
				Lower	Upper
Predators					
Largemouth Bass	Age 0	0.0017	0.0068	0.0063	0.0073
	Age 1	0.0015	0.0060	0.0056	0.0065
	Age 2	0.0217	0.0868	0.0803	0.0933
	Age 3	0.0361	0.1445	0.1336	0.1553
	Age 4	0.0439	0.1757	0.1625	0.1888
	Age 5	0.0594	0.2377	0.2199	0.2555
	Age 6	0.1674	0.6699	0.6197	0.7200
	Age 7	0.2460	0.9845	0.9107	1.0581
	Age 8	0.0508	0.2033	0.1881	0.2185
	Age 9	0.0737	0.2949	0.2728	0.3170
	Age 10	0.0193	0.0772	0.0714	0.0830
Smallmouth Bass	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Northern Pike	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.1108	0.4434	0.4102	0.4766
Yellow Perch	<10 cm	0.0023	0.0092	0.0085	0.0099
	>10 cm	0.4672	1.8697	1.7296	2.0095
Chain Pickerel	<10 cm	0.0001	0.0004	0.0004	0.0004
	>10 cm	0.0468	0.1873	0.1733	0.2013
Redfin Pickerel	<10 cm	0.0005	0.0020	0.0019	0.0022
	>10 cm	0.0075	0.0300	0.0278	0.0323
Rainbow Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Brown Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Forage Fish					
Bluegill	<10 cm	0.0273	0.1093	0.1011	0.1174
	>10 cm	0.3256	1.3031	1.2054	1.4004
Rock Bass	<10 cm	0.0017	0.0068	0.0063	0.0073
	>10 cm	0.2502	1.0013	0.9262	1.0761
Pumpkinseed	<10 cm	0.0096	0.0384	0.0355	0.0413
	>10 cm	0.1225	0.4902	0.4535	0.5269
Cyprinids	<10 cm	0.0113	0.0452	0.0418	0.0486
	>10 cm	0.0159	0.0636	0.0589	0.0684
Black Crappie	<10 cm	0.0006	0.0024	0.0022	0.0026
	>10 cm	0.0492	0.1969	0.1821	0.2116
Bottom Feeders					
White Sucker	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	1.0149	4.0616	3.7572	4.3652
Common Carp	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.4444	1.7785	1.6452	1.9114
Brown Bullhead	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0523	0.2093	0.1936	0.2249
Goldfish	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0082	0.0328	0.0304	0.0353
Totals		3.6904	14.7690		

Woods Pond

Species	Size/Age Class	Single-Pass Mean Biomass (g/m^2)	Total Biomass Estimate (g/m^2)	95% Conf. Interval	
				Lower	Upper
Predators					
Largemouth Bass	Age 0	0.0025	0.0100	0.0093	0.0108
	Age 1	0.0061	0.0244	0.0226	0.0262
	Age 2	0.0069	0.0276	0.0255	0.0297
	Age 3	0.0162	0.0648	0.0600	0.0697
	Age 4	0.0000	0.0000	0.0000	0.0000
	Age 5	0.0269	0.1077	0.0996	0.1157
	Age 6	0.0431	0.1725	0.1596	0.1854
	Age 7	0.0452	0.1809	0.1673	0.1944
	Age 8	0.0000	0.0000	0.0000	0.0000
	Age 9	0.0000	0.0000	0.0000	0.0000
	Age 10	0.0322	0.1289	0.1192	0.1385
Smallmouth Bass	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Northern Pike	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0286	0.1145	0.1059	0.1230
Yellow Perch	<10 cm	0.0023	0.0092	0.0085	0.0099
	>10 cm	0.3990	1.5968	1.4771	1.7161
Chain Pickerel	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0030	0.0120	0.0111	0.0129
Redfin Pickerel	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0008	0.0032	0.0030	0.0034
Rainbow Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Brown Trout	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.0000	0.0000	0.0000	0.0000
Forage Fish					
Bluegill	<10 cm	0.0662	0.2649	0.2451	0.2847
	>10 cm	0.4525	1.8109	1.6752	1.9462
Rock Bass	<10 cm	0.0018	0.0072	0.0067	0.0077
	>10 cm	0.0585	0.2341	0.2166	0.2516
Pumpkinseed	<10 cm	0.0103	0.0412	0.0381	0.0443
	>10 cm	0.0854	0.3418	0.3162	0.3673
Cyprinids	<10 cm	0.0001	0.0004	0.0004	0.0004
	>10 cm	0.0064	0.0256	0.0237	0.0275
Black Crappie	<10 cm	0.0002	0.0008	0.0007	0.0009
	>10 cm	0.0030	0.0120	0.0111	0.0129
Bottom Feeders					
White Sucker	<10 cm	0.0000	0.0000	0.0000	0.0000
	>10 cm	0.1450	0.5803	0.5368	0.6237
Common Carp	<10 cm	0.0003	0.0012	0.0011	0.0013
	>10 cm	0.0000	0.0000	0.0000	0.0000
Brown Bullhead	<10 cm	0.0005	0.0020	0.0019	0.0022
	>10 cm	0.4193	1.6780	1.5522	1.8035
Goldfish	<10 cm	0.0007	0.0028	0.0026	0.0030
	>10 cm	0.2160	0.8644	0.7996	0.9290
Totals		2.0790	8.3202		