Appendix A. A brief explanation of catch per unit effort (CPUE), proportional stock density (PSD), relative stock density (RSD) and relative weight (Wr).

Catch Per Unit Effort (CPUE) is the catch of fish or animals in numbers or weight taken by a defined period of effort. In fisheries most commonly refers to trap-net nights of effort, gill-net nights of effort, or catch per one hour of electrofishing.

Proportional Stock Density (PSD) is calculated by the following formula:

$$PSD = \frac{\text{Number of fish} > \text{quality length}}{\text{Number of fish} \geq \text{stock length}} \times 100$$

Relative Stock Density (RSD-P) is calculated by the following formula:

$$RSD = \frac{\text{Number of fish} > \text{preferred length}}{\text{Number of fish} \geq \text{stock length}} \times 100$$

PSD and RSD are unitless and usually calculated to the nearest whole digit.

Size categories for selected species found in South Dakota lakes in centimeters

Species	Stock	Quality	Preferred	Memorable	Trophy
Walleye	25	38	51	63	76
Sauger	20	30	38	51	63
Yellow perch	13	20	25	30	38
Black crappie	13	20	25	30	38
White crappie	13	20	25	30	38
Bluegill	8	15	20	25	30
Largemouth bass	20	30	38	51	63
Smallmouth bass	18	28	35	43	51
Northern Pike	35	53	71	86	112
Channel catfish	28	41	61	71	91
Black bullhead	15	23	30	38	46
Common carp	28	41	53	66	84
Bigmouth buffalo	28	41	53	66	84
Smallmouth buffalo	28	41	53	66	84

For most fish, a PSD of 30-60 or 40-70 are the typical objective ranges for a "balanced" population. Values less than the objective range indicate a population dominated by small fish while values greater than the objective range indicate a population comprised mainly of large fish.

Relative Weight (Wr) is a condition index that quantifies fish condition (i.e. how much the fish weighs for its length). A Wr range of 90-100 is a typical objective for most fish species. When mean Wr values are below 90 for a size group the fish are considered underweight for their length, and problems may exist in food supplies and predator/prey relationships. When mean Wr values are well above 100 for a size group, available food sources may be much larger that being utilized by fishes.