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LENGTH-WEIGHT RELATIONSHIPS FOR COMMERCIAL FISH SPECIES
AND CONVERSION FACTORS FOR VARIOUS PRESENTATIONS

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1. INTRODUCTION

Most international institutions responsible for publishing fisheries statistics (FAO, ICES, NAFO, etc.) require that data of the weight of landed catch be reported as the whole or live weight of the fish. To obtain this information directly is often impossible since fishermen eviscerate the fish either wholly or partially, immediately after capture to preserve them in good condition. With some types of vessels and with some species, further processing such as heading or filleting and freezing may also be carried out at sea. Hence, the quantity that is reported is often the weight of fish in any one of a number of different landed presentations. Clearly, before these can be presented for publication some factor or factors are needed to convert these landed weights into the required ones of whole weight. Equally clearly, such factors are different for each species and for each different form of landed presentation.

Landings statistics for England and Wales are processed and submitted to international organisations in this way using conversion factors that have been in use and remained unchanged for many years. The origins of these factors in many cases are uncertain, the data used to determine them having been either unrecorded, lost or destroyed. It is suspected, however, that for some species the factors that have been used were not based on observed data but were 'derived' from those used for other, similar species. Thus a single conversion factor has been in use for a number of roundfish species for many years and, similarly, a common single factor has been used for many of the flatfish.

With such uncertainties as to origin and accuracy, together with a present need for rapid accurate calculation of total weights for quota management implementation, it was thought appropriate to review the conversion factors for all the commercial species commonly landed in the UK. Consequently, during the past few years data have been collected whenever fresh whole fish have been available and suitable conditions for doing the work have prevailed. The results of this work are presented here.

2. METHODS

Consideration was given to those factors that could have significant influence on the relationship between whole and landed weights. The more important of these were thought to be:

- (i) seasonal variations in body condition particularly in large sexually mature fish;

- (ii) fish size;
- (iii) sex;
- (iv) stock or area of origin.

Whilst it was clear that the first three of these factors would probably have considerable bearing on results it was by no means obvious in the case of the last. Also, it was obvious that to extend the study to try to accommodate any possible stock differences would be to enlarge it to one of unmanageable size. Hence, it was decided that data for the same species would be combined, irrespective of area of origin. To accommodate the other considerations it was decided to:

- (i) obtain data for each quarter of the year separately, i.e. Jan-Mar, Apr-Jun, Jul-Sept, Oct-Dec;
- (ii) obtain data for the complete length range of each species, setting objectives of preferred minimum numbers for each 5 cm length group;
- (iii) obtain data for both sexes equally.

Because the numbers required were so large - 20 fish/length group/sex/quarter year were considered to be a practical minimum - it was found that in most cases sufficient fish could not easily be obtained in any one quarter of a single year. Hence, the results presented here are usually aggregated data obtained in a number of different years between 1978 and 1982.

It was an important requirement that fish for this study should be both fresh and whole. This sets constraints on sources for obtaining material. Ideally, measurements and weights should be taken as soon as possible after capture but to do so presented considerable difficulties. Accurate weighting - to the nearest gram - is rarely possible at sea because all balances are affected by ship's motion and perfectly still conditions seldom prevail. Hence, it was not possible to use freshly caught fish aboard normal fishing commercial vessels. Likewise, because of the long duration of most commercial voyages it was not possible to preserve whole fish in quantity from these catches for processing later ashore. The one exception to this was spurdogfish. These are often landed whole at a number of British fish markets from short duration (1-2 days) voyages. Thus, all the spurdogfish data were obtained from fish landed fresh this way at Lowestoft market.

Occasions were found when fishermen, carrying out very short (less than 12 hours) voyages, were prepared to bring back to port whole fish specially selected for the work. These were then measured and weighed ashore immediately after the ship returned. All of the data for sole,

pout whiting and thornback ray were obtained in this way; for lemon sole and pollack, approximately 90% of the data were obtained from this source.

For all of the remaining species, fish were obtained almost exclusively from research vessel catches. Two different methods were used to process these fish depending largely on the area of capture. When the ship was fishing grounds close to a sheltered anchorage, all of the fish required for this study that were caught during the day were retained whole on board in cool conditions. At the end of fishing operations each day the ship proceeded to anchorage where, in still conditions, measurements and weighings were made with the required accuracy. The maximum period that any fish was held between capture and weighing was 18 hours.

Where fish were taken on distant grounds, when conditions were unsuitable to make observations immediately, specimens were selected and quick frozen as soon as possible after capture. When this method was employed, each fish was measured and then kept separate in a plastic bag before freezing. At the end of each cruise the fish were returned to the laboratory and, after thawing, the appropriate weights were obtained. With this method the fish length, as measured at sea, was taken as the true length. A minor variation to this procedure, employed on some occasions, was to dissect specimens at sea immediately after capture in order to facilitate the weighing process ashore. When this practice was used, each separate component of the whole fish (i.e. head, body, viscera, stomach/intestine contents) was sealed in individual plastic bags within one large bag and then frozen.

The observations made for each individual fish were as follows:

- (a) species;
- (b) time of capture = year and quarter;
- (c) area of capture = ICES division;
- (d) total length, measured to the nearest centimetre below, i.e.
45 cm = 45.0 to 45.9 cm;
- (e) sex and maturity stage;
- (f) whole weight = as caught;
- (g) evacuated weight = as for whole fish but with the contents of stomach and intestine removed;
- (h) gutted weight = eviscerated according to the usual commercial practice, i.e. for roundfish total removal of the contents of the body cavity including gonads, for flatfish total removal of the same but excepting the gonads;

(j) other weights = various other presentations involving further processing before landing and used in commercial practice for particular species, i.e:

- (i) various gadoids are occasionally landed gutted, (h) above, but with the head removed. Fish in this condition are referred to throughout as 'headless';
- (ii) monkfish or anglers are usually landed gutted and with the head removed by severing the body as close as possible to the anterior end of the vertebral column. Fish in this condition are referred to throughout as 'monkfish tails';
- (iii) spurdogfish are occasionally landed totally processed with heads, tails and dorsal fins removed and the body then skinned. Fish in this condition are referred to throughout as 'spurdogfish tails';
- (iv) skates and rays are often landed with the central body section and the tail completely removed. Fish in this condition are referred to throughout as 'wings'.

All weights were made to the nearest gram. In preparing fish for weighing, in all the presentations outlined above under (j), the customary commercial practices of cutting the fish have been followed as closely as possible.

3. DATA PROCESSING

Data were analysed using the Ministry's ICL 2966 computer. The analysis was broken down into three sections:

- A data validation;
- B updating of individual species data files;
- C calculation of simple statistics for lengths, weights, conversion factors, condition factors, and the determination of weight-length relationships;

Validation covered the sample descriptive information, e.g. species identification code, sampling area, time of capture, as well as individual fish data. The latter had the following checks made on them:

- (a) lengths to lie in the range 15-150 cm;
- (b) weights to be in the order whole > evacuated > gutted > 'other';
- (c) condition factors ($\text{weight} \times 100 / (\text{length})^3$) to lie within $\pm 50\%$ of given condition factor values for the respective presentation, while checks were also made on maturity stage (1-8) and sex code (M/F/U - male, female and unsexed respectively) values.

Within each sample data were sorted into female, male or unsexed categories and then arranged in length order, before being written to the species data file where they were held by year, period and area of capture.

The following statistics were derived for each 5 cm group within the length distribution:

- (i) Mean length. As the fish lengths were recorded to the nearest centimetre below total length, 0.5 was added to convert the raw length values to measurements to the nearest centimetre (the assumption being that within each centimetre interval values are evenly spaced and will take, on average, the mid-interval value). In all subsequent calculations involving length, the adjusted and not the raw length values were used.
- (ii) Mean weight and standard deviations.
- (iii) Mean conversion and condition factors with their standard deviations and coefficients of variation ($\frac{\text{standard deviation}}{\text{mean}} \times 100\%$). Up to six conversion factors (dependent on the number of presentations for a species) were estimated, namely
 - whole/evacuated evacuated/gutted gutted/other
 - whole/gutted evacuated/other
 - whole/other
 while condition factors were derived for all weight types.

The above statistics were derived by quarter for sexed and unsexed categories. These estimates were based on individual fish observations, such that the average factor for a length group was the arithmetic mean of all the individual fish factor estimates within the group. Corresponding annual estimates were determined as follows:

$$\bar{X}_{i.} = \frac{\sum_{j=1}^4 \bar{x}_{ij}}{m} \quad (1)$$

$$SD_{i.} = \sqrt{\frac{\sum_{j=1}^4 \sigma_{ij}^2}{m} + \frac{\sum_{j=1}^4 (\bar{x}_{ij} - \bar{X}_{i.})^2}{m}} \quad (2)$$

where $\bar{X}_{i.}$ = length group i annual mean

$SD_{i.}$ = " " " " standard deviation

\bar{x}_{ij} = " " " " quarter j mean

σ_{ij}^2 = " " " " " variance

m = number of quarters sampled.

(note if quarter j is not sampled then $\bar{x}_{ij} = 0 = \sigma_{ij}^2$ in equations (1) and (2).)

In addition to individual 5 centimetre grouping values, estimates of means, standard deviations and coefficients of variation were also determined on a total sample basis for the conversion and condition factors.

$$\text{i.e. } \bar{X}_{.j} = \frac{\sum_{i=1}^L n_{ij} \bar{x}_{ij}}{N} \quad (3)$$

$$SD_{.j} = \sqrt{\frac{\sum_{i=1}^L ((n_{ij}-1)\sigma_{ij}^2 + n_{ij} \bar{x}_{ij}^2) - N\bar{X}_{.j}^2}{N-1}} \quad (4)$$

where $\bar{X}_{.j}$ = quarter j sample mean

$SD_{.j}$ = " " " variance

n_{ij} = " " length group i sample size

$$N = \text{total sample size} = \sum_{i=1}^L n_{ij}$$

L = number of 5 cm groupings in quarter j length distribution while corresponding values were also derived on an annual basis as before.

Finally quarterly and annual weight-length relationships

$$W = aL^b \quad (5)$$

where W = whole weight (g)

$$L = (\text{measured}) \text{ length} + 0.5 \text{ (cm)}$$

were determined by sex and for sexes combined. The calculation of an estimate of the standard error of b enables the departure of b from the assumed cubic value to be examined via the t -test. Furthermore, these values also readily lend themselves to be used in a comparison of quarterly weight-length relationships to illustrate any sex/seasonal difference. In general, variations in b values were seasonal (values increasing in magnitude in the quarterly sequence 3, 2, 1, 4) with limited sex variation.

The computer analysis permits the processing of species data to be carried out either on a selected areas or all areas combined basis.

4. RESULTS

Because of the variability in availability of different species, comprehensive data sets have been obtained for the more common species such as cod, haddock, spurdogfish and plaice, while for some species, data are scant, representing only a few fish. A list of the 27 species included in the present study, together with the total number of specimens examined is

given in Table 1. Despite the paucity of data in some cases it is considered appropriate to publish all the results now with the proviso that more data will be obtained whenever possible for the poorly represented species and that further updating may be made from time to time.

From these data the relationship between whole weight and the weight of various landed presentations, appropriate to each species, have been determined. These results are summarised in Table 2 which shows conversion factors for each species relating each presentation to whole weight. For each species a single factor is given for each relationship, these being derived by combining data for fish of all sizes, for both sexes, for all periods of the year and from all areas. In all cases the values are given to two decimal places and are considered to be appropriate factors for regular use in the conversion of landings statistics for publication.

The data have also been used to determine condition factors for each species, based upon whole weight and following the equation

$$W = aL^b.$$

A summary of these results is given in Table 3 which shows values for the coefficient 'a' when $b = 3$ (the cubic relation) and for both 'a' and 'b' as derived from the fitted regression of whole weight on length. These values have also been obtained by combining data for fish of all sizes, of both sexes, for all periods of the year and from all areas.

Also determined and presented here are detailed results showing the effect of fish size on various relationships. These appear in Tables 4-30 where, for each 5 cm length group covering the length range of each species, three tables have been prepared for each showing:

- (a) the number of fish sampled, mean length, and mean weight for each form of presentation;
- (b) factors for conversion from one form of presentation to another, together with overall (all length groups combined) average factors;
- (c) condition factors for each form of presentation using the relationship $W = aL^b$ together with overall average condition factors.

In all of these tables data for both sexes, for all periods of the year, and from all areas are combined to determine the values given.

Finally separate tables have been prepared to the same format as in a, b, and c, above but in greater detail, giving values for each sex separately and for each quarter of the year (i.e. 8 tables). For reasons of space and their limited application these tables are not included here but are available on request if required for particular precise application.

Table 1 Species included in the study

English name	Scientific name	Number of specimens
1. Cod	<u>Gadus morhua</u>	1 033
2. Haddock	<u>Melanogrammus aeglefinus</u>	793
3. Whiting	<u>Merlangius merlangus</u>	393
4. Saithe	<u>Pollachius virens</u>	481
5. Pollack	<u>Pollachius pollachius</u>	158
6. Hake	<u>Merluccius merluccius</u>	216
7. Pout whiting	<u>Trisopterus luscus</u>	143
8. Ling	<u>Molva molva</u>	211
9. Torsk	<u>Brosme brosme</u>	7
10. Catfish	<u>Anarhichas lupus</u>	67
11. Plaice	<u>Pleuronectes platessa</u>	453
12. Sole	<u>Solea solea</u>	361
13. Lemon sole	<u>Microstomus kitt</u>	331
14. Dab	<u>Limanda limanda</u>	170
15. Megrim	<u>Lepidorhombus whiffiagonis</u>	286
16. Witch	<u>Glyptocephalus cynoglossus</u>	75
17. Flounder	<u>Platichthys flesus</u>	159
18. Turbot	<u>Scophthalmus maximus</u>	242
19. Brill	<u>Scophthalmus rhombus</u>	22
20. Monk	<u>Lophius piscatorius</u>	220
21. John Dory	<u>Zeus faber</u>	54
22. Spurdog	<u>Squalus acanthias</u>	691
23. Thornback ray	<u>Raia clavata</u>	74
24. Blonde ray	<u>Raia brachyura</u>	9
25. Spotted ray	<u>Raia montagui</u>	38
26. Cuckoo ray	<u>Raia naevus</u>	40
27. Starry ray	<u>Raia radiata</u>	16
	TOTAL	6 743

Table 2 Summary table of conversion factors (whole weight = landed weight x factor)

Species	Presentation at landing	
	Gutted	Other
1. Cod	1.15	
2. Haddock	1.16	
3. Whiting	1.14	
4. Saithe	1.20	
5. Pollack	1.14	
6. Hake	1.12	
7. Pout whiting	1.12	
8. Ling	1.13	
9. Torsk	1.13	
10. Catfish	1.18	
11. Plaice	1.06	
12. Sole	1.05	
13. Lemon sole	1.04	
14. Dab	1.08	
15. Megrin	1.06	
16. Witch	1.04	
17. Flounder	1.08	
18. Turbot	1.07	
19. Brill	1.05	
20. Monk	1.28	3.45 (tails)
21. John Dory	1.18	
22. Spurdog	1.30	2.57 (gutted, headed and skinned)
23. Thornback ray	1.12	2.09 (wings)

Table 3 Summary table of condition factors

W = weight (whole weight, g)

l = length (cm)

W = $a \cdot l^{b3}$

Species	Cubic exponent (b=3)		Fitted regression	
	a		a	b
1. Cod	0.01014		0.00700	3.087
2. Haddock	0.00951		0.00618	3.115
3. Whiting	0.00811		0.00556	3.104
4. Saithe	0.00893		0.01033	2.963
5. Pollack	0.00987		0.01006	2.993
6. Hake	0.00684		0.00974	2.913
7. Pout whiting	0.01320		0.01049	3.069
8. Ling	0.00561		0.00407	3.070
9. Torsk	0.01105		0.00514	3.189
10. Catfish	0.00937		0.00268	3.302
11. Plaice	0.01075		0.00890	3.053
12. Sole	0.00961		0.00762	3.068
13. Lemon sole	0.01234		0.00756	3.142
14. Dab	0.01059		0.00545	3.195
15. Megrin	0.00801		0.00245	3.321
16. Witch	0.00638		0.00106	3.496
17. Flounder	0.01090		0.01249	2.968
18. Turbot	0.02101		0.01508	3.090
19. Brill	0.01471		0.02492	2.857
20. Monk	0.01420		0.03179	2.797
21. John Dory	0.01641		0.00246	3.510
22. Spurdog	0.00380		0.00077	3.371
23. Thornback ray	0.00671		0.00216	3.268
24. Blonde ray	0.00734		0.00422	3.132
25. Spotted ray	0.00685		0.00270	3.230
26. Cuckoo ray	0.00630		0.00089	3.486
27. Starry ray	0.00733		0.15665	2.190

Table 4 Cod

SPECIES	COD	AREA	COMBINED	SEX	COMBINED	PERIOD	ANNUAL
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT HEADLESS	
20. - 24.9	3	22.2	82	79	75		
25. - 29.9	9	28.7	218	213	199		
30. - 34.9	62	32.2	311	300	279	270	
35. - 39.9	92	37.5	527	505	465	383	
40. - 44.9	83	42.9	797	766	702	563	
45. - 49.9	81	47.4	1054	1024	930	677	
50. - 54.9	78	52.6	1448	1401	1281	916	
55. - 59.9	77	57.5	1878	1824	1667	1359	
60. - 64.9	70	62.5	2527	2448	2206	1644	
65. - 69.9	73	67.5	3173	3069	2765	2225	
70. - 74.9	80	72.4	3941	3789	3396	2789	
75. - 79.9	55	77.4	4768	4624	4098	3264	
80. - 84.9	59	82.7	6018	5844	5075	4017	
85. - 89.9	56	87.5	7248	7033	6178	4415	
90. - 94.9	67	92.7	8276	8082	6966	5375	
95. - 99.9	38	96.9	9409	9211	7878	5985	
100. - 104.9	23	102.2	11891	10881	9193	6850	
105. - 109.9	20	107.4	12931	12662	10711	7836	
110. - 114.9	5	112.7	15022	14647	12246	9488	
115. - 119.9	1	117.5	16378	15569	13190	10009	
120. - 124.9							
125. - 129.9	1	127.5	19153	18961	14799	11370	

TOTAL 1033

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.088	0.015	1.4	1.028	0.015	1.5						
25. - 29.9	1.097	0.012	1.1	1.023	0.010	1.0						
30. - 34.9	1.111	0.038	3.4	1.036	0.023	2.2	1.255	0.026	2.0	1.376	0.027	1.9
35. - 39.9	1.133	0.055	4.9	1.043	0.032	3.1	1.269	0.025	2.0	1.432	0.038	2.6
40. - 44.9	1.136	0.052	4.6	1.048	0.038	3.7	1.270	0.037	2.9	1.423	0.066	4.6
45. - 49.9	1.122	0.041	3.7	1.029	0.025	2.5	1.267	0.024	1.9	1.409	0.055	3.9
50. - 54.9	1.129	0.048	4.2	1.033	0.030	2.9	1.288	0.019	1.5	1.446	0.027	1.9
55. - 59.9	1.125	0.047	4.2	1.029	0.027	2.6	1.296	0.031	2.4	1.460	0.082	5.6
60. - 64.9	1.144	0.048	4.2	1.032	0.026	2.5	1.285	0.026	2.1	1.473	0.087	5.9
65. - 69.9	1.146	0.042	3.7	1.033	0.025	2.4	1.278	0.033	2.6	1.465	0.053	3.6
70. - 74.9	1.160	0.051	4.4	1.041	0.030	2.9	1.254	0.094	7.5	1.486	0.166	11.8
75. - 79.9	1.163	0.071	6.1	1.031	0.027	2.6	1.305	0.019	1.5	1.467	0.041	2.8
80. - 84.9	1.193	0.143	12.0	1.031	0.032	3.1	1.336	0.053	3.9	1.538	0.117	7.6
85. - 89.9	1.173	0.057	4.8	1.030	0.027	2.6	1.332	0.050	3.7	1.564	0.125	8.0
90. - 94.9	1.188	0.063	5.3	1.024	0.025	2.4	1.311	0.031	2.3	1.546	0.060	4.4
95. - 99.9	1.193	0.069	5.8	1.022	0.022	2.1	1.312	0.028	2.1	1.537	0.078	5.1
100. - 104.9	1.207	0.091	7.5	1.021	0.029	2.8	1.346	0.077	5.7	1.631	0.110	6.7
105. - 109.9	1.220	0.069	5.7	1.021	0.025	2.5	1.352	0.085	6.3	1.636	0.175	10.7
110. - 114.9	1.228	0.025	2.0	1.025	0.021	2.1	1.343	0.068	5.0	1.640	0.069	4.2
115. - 119.9	1.242	0.000	0.0	1.052	0.000	0.0	1.307	0.000	0.0	1.623	0.000	0.0
120. - 124.9												
125. - 129.9	1.294	0.000	0.0	1.010	0.000	0.0	1.302	0.000	0.0	1.605	0.000	0.0
AVERAGE	1.150	0.060	5.9	1.033	0.029	2.8	1.307	0.054	4.2	1.521	0.119	7.8

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	0.747	0.033	4.4	0.727	0.034	4.6	0.607	0.033	4.8			
25. - 29.9	0.911	0.003	9.2	0.890	0.008	9.0	0.830	0.075	9.0			
30. - 34.9	0.917	0.116	12.6	0.885	0.112	12.7	0.825	0.091	11.0	0.755	0.066	8.7
35. - 39.9	0.992	0.125	12.6	0.951	0.117	12.3	0.876	0.099	11.3	0.679	0.032	4.6
40. - 44.9	1.010	0.113	11.1	0.971	0.101	10.4	0.889	0.086	9.7	0.691	0.078	11.3
45. - 49.9	0.990	0.107	10.8	0.963	0.103	10.7	0.881	0.081	9.1	0.672	0.098	14.6
50. - 54.9	0.992	0.098	9.9	0.959	0.084	8.8	0.870	0.067	7.6	0.646	0.029	4.5
55. - 59.9	0.980	0.100	10.9	0.960	0.100	10.4	0.877	0.076	8.6	0.718	0.057	7.9
60. - 64.9	1.031	0.121	11.8	0.999	0.114	11.4	0.901	0.091	10.1	0.685	0.045	6.5
65. - 69.9	1.033	0.112	10.9	0.999	0.102	10.2	0.900	0.081	9.0	0.734	0.098	13.4
70. - 74.9	1.059	0.109	10.5	0.999	0.104	10.4	0.895	0.082	9.2	0.729	0.072	9.9
75. - 79.9	1.026	0.125	12.2	0.995	0.123	12.4	0.882	0.087	9.9	0.694	0.054	7.7
80. - 84.9	1.063	0.131	12.3	1.031	0.129	12.5	0.896	0.119	13.3	0.699	0.105	15.0
85. - 89.9	1.079	0.157	14.6	1.048	0.156	14.9	0.919	0.123	13.3	0.651	0.103	15.8
90. - 94.9	1.040	0.113	10.9	1.015	0.106	10.5	0.875	0.083	9.5	0.676	0.068	10.0
95. - 99.9	1.034	0.135	13.0	1.012	0.133	13.1	0.865	0.092	10.7	0.658	0.071	10.0
100. - 104.9	1.039	0.131	12.6	1.020	0.136	13.3	0.861	0.088	10.2	0.638	0.084	13.2
105. - 109.9	1.043	0.118	11.3	1.022	0.115	11.3	0.864	0.079	9.1	0.634	0.065	10.2
110. - 114.9	1.050	0.065	6.2	1.024	0.054	5.3	0.856	0.069	8.0	0.645	0.060	9.4
115. - 119.9	1.010	0.000	0.0	0.960	0.000	0.0	0.813	0.000	0.0	0.622	0.000	0.0
120. - 124.9												
125. - 129.9	0.924	0.000	0.0	0.915	0.000	0.0	0.714	0.000	0.0	0.549	0.000	0.0
AVERAGE	1.014	0.124	12.2	0.982	0.118	12.0	0.881	0.091	10.4	0.674	0.079	11.7

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.097 A = 0.00653 CORR. COEFF. = 0.996
 STD ERROR (B) = 0.00098
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 9.88
 DEGREES OF FREEDOM = 1031

Table 5 Haddock

SPECIES		HADDOCK					
AREA		COMBINED					
SEX		COMBINED					
PERIOD		ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT HEADLESS	
15. - 19.9	1	16.5	42	31	29		
20. - 24.9	36	23.6	119	115	104		
25. - 29.9	100	27.9	200	192	174		
30. - 34.9	117	32.6	324	310	280		
35. - 39.9	118	37.5	505	487	437	324	
40. - 44.9	142	42.5	740	712	635	448	
45. - 49.9	104	47.2	1038	996	889	794	
50. - 54.9	88	52.1	1402	1359	1187	942	
55. - 59.9	42	57.3	1835	1788	1552	1260	
60. - 64.9	20	62.1	2232	2167	1909	1459	
65. - 69.9	12	66.7	2701	2700	2394	1906	
70. - 74.9	5	71.8	3515	3333	2888	1915	

TOTAL 793

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
15. - 19.9	1.448	0.000	0.0	1.355	0.000	0.0						
20. - 24.9	1.144	0.049	4.3	1.039	0.025	2.4						
25. - 29.9	1.152	0.061	5.3	1.042	0.056	5.4						
30. - 34.9	1.155	0.043	3.7	1.043	0.032	3.1						
35. - 39.9	1.153	0.032	2.7	1.035	0.019	1.9	1.300	0.044	3.4	1.531	0.101	6.6
40. - 44.9	1.165	0.040	3.5	1.039	0.026	2.5	1.270	0.016	1.3	1.448	0.067	4.7
45. - 49.9	1.166	0.040	3.4	1.041	0.030	2.9	1.255	0.054	4.3	1.476	0.072	4.8
50. - 54.9	1.183	0.046	3.9	1.033	0.024	2.3	1.243	0.046	3.7	1.464	0.067	4.6
55. - 59.9	1.181	0.050	4.2	1.026	0.017	1.7	1.243	0.031	2.5	1.456	0.032	2.2
60. - 64.9	1.166	0.061	5.2	1.030	0.018	1.7	1.245	0.066	5.3	1.422	0.074	5.2
65. - 69.9	1.162	0.045	3.9	1.026	0.022	2.1	1.271	0.051	4.0	1.464	0.088	6.0
70. - 74.9	1.212	0.092	7.6	1.051	0.036	3.4	1.304	0.049	3.8	1.564	0.134	8.5
AVERAGE	1.163	0.040	4.1	1.038	0.034	3.2	1.250	0.047	3.7	1.462	0.067	4.6

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
15. - 19.9	0.935	0.000	0.0	0.690	0.000	0.0	0.646	0.000	0.0			
20. - 24.9	0.900	0.169	18.8	0.865	0.150	17.3	0.784	0.121	15.4			
25. - 29.9	0.912	0.081	8.8	0.877	0.081	9.3	0.793	0.072	9.1			
30. - 34.9	0.928	0.093	10.0	0.890	0.084	9.5	0.804	0.073	9.1			
35. - 39.9	0.953	0.090	9.4	0.921	0.084	9.1	0.826	0.073	8.8	0.589	0.024	4.0
40. - 44.9	0.961	0.097	10.1	0.924	0.085	9.2	0.824	0.074	8.9	0.601	0.062	10.3
45. - 49.9	0.981	0.109	11.1	0.942	0.096	10.2	0.841	0.088	10.5	0.683	0.110	16.1
50. - 54.9	0.980	0.093	9.4	0.958	0.094	9.8	0.836	0.077	9.2	0.664	0.088	13.3
55. - 59.9	0.973	0.120	12.4	0.949	0.114	12.0	0.823	0.088	10.6	0.663	0.071	10.8
60. - 64.9	0.933	0.155	16.7	0.906	0.149	16.4	0.798	0.106	13.3	0.608	0.083	13.7
65. - 69.9	0.940	0.132	14.1	0.916	0.125	13.7	0.809	0.100	13.3	0.642	0.062	9.6
70. - 74.9	0.951	0.175	18.4	0.901	0.143	15.9	0.780	0.101	12.9	0.524	0.088	16.7
AVERAGE	0.951	0.107	11.2	0.916	0.100	10.9	0.817	0.083	10.1	0.652	0.087	13.4

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.133 A = 0.00558 CORR. COEFF. = 0.992
 STD ERROR (B) = 0.0141
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 9.39
 DEGREES OF FREEDOM = 791

Table 6 Ling

SPECIES	LING					

AREA	COMBINED					
SEX	COMBINED					
PERIOD	ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT HEADLESS
30. - 34.9	2	32.0	164	164	152	
35. - 39.9	4	38.2	284	281	262	
40. - 44.9	5	42.8	413	411	380	336
45. - 49.9	5	46.8	559	556	511	
50. - 54.9	10	52.4	796	787	714	563
55. - 59.9	11	57.5	1015	1008	923	815
60. - 64.9	20	62.1	1332	1326	1221	1008
65. - 69.9	14	68.3	1748	1734	1571	1284
70. - 74.9	15	72.2	2139	2125	1908	1649
75. - 79.9	21	77.4	2728	2713	2383	1956
80. - 84.9	16	82.3	3181	3169	2776	2482
85. - 89.9	16	87.5	3879	3857	3392	2594
90. - 94.9	18	92.3	4386	4347	3786	2978
95. - 99.9	11	97.3	5148	5069	4570	3787
100. - 104.9	10	102.2	5669	5627	5062	4389
105. - 109.9	6	107.0	7025	6944	5842	5050
110. - 114.9	10	112.2	8534	8486	7140	5733
115. - 119.9	6	117.0	9681	9608	8311	7232
120. - 124.9	5	121.5	9178	9131	8341	7267
125. - 129.9	1	125.5	12322	12170	8925	7644
130. - 134.9	1	131.5	14567	14514	11470	9883
135. - 139.9	1	139.5	13957	13946	12440	10304
140. - 144.9	3	142.8	16495	16103	14522	12153

TOTAL 211

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
30. - 34.9	1.078	0.004	0.4	1.003	0.003	0.3						
35. - 39.9	1.085	0.023	2.1	1.010	0.007	0.7						
40. - 44.9	1.086	0.024	2.3	1.005	0.002	0.2	1.164	0.000	0.0	1.206	0.000	0.0
45. - 49.9	1.093	0.014	1.2	1.005	0.003	0.3						
50. - 54.9	1.113	0.068	6.1	1.011	0.008	0.8	1.305	0.000	0.0	1.705	0.000	0.0
55. - 59.9	1.098	0.024	2.2	1.007	0.013	1.3	1.148	0.009	0.8	1.239	0.003	0.2
60. - 64.9	1.092	0.033	3.0	1.004	0.005	0.5	1.146	0.006	0.5	1.242	0.011	0.9
65. - 69.9	1.113	0.038	3.4	1.008	0.021	2.0	1.152	0.012	1.0	1.260	0.032	2.6
70. - 74.9	1.120	0.034	3.0	1.006	0.006	0.6	1.136	0.008	0.7	1.266	0.020	1.5
75. - 79.9	1.145	0.091	8.0	1.006	0.005	0.5	1.162	0.022	1.9	1.285	0.035	2.7
80. - 84.9	1.145	0.059	5.2	1.004	0.003	0.3	1.156	0.014	1.2	1.323	0.059	4.5
85. - 89.9	1.142	0.046	4.0	1.006	0.004	0.4	1.177	0.015	1.3	1.303	0.038	2.9
90. - 94.9	1.102	0.144	12.2	1.009	0.008	0.8	1.165	0.019	1.6	1.309	0.029	2.2
95. - 99.9	1.127	0.033	3.0	1.016	0.018	1.8	1.172	0.012	1.0	1.316	0.038	2.9
100. - 104.9	1.120	0.024	2.2	1.008	0.003	0.3	1.171	0.017	1.5	1.320	0.040	3.0
105. - 109.9	1.208	0.151	12.5	1.011	0.005	0.5	1.173	0.022	1.9	1.367	0.066	4.8
110. - 114.9	1.195	0.060	5.0	1.006	0.005	0.5	1.176	0.015	1.3	1.393	0.086	6.2
115. - 119.9	1.166	0.067	5.7	1.007	0.005	0.5	1.150	0.011	0.9	1.339	0.077	5.7
120. - 124.9	1.100	0.023	2.1	1.005	0.005	0.5	1.187	0.011	0.9	1.324	0.030	2.3
125. - 129.9	1.381	0.000	0.0	1.012	0.000	0.0	1.168	0.000	0.0	1.612	0.000	0.0
130. - 134.9	1.269	0.000	0.0	1.003	0.000	0.0	1.161	0.000	0.0	1.473	0.000	0.0
135. - 139.9	1.122	0.000	0.0	1.001	0.000	0.0	1.207	0.000	0.0	1.355	0.000	0.0
140. - 144.9	1.136	0.019	1.6	1.026	0.038	3.7	1.184	0.000	0.0	1.332	0.004	0.3

AVERAGE 1.133 0.076 6.7 1.007 0.010 1.0 1.167 0.035 3.0 1.324 0.079 6.0

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
30. - 34.9	0.499	0.035	6.9	0.497	0.033	6.7	0.462	0.030	6.5			
35. - 39.9	0.506	0.018	1.9	0.501	0.008	1.6	0.467	0.006	1.2			
40. - 44.9	0.524	0.004	0.8	0.521	0.005	1.0	0.482	0.014	2.9	0.408	0.000	0.0
45. - 49.9	0.542	0.038	6.9	0.539	0.037	6.8	0.496	0.034	6.9			
50. - 54.9	0.553	0.061	11.0	0.547	0.058	10.7	0.496	0.027	5.5	0.389	0.000	0.0
55. - 59.9	0.533	0.029	5.4	0.530	0.032	6.0	0.485	0.021	4.4	0.429	0.008	1.9
60. - 64.9	0.555	0.032	5.8	0.552	0.034	5.9	0.509	0.026	5.0	0.445	0.027	6.1
65. - 69.9	0.547	0.041	7.5	0.542	0.034	6.3	0.491	0.027	5.0	0.409	0.028	6.0
70. - 74.9	0.568	0.050	8.8	0.564	0.049	8.6	0.507	0.038	7.4	0.437	0.013	3.0
75. - 79.9	0.589	0.062	10.5	0.585	0.061	10.4	0.514	0.039	7.6	0.422	0.041	9.7
80. - 84.9	0.571	0.049	8.5	0.569	0.050	8.0	0.499	0.025	5.0	0.441	0.034	7.7
85. - 89.9	0.578	0.063	10.9	0.575	0.063	11.0	0.506	0.045	8.0	0.389	0.033	8.5
90. - 94.9	0.557	0.094	16.8	0.552	0.090	16.4	0.471	0.043	9.2	0.385	0.031	8.1
95. - 99.9	0.558	0.034	6.2	0.550	0.035	6.4	0.496	0.033	6.7	0.414	0.022	5.4
100. - 104.9	0.532	0.044	8.3	0.528	0.044	8.4	0.475	0.035	7.3	0.416	0.025	6.0
105. - 109.9	0.573	0.065	11.4	0.566	0.062	11.0	0.476	0.048	10.1	0.413	0.041	9.8
110. - 114.9	0.602	0.054	9.0	0.599	0.055	9.2	0.504	0.039	7.0	0.414	0.029	7.0
115. - 119.9	0.605	0.061	10.2	0.600	0.060	10.0	0.519	0.048	9.2	0.452	0.040	8.8
120. - 124.9	0.512	0.032	6.3	0.509	0.030	6.0	0.465	0.022	4.7	0.405	0.018	4.5
125. - 129.9	0.623	0.000	0.0	0.616	0.000	0.0	0.452	0.000	0.0	0.387	0.000	0.0
130. - 134.9	0.640	0.000	0.0	0.638	0.000	0.0	0.504	0.000	0.0	0.435	0.000	0.0
135. - 139.9	0.514	0.000	0.0	0.514	0.000	0.0	0.458	0.000	0.0	0.380	0.000	0.0
140. - 144.9	0.566	0.020	3.5	0.553	0.039	7.1	0.498	0.014	2.8	0.420	0.016	3.9

AVERAGE 0.561 0.057 10.1 0.557 0.056 10.0 0.495 0.036 7.3 0.414 0.034 8.2

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.068 A = 0.00408 CORR. COEFF. = 0.995
 STD ERROR (B) = 0.0218
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 3.12
 DEGREES OF FREEDOM = 209

Table 7 Plaice

SPECIES -----		PLAICE				
AREA	COMBINED					
SEX	COMBINED					
PERIOD	ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
25. - 29.9	67	28.5	249	242	234	
30. - 34.9	106	32.9	374	365	354	
35. - 39.9	128	37.3	553	540	522	
40. - 44.9	76	42.2	832	811	782	
45. - 49.9	43	47.4	1230	1191	1141	
50. - 54.9	21	52.2	1514	1455	1382	
55. - 59.9	12	58.3	2157	2115	2029	
TOTAL	453					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
25. - 29.9	1.065	0.033	3.1	1.028	0.026	2.5
30. - 34.9	1.057	0.029	2.8	1.023	0.023	2.2
35. - 39.9	1.058	0.034	3.2	1.024	0.026	2.6
40. - 44.9	1.064	0.042	3.9	1.026	0.031	3.0
45. - 49.9	1.081	0.054	5.0	1.034	0.039	3.8
50. - 54.9	1.098	0.045	4.1	1.042	0.024	3.2
55. - 59.9	1.065	0.039	3.7	1.021	0.030	2.9
AVERAGE	1.064	0.038	3.6	1.026	0.028	2.8

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
25. - 29.9	1.075	0.122	11.4	1.044	0.110	10.5	1.009	0.106	10.5
30. - 34.9	1.043	0.103	9.9	1.020	0.099	9.7	0.987	0.097	9.8
35. - 39.9	1.060	0.109	10.3	1.036	0.100	10.4	1.003	0.104	10.4
40. - 44.9	1.104	0.120	11.6	1.077	0.120	11.9	1.039	0.126	12.2
45. - 49.9	1.149	0.098	8.6	1.114	0.114	10.2	1.067	0.117	10.9
50. - 54.9	1.062	0.157	14.7	1.021	0.166	16.3	0.971	0.163	16.8
55. - 59.9	1.091	0.116	10.6	1.070	0.123	11.5	1.026	0.122	11.9
AVERAGE	1.075	0.118	11.0	1.048	0.117	11.2	1.011	0.114	11.3

LENGTH - WEIGHT CONSTANTS (W=AL**3)

B = 3.054 A = 0.0007 CORR. COEFF. = 0.983
 STD ERROR (B) = 0.0269
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 2.02
 DEGREES OF FREEDOM = 451

Table 8 Whiting

SPECIES WHITING

 AREA COMBINED
 SEX COMBINED
 PERIOD ANNUAL

LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT HEADLESS
20. - 24.9	2	22.5	96	89	83	
25. - 29.9	64	28.3	182	177	161	
30. - 34.9	110	32.8	276	269	244	
35. - 39.9	90	37.2	418	408	367	
40. - 44.9	81	42.2	647	631	557	476
45. - 49.9	33	46.9	854	826	732	666
50. - 54.9	6	52.2	1181	1086	973	881
55. - 59.9	5	57.7	1617	1610	1413	1139
60. - 64.9	1	63.5	1951	1949	1785	1438
65. - 69.9	1	66.5	2713	2596	2304	1889

TOTAL 393

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.170	0.085	7.3	1.085	0.081	7.5						
25. - 29.9	1.133	0.081	7.1	1.027	0.034	3.3						
30. - 34.9	1.133	0.066	5.8	1.027	0.036	3.5						
35. - 39.9	1.141	0.058	5.1	1.025	0.033	3.2						
40. - 44.9	1.160	0.055	4.7	1.025	0.031	3.0	1.232	0.019	1.5	1.409	0.046	3.3
45. - 49.9	1.168	0.062	5.3	1.034	0.033	3.2	1.246	0.026	2.1	1.407	0.012	0.8
50. - 54.9	1.131	0.018	1.6	1.014	0.008	0.8	1.209	0.000	0.0	1.385	0.000	0.0
55. - 59.9	1.146	0.037	3.2	1.005	0.003	0.3	1.241	0.024	2.0	1.423	0.060	4.8
60. - 64.9	1.093	0.000	0.0	1.001	0.000	0.0	1.241	0.000	0.0	1.357	0.000	0.0
65. - 69.9	1.178	0.000	0.0	1.045	0.000	0.0	1.220	0.000	0.0	1.436	0.000	0.0
AVERAGE	1.144	0.064	5.6	1.026	0.034	3.3	1.235	0.021	1.7	1.409	0.044	3.1

CONDITION FACTORS (WEIGHT*1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	0.842	0.123	14.6	0.773	0.055	7.1	0.717	0.053	7.3			
25. - 29.9	0.801	0.080	10.0	0.780	0.075	9.6	0.707	0.059	8.4			
30. - 34.9	0.781	0.082	10.5	0.761	0.075	9.9	0.689	0.060	8.7			
35. - 39.9	0.811	0.089	11.0	0.792	0.086	10.8	0.710	0.064	9.0			
40. - 44.9	0.855	0.095	11.1	0.834	0.092	11.1	0.737	0.074	10.0	0.649	0.049	7.6
45. - 49.9	0.827	0.124	15.0	0.799	0.111	13.9	0.708	0.096	13.5	0.665	0.068	11.2
50. - 54.9	0.770	0.072	9.4	0.760	0.077	10.1	0.681	0.061	9.0	0.544	0.000	0.0
55. - 59.9	0.842	0.063	7.5	0.830	0.061	7.3	0.736	0.072	9.0	0.594	0.060	11.4
60. - 64.9	0.762	0.000	0.0	0.761	0.000	0.0	0.697	0.000	0.0	0.562	0.000	0.0
65. - 69.9	0.923	0.000	0.0	0.883	0.000	0.0	0.783	0.000	0.0	0.642	0.000	0.0
AVERAGE	0.811	0.093	11.5	0.791	0.088	11.1	0.709	0.069	9.8	0.629	0.059	9.4

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.117 A = 0.00510 CORR. COEFF. = 0.982
 STD ERROR (B) = 0.0300
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 3.91
 DEGREES OF FREEDOM = 391

Table 9 Soles

SPECIES		SOLES			

AREA	SEX	COMBINED		ANNUAL	
PERIOD					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT GM EVACUATED	MEAN WEIGHT GM GUTTED
15. - 19.9	1	19.5	79	78	76
20. - 24.9	53	23.9	126	124	120
25. - 29.9	120	27.7	200	197	191
30. - 34.9	108	32.3	329	324	314
35. - 39.9	62	37.3	532	525	500
40. - 44.9	13	41.8	730	720	695
45. - 49.9	4	46.0	950	925	888
TOTAL	361				

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
15. - 19.9	1.039	0.000	0.0	1.013	0.000	0.0
20. - 24.9	1.052	0.020	1.9	1.020	0.018	1.7
25. - 29.9	1.046	0.018	1.7	1.015	0.013	1.3
30. - 34.9	1.047	0.017	1.6	1.015	0.013	1.3
35. - 39.9	1.048	0.016	1.5	1.014	0.012	1.2
40. - 44.9	1.050	0.018	1.7	1.013	0.013	1.3
45. - 49.9	1.072	0.035	3.3	1.028	0.032	3.1
AVERAGE	1.048	0.018	1.7	1.016	0.014	1.4

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
15. - 19.9	1.065	0.000	0.0	1.052	0.000	0.0	1.025	0.000	0.0
20. - 24.9	0.922	0.083	9.0	0.903	0.077	8.5	0.876	0.074	8.4
25. - 29.9	0.931	0.095	10.2	0.917	0.092	10.0	0.890	0.087	9.8
30. - 34.9	0.971	0.103	10.6	0.957	0.101	10.6	0.927	0.098	10.6
35. - 39.9	1.022	0.119	11.6	1.009	0.121	12.0	0.975	0.117	12.0
40. - 44.9	1.005	0.143	14.2	0.992	0.138	14.0	0.957	0.131	13.7
45. - 49.9	0.974	0.116	11.9	0.948	0.114	12.1	0.910	0.119	13.1
AVERAGE	0.961	0.107	11.2	0.946	0.106	11.2	0.917	0.102	11.1

LENGTH - WEIGHT CONSTANTS (W=AL**3)

B = 3.088 A = 0.0070 CORR. COEFF. = 0.982
 STD ERROR (B) = 0.0313
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 2.02
 DEGREES OF FREEDOM = 359

Table 10 Spurdogs

SPECIES	SPURDOGS					

AREA	COMBINED					
SEX	COMBINED					
PERIOD	ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT TAIL
40. - 44.9	2	44.8	275	269	228	186
45. - 49.9	23	48.5	397	379	309	153
50. - 54.9	43	53.4	543	522	437	218
55. - 59.9	75	57.9	693	671	555	277
60. - 64.9	67	62.3	842	816	675	331
65. - 69.9	76	67.5	1087	1058	862	419
70. - 74.9	82	72.6	1438	1391	1126	568
75. - 79.9	83	77.5	1772	1722	1391	703
80. - 84.9	99	82.3	2154	2093	1658	855
85. - 89.9	49	87.5	2707	2633	1996	997
90. - 94.9	29	92.2	3556	3442	2505	1306
95. - 99.9	27	97.1	4015	3909	2849	1449
100. - 104.9	24	102.3	4989	4826	3378	1759
105. - 109.9	8	105.9	5348	5218	3739	
110. - 114.9	4	111.2	5888	5815	4228	2223

TOTAL 691

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / TAIL			ENTIRE FACTOR	TAIL S.D.	C.V.
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.			
40. - 44.9	1.286	0.011	0.9	1.022	0.002	0.2	2.145	0.017	0.8	2.588	0.043	1.7
45. - 49.9	1.298	0.092	7.1	1.047	0.034	3.2	1.977	0.218	11.0	2.535	0.179	7.1
50. - 54.9	1.248	0.043	3.5	1.038	0.028	2.7	2.049	0.150	7.3	2.554	0.198	7.8
55. - 59.9	1.248	0.042	3.3	1.033	0.021	2.1	2.005	0.124	6.2	2.512	0.175	7.0
60. - 64.9	1.248	0.041	3.3	1.032	0.024	2.3	2.035	0.114	5.6	2.547	0.180	7.1
65. - 69.9	1.268	0.046	3.7	1.035	0.027	2.6	2.022	0.098	4.5	2.558	0.173	6.8
70. - 74.9	1.277	0.051	4.0	1.034	0.023	2.2	1.987	0.097	4.9	2.574	0.163	6.3
75. - 79.9	1.273	0.060	4.7	1.029	0.024	2.3	1.954	0.055	2.8	2.546	0.134	5.3
80. - 84.9	1.302	0.083	6.3	1.029	0.025	2.4	1.942	0.051	2.7	2.508	0.173	6.9
85. - 89.9	1.358	0.099	7.3	1.029	0.027	2.7	1.936	0.128	6.6	2.624	0.171	6.5
90. - 94.9	1.419	0.041	2.9	1.033	0.029	2.8	1.930	0.082	4.3	2.746	0.123	4.5
95. - 99.9	1.412	0.081	5.7	1.027	0.027	2.6	1.947	0.184	9.5	2.737	0.234	8.6
100. - 104.9	1.479	0.121	8.2	1.034	0.025	2.4	1.940	0.072	3.7	2.920	0.359	12.3
105. - 109.9	1.428	0.051	3.6	1.023	0.018	1.8						
110. - 114.9	1.392	0.056	4.0	1.012	0.003	0.3	1.845	0.000	0.0	2.570	0.000	0.0
AVERAGE	1.297	0.089	6.9	1.032	0.025	2.4	1.984	0.114	5.8	2.566	0.186	7.2

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			TAIL WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
40. - 44.9	0.322	0.010	3.0	0.315	0.009	2.7	0.267	0.006	2.1	0.124	0.002	1.3
45. - 49.9	0.346	0.028	8.2	0.331	0.025	7.6	0.269	0.030	11.1	0.133	0.010	7.7
50. - 54.9	0.356	0.033	9.1	0.342	0.030	8.7	0.287	0.023	8.1	0.139	0.016	11.4
55. - 59.9	0.357	0.029	8.3	0.346	0.028	8.1	0.286	0.023	7.9	0.142	0.014	9.9
60. - 64.9	0.348	0.025	7.1	0.337	0.022	6.6	0.279	0.017	6.2	0.137	0.014	10.2
65. - 69.9	0.353	0.028	7.8	0.341	0.025	7.4	0.280	0.019	6.9	0.137	0.012	8.6
70. - 74.9	0.375	0.032	8.5	0.363	0.030	8.3	0.294	0.021	7.3	0.149	0.013	8.6
75. - 79.9	0.381	0.033	8.0	0.370	0.032	8.6	0.299	0.021	7.2	0.152	0.013	8.9
80. - 84.9	0.386	0.044	11.5	0.375	0.042	11.1	0.296	0.022	7.4	0.151	0.011	7.4
85. - 89.9	0.405	0.042	10.4	0.393	0.040	10.3	0.298	0.028	9.3	0.152	0.011	7.2
90. - 94.9	0.454	0.032	7.0	0.440	0.031	7.0	0.320	0.021	6.5	0.167	0.008	4.9
95. - 99.9	0.430	0.033	7.5	0.426	0.028	6.7	0.311	0.025	8.0	0.160	0.017	10.4
100. - 104.9	0.466	0.041	8.8	0.451	0.036	8.0	0.316	0.023	7.3	0.164	0.015	9.0
105. - 109.9	0.449	0.034	7.7	0.439	0.031	7.1	0.315	0.022	7.0			
110. - 114.9	0.429	0.032	7.4	0.423	0.031	7.2	0.300	0.014	4.6	0.160	0.000	0.0
AVERAGE	0.380	0.047	12.3	0.368	0.045	12.2	0.293	0.025	8.5	0.146	0.015	10.3

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.391 A = 0.00069 CORR. COEFF. = 0.991
 STD ERROR (B) = 0.0171
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 22.86
 DEGREES OF FREEDOM = 689

Table 11 Saithe

SPECIES		SAITHE					

AREA	COMBINED						
SEX	COMBINED						
PERIOD	ANNUAL						
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT GM EVACUATED	MEAN WEIGHT GM GUTTED	MEAN WEIGHT GM HEADLESS	
25. - 29.9	3	29.5	183	178	165		
30. - 34.9	11	33.7	357	345	306	295	
35. - 39.9	15	37.2	448	438	388	347	
40. - 44.9	24	42.6	712	701	602	533	
45. - 49.9	28	47.8	1050	997	871	734	
50. - 54.9	36	52.2	1388	1322	1130	981	
55. - 59.9	21	57.9	1859	1781	1544	1300	
60. - 64.9	26	62.5	2300	2230	1921	1699	
65. - 69.9	26	67.7	2848	2742	2379	1936	
70. - 74.9	37	72.6	3389	3265	2838	2280	
75. - 79.9	41	77.6	4266	4099	3503	3031	
80. - 84.9	37	82.4	5002	4840	4086	3669	
85. - 89.9	45	87.9	5907	5712	4830	3916	
90. - 94.9	42	92.0	6545	6342	5302	4530	
95. - 99.9	36	97.4	7894	7598	6432	5142	
100. - 104.9	15	101.7	9478	9209	7605	6087	
105. - 109.9	14	107.9	9938	9700	8615	7358	
110. - 114.9	20	112.8	11200	10800	9364	8432	
115. - 119.9	4	117.0	13337	13131	11252	9344	

TOTAL 481

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
25. - 29.9	1.105	0.006	0.5	1.027	0.008	0.8						
30. - 34.9	1.159	0.057	4.9	1.034	0.017	1.6	1.220	0.008	0.0	1.481	0.000	0.0
35. - 39.9	1.150	0.060	5.2	1.023	0.018	1.8	1.201	0.017	1.4	1.410	0.057	4.8
40. - 44.9	1.179	0.051	4.3	1.016	0.008	0.7	1.191	0.009	0.0	1.432	0.049	3.4
45. - 49.9	1.203	0.061	5.1	1.053	0.033	3.2	1.206	0.011	0.9	1.494	0.043	2.9
50. - 54.9	1.221	0.058	4.8	1.052	0.055	5.2	1.191	0.010	0.9	1.452	0.034	2.3
55. - 59.9	1.203	0.049	4.1	1.043	0.030	2.9	1.103	0.015	1.3	1.406	0.054	3.8
60. - 64.9	1.200	0.051	4.2	1.035	0.029	2.8	1.101	0.016	1.3	1.379	0.103	7.4
65. - 69.9	1.195	0.043	3.6	1.039	0.025	2.4	1.200	0.010	0.9	1.420	0.042	2.9
70. - 74.9	1.192	0.057	4.8	1.039	0.028	2.7	1.106	0.017	1.4	1.405	0.061	4.4
75. - 79.9	1.214	0.068	5.6	1.040	0.020	2.7	1.107	0.042	3.5	1.461	0.000	0.0
80. - 84.9	1.220	0.067	5.5	1.033	0.027	2.6	1.172	0.025	2.1	1.430	0.069	4.8
85. - 89.9	1.217	0.072	5.9	1.033	0.027	2.6	1.196	0.026	2.1	1.432	0.057	4.7
90. - 94.9	1.210	0.092	7.6	1.030	0.020	2.7	1.205	0.036	3.0	1.447	0.066	4.5
95. - 99.9	1.220	0.088	7.2	1.036	0.033	3.2	1.220	0.039	3.2	1.476	0.092	6.2
100. - 104.9	1.233	0.069	5.6	1.030	0.029	2.8	1.201	0.036	3.0	1.451	0.004	0.0
105. - 109.9	1.153	0.052	4.5	1.025	0.036	3.5	1.223	0.060	4.9	1.409	0.068	4.8
110. - 114.9	1.196	0.052	4.3	1.036	0.035	3.3	1.219	0.020	1.7	1.450	0.064	4.4
115. - 119.9	1.105	0.004	0.3	1.015	0.012	1.2	1.205	0.012	1.0	1.420	0.011	0.0
AVERAGE	1.203	0.068	5.6	1.036	0.031	3.0	1.197	0.035	2.9	1.439	0.071	5.0

CONDITION FACTORS (WEIGHT*1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
25. - 29.9	0.712	0.037	5.2	0.693	0.041	5.9	0.644	0.032	4.9			
30. - 34.9	0.917	0.151	16.5	0.805	0.134	15.2	0.707	0.094	11.9	0.718	0.000	0.0
35. - 39.9	0.864	0.110	12.7	0.844	0.100	11.8	0.749	0.069	9.2	0.657	0.074	11.2
40. - 44.9	0.916	0.094	10.3	0.901	0.092	10.2	0.776	0.052	6.7	0.684	0.036	5.3
45. - 49.9	0.956	0.080	8.4	0.907	0.059	6.5	0.794	0.044	5.5	0.650	0.036	5.4
50. - 54.9	0.970	0.090	9.2	0.930	0.070	8.4	0.800	0.047	5.9	0.660	0.028	4.2
55. - 59.9	0.961	0.117	12.2	0.920	0.100	10.9	0.797	0.075	9.4	0.665	0.072	10.0
60. - 64.9	0.945	0.121	12.8	0.913	0.121	13.2	0.786	0.081	10.4	0.700	0.003	11.0
65. - 69.9	0.917	0.097	10.6	0.803	0.087	9.9	0.766	0.060	7.9	0.611	0.036	5.9
70. - 74.9	0.803	0.107	12.1	0.850	0.103	12.1	0.739	0.066	9.0	0.619	0.057	9.2
75. - 79.9	0.912	0.125	13.7	0.876	0.114	13.0	0.748	0.073	9.0	0.636	0.069	10.0
80. - 84.9	0.893	0.133	14.9	0.864	0.121	14.0	0.730	0.078	10.7	0.640	0.077	11.9
85. - 89.9	0.867	0.127	14.7	0.838	0.115	13.7	0.709	0.070	9.9	0.576	0.066	11.4
90. - 94.9	0.840	0.144	17.2	0.814	0.130	15.9	0.691	0.084	12.1	0.593	0.087	14.7
95. - 99.9	0.855	0.163	19.0	0.823	0.144	17.5	0.697	0.099	14.2	0.557	0.098	17.6
100. - 104.9	0.902	0.117	12.9	0.877	0.115	13.1	0.731	0.083	11.4	0.649	0.066	10.2
105. - 109.9	0.792	0.081	10.3	0.773	0.070	10.1	0.606	0.062	9.0	0.590	0.051	6.6
110. - 114.9	0.779	0.101	12.9	0.752	0.095	12.6	0.652	0.070	12.0	0.509	0.055	9.4
115. - 119.9	0.833	0.046	5.5	0.820	0.037	4.6	0.703	0.037	5.3	0.503	0.034	5.0
AVERAGE	0.893	0.120	14.4	0.861	0.116	13.5	0.740	0.083	11.2	0.622	0.076	12.2

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 2.962 A = 0.01000 CORR. COEFF. = 0.992
 STD ERROR (B) = 0.0177
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 2.14
 DEGREES OF FREEDOM = 479

Table 12 Lemon soles

SPECIES		LEMON SOLES				

AREA	COMBINED					
SEX	COMBINED					
PERIOD	ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
20. - 24.9	17	23.9	153	151	146	
25. - 29.9	124	27.9	268	265	258	
30. - 34.9	114	32.1	418	412	402	
35. - 39.9	57	36.5	629	618	600	
40. - 44.9	12	41.4	831	811	791	
45. - 49.9	7	45.7	1181	1147	1113	
TOTAL	331					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.047	0.019	1.8	1.017	0.012	1.2
25. - 29.9	1.037	0.017	1.6	1.012	0.012	1.2
30. - 34.9	1.038	0.015	1.4	1.013	0.010	1.0
35. - 39.9	1.048	0.021	2.0	1.017	0.014	1.4
40. - 44.9	1.049	0.014	1.4	1.024	0.010	1.0
45. - 49.9	1.061	0.018	1.7	1.029	0.013	1.2
AVERAGE	1.041	0.018	1.7	1.014	0.012	1.2

CONDITION FACTORS (WEIGHT*1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	1.111	0.141	12.7	1.092	0.141	13.0	1.061	0.136	12.7
25. - 29.9	1.210	0.170	14.0	1.204	0.171	14.2	1.174	0.166	14.1
30. - 34.9	1.249	0.149	12.0	1.233	0.147	12.0	1.203	0.139	11.6
35. - 39.9	1.291	0.135	10.4	1.270	0.135	10.6	1.233	0.128	10.3
40. - 44.9	1.167	0.124	10.6	1.140	0.120	10.5	1.112	0.115	10.3
45. - 49.9	1.233	0.103	8.4	1.198	0.101	8.4	1.162	0.099	8.5
AVERAGE	1.234	0.168	12.8	1.217	0.157	12.9	1.186	0.151	12.7

LENGTH - WEIGHT CONSTANTS (W=AL**3)

B = 3.131 A = 0.0078 CORR. COEFF. = 0.964
 STD ERROR (B) = 0.0478
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 2.73
 DEGREES OF FREEDOM = 329

Table 13 Turbot

SPECIES		TURBOT				

AREA	SEX	PERIOD	COMBINED	COMBINED	ANNUAL	
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
35. - 39.9	16	38.6	1281	1181	1125	
40. - 44.9	56	43.4	1662	1639	1566	
45. - 49.9	87	47.1	2224	2181	2087	
50. - 54.9	48	52.7	3045	2976	2846	
55. - 59.9	23	57.6	4086	3947	3791	
60. - 64.9	15	62.2	5281	5123	4916	
65. - 69.9	4	67.5	6948	6722	6412	
70. - 74.9	1	73.5	10225	9935	9314	
TOTAL	242					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
35. - 39.9	1.067	0.017	1.6	1.016	0.007	0.7
40. - 44.9	1.061	0.012	1.2	1.014	0.007	0.7
45. - 49.9	1.065	0.015	1.5	1.020	0.011	1.1
50. - 54.9	1.070	0.018	1.7	1.023	0.010	1.0
55. - 59.9	1.070	0.021	6.6	1.035	0.063	6.1
60. - 64.9	1.074	0.043	4.0	1.031	0.030	2.9
65. - 69.9	1.082	0.031	2.9	1.032	0.028	2.7
70. - 74.9	1.098	0.000	0.0	1.029	0.000	0.0
AVERAGE	1.067	0.020	2.6	1.021	0.023	2.3

CONDITION FACTORS (WEIGHT*1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
35. - 39.9	2.096	0.203	9.7	2.061	0.190	9.2	1.963	0.172	8.7
40. - 44.9	2.036	0.200	10.2	2.007	0.199	9.9	1.918	0.185	9.7
45. - 49.9	2.114	0.173	8.2	2.074	0.160	8.1	1.984	0.154	7.8
50. - 54.9	2.077	0.184	8.8	2.030	0.181	8.9	1.941	0.172	8.8
55. - 59.9	2.141	0.252	11.8	2.066	0.184	8.9	1.984	0.171	8.6
60. - 64.9	2.194	0.243	11.1	2.127	0.215	10.1	2.042	0.202	9.9
65. - 69.9	2.269	0.367	16.2	2.195	0.312	14.2	2.093	0.289	13.8
70. - 74.9	2.575	0.000	0.0	2.502	0.000	0.0	2.346	0.000	0.0
AVERAGE	2.101	0.206	9.8	2.057	0.190	9.2	1.967	0.176	9.0

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.054 A = 0.01703 CORR. COEFF. = 0.977
 STD ERROR (B) = 0.0431
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 1.25
 DEGREES OF FREEDOM = 240

Table 14 Hake

SPECIES		HAKE				

AREA	COMBINED					
SEX	COMBINED					
PERIOD	ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT GM EVACUATED	MEAN WEIGHT GM GUTTED	MEAN WEIGHT GM HEADLESS
25. - 29.9	4	27.7	140	139	130	92
30. - 34.9	18	33.0	269	253	232	161
35. - 39.9	47	37.9	379	367	339	261
40. - 44.9	40	42.4	555	542	499	300
45. - 49.9	27	46.7	633	620	571	407
50. - 54.9	19	52.3	904	891	830	672
55. - 59.9	17	58.0	1274	1262	1173	968
60. - 64.9	20	62.0	1617	1586	1457	1216
65. - 69.9	8	68.5	2037	1980	1833	1525
70. - 74.9	9	72.0	2510	2499	2266	1805
75. - 79.9	2	76.0	3133	3064	2672	2265
80. - 84.9	1	81.5	3926	3876	3180	2603
85. - 89.9	0					
90. - 94.9	2	91.5	7146	7019	5584	4723
95. - 99.9	0					
100. - 104.9	0					
105. - 109.9	1	105.5	7020	7797	7094	5843
110. - 114.9	1	110.5	10950	10870	9160	7605
TOTAL	216					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
25. - 29.9	1.078	0.023	2.1	1.008	0.002	0.2	1.248	0.024	2.0	1.346	0.055	4.1
30. - 34.9	1.161	0.060	5.2	1.066	0.059	5.5	1.249	0.016	1.3	1.409	0.100	7.1
35. - 39.9	1.118	0.050	4.5	1.032	0.030	3.7	1.236	0.025	2.0	1.331	0.024	1.8
40. - 44.9	1.111	0.045	4.1	1.023	0.035	3.4	1.227	0.017	1.4	1.333	0.021	1.6
45. - 49.9	1.121	0.060	5.3	1.077	0.008	0.8	1.175	0.074	6.3	1.311	0.024	1.8
50. - 54.9	1.090	0.044	4.0	1.015	0.029	2.8	1.233	0.059	4.8	1.345	0.068	5.1
55. - 59.9	1.085	0.023	2.1	1.009	0.013	1.2	1.213	0.017	1.4	1.317	0.037	2.8
60. - 64.9	1.100	0.044	3.9	1.019	0.025	2.5	1.198	0.017	1.4	1.320	0.062	4.6
65. - 69.9	1.111	0.062	5.6	1.024	0.032	3.1	1.202	0.016	1.3	1.336	0.080	6.0
70. - 74.9	1.109	0.034	3.1	1.005	0.002	0.2	1.204	0.008	0.7	1.332	0.038	2.9
75. - 79.9	1.174	0.036	3.1	1.024	0.032	3.1	1.181	0.021	1.8	1.387	0.067	4.8
80. - 84.9	1.231	0.000	0.0	1.013	0.000	0.0	1.225	0.000	0.0	1.500	0.000	0.0
85. - 89.9												
90. - 94.9	1.201	0.024	1.9	1.018	0.009	0.8	1.182	0.006	0.5	1.514	0.020	1.3
95. - 99.9												
100. - 104.9												
105. - 109.9	1.103	0.000	0.0	1.004	0.000	0.0	1.214	0.000	0.0	1.340	0.000	0.0
110. - 114.9	1.195	0.000	0.0	1.007	0.000	0.0	1.192	0.000	0.0	1.425	0.000	0.0
AVERAGE	1.116	0.054	4.8	1.023	0.035	3.4	1.211	0.045	3.7	1.337	0.059	4.4

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
25. - 29.9	0.642	0.057	8.8	0.637	0.057	9.0	0.596	0.059	9.9	0.460	0.023	5.0
30. - 34.9	0.744	0.085	11.4	0.699	0.074	10.6	0.641	0.060	9.4	0.440	0.022	5.1
35. - 39.9	0.698	0.092	13.1	0.675	0.081	12.0	0.623	0.069	11.0	0.467	0.039	8.4
40. - 44.9	0.726	0.080	11.0	0.710	0.069	9.7	0.653	0.058	8.9	0.505	0.057	11.2
45. - 49.9	0.615	0.091	14.8	0.610	0.080	14.5	0.553	0.101	18.3	0.465	0.066	14.2
50. - 54.9	0.632	0.071	11.2	0.623	0.065	10.4	0.580	0.058	10.0	0.468	0.042	8.9
55. - 59.9	0.650	0.056	8.7	0.645	0.056	8.6	0.599	0.051	8.6	0.494	0.045	9.1
60. - 64.9	0.681	0.114	16.0	0.660	0.101	15.1	0.613	0.079	13.0	0.512	0.067	13.1
65. - 69.9	0.636	0.091	14.4	0.621	0.070	12.5	0.572	0.064	11.1	0.476	0.057	12.0
70. - 74.9	0.673	0.041	6.2	0.670	0.041	6.1	0.607	0.037	6.0	0.502	0.032	6.4
75. - 79.9	0.713	0.023	3.2	0.697	0.044	6.3	0.600	0.038	6.3	0.515	0.042	8.1
80. - 84.9	0.725	0.000	0.0	0.716	0.000	0.0	0.589	0.000	0.0	0.481	0.000	0.0
85. - 89.9												
90. - 94.9	0.935	0.077	8.3	0.910	0.068	7.4	0.731	0.074	10.1	0.618	0.059	9.6
95. - 99.9												
100. - 104.9												
105. - 109.9	0.667	0.000	0.0	0.664	0.000	0.0	0.604	0.000	0.0	0.498	0.000	0.0
110. - 114.9	0.812	0.000	0.0	0.806	0.000	0.0	0.679	0.000	0.0	0.570	0.000	0.0
AVERAGE	0.684	0.096	14.0	0.668	0.086	12.8	0.612	0.075	12.2	0.486	0.057	11.7

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 2.953 A = 0.00816 CORR. COEFF. = 0.989
 STD ERROR (B) = 0.0290
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 1.59
 DEGREES OF FREEDOM = 214

Table 15 Dabs (other)

SPECIES ----- AREA SEX PERIOD		DABS(OTHER) COMBINED COMBINED ANNUAL				
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
20. - 24.9	52	23.5	141	137	131	
25. - 29.9	65	27.1	207	202	192	
30. - 34.9	51	31.2	328	319	303	
35. - 39.9	2	36.5	540	516	487	
TOTAL	170					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.074	0.024	2.2	1.030	0.019	1.8
25. - 29.9	1.076	0.022	2.0	1.028	0.017	1.6
30. - 34.9	1.081	0.032	2.9	1.028	0.028	2.7
35. - 39.9	1.111	0.049	4.4	1.050	0.046	4.4
AVERAGE	1.078	0.026	2.4	1.029	0.021	2.1

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	1.076	0.100	16.8	1.044	0.176	16.8	1.001	0.167	16.7
25. - 29.9	1.033	0.162	15.7	1.006	0.159	15.8	0.960	0.150	15.6
30. - 34.9	1.073	0.120	11.2	1.046	0.126	12.0	0.994	0.118	11.9
35. - 39.9	1.110	0.086	8.6	1.060	0.052	4.9	1.001	0.049	4.9
AVERAGE	1.059	0.156	14.8	1.030	0.155	15.0	0.983	0.146	14.9

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.166 A = 0.00501 CORR. COEFF. = 0.946
 STD ERROR (B) = 0.0036
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 1.98
 DEGREES OF FREEDOM = 168

Table 16 Monk

SPECIES		MONK					
AREA		COMBINED					
SEX		COMBINED					
PERIOD		ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT TAIL	
15. - 19.9	1	18.5	85	74	63	23	
20. - 24.9	0						
25. - 29.9	1	29.5	364	351	288	97	
30. - 34.9	17	33.3	687	552	467	163	
35. - 39.9	31	37.8	853	778	656	236	
40. - 44.9	28	43.8	1189	1047	879	315	
45. - 49.9	18	48.1	1579	1468	1242	452	
50. - 54.9	16	52.8	2124	1924	1611	685	
55. - 59.9	13	57.8	2846	2594	2289	839	
60. - 64.9	28	62.1	3318	3084	2699	997	
65. - 69.9	27	67.2	3961	3743	3147	1228	
70. - 74.9	11	72.3	4912	4698	3982	1596	
75. - 79.9	4	77.5	5815	5639	4694	1863	
80. - 84.9	6	82.7	6643	6456	5583	2895	
85. - 89.9	3	85.8	7982	7868	6691	2618	
90. - 94.9	6	92.3	10918	10617	8686	3248	
95. - 99.9	3	97.2	12248	11698	9657	3398	
100. - 104.9	5	103.4	14172	13484	10843	4128	
105. - 109.9	2	106.5	16334	15281	11941	4521	

TOTAL 228

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / TAIL			ENTIRE / TAIL		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
15. - 19.9	1.349	0.000	0.0	1.149	0.000	0.0	2.739	0.000	0.0	3.696	0.000	0.0
20. - 24.9												
25. - 29.9	1.264	0.000	0.0	1.037	0.000	0.0	2.969	0.000	0.0	3.753	0.000	0.0
30. - 34.9	1.299	0.127	9.8	1.181	0.092	8.4	2.985	0.298	10.8	3.768	0.393	10.4
35. - 39.9	1.385	0.139	10.6	1.097	0.086	7.9	2.881	0.413	14.8	3.651	0.649	17.8
40. - 44.9	1.268	0.099	7.9	1.058	0.073	6.9	2.889	0.222	7.9	3.543	0.422	11.9
45. - 49.9	1.272	0.087	6.8	1.076	0.077	7.2	2.766	0.236	8.5	3.517	0.365	10.4
50. - 54.9	1.315	0.122	9.3	1.182	0.101	9.2	2.686	0.212	7.5	2.632	0.429	12.2
55. - 59.9	1.291	0.153	11.8	1.099	0.115	10.5	2.641	0.228	8.3	3.414	0.488	14.3
60. - 64.9	1.272	0.092	7.2	1.074	0.071	6.6	2.623	0.188	7.2	3.331	0.268	8.8
65. - 69.9	1.257	0.075	5.9	1.057	0.068	6.4	2.589	0.172	6.6	3.254	0.275	8.5
70. - 74.9	1.258	0.051	4.1	1.046	0.034	3.3	2.447	0.189	7.7	3.081	0.295	9.6
75. - 79.9	1.238	0.028	1.7	1.031	0.015	1.4	2.522	0.048	1.6	3.122	0.077	2.5
80. - 84.9	1.285	0.038	3.2	1.029	0.022	2.1	2.641	0.148	5.6	3.188	0.182	5.7
85. - 89.9	1.194	0.011	0.9	1.014	0.007	0.7	2.598	0.323	12.5	3.089	0.362	11.7
90. - 94.9	1.271	0.058	3.9	1.029	0.015	1.5	2.654	0.124	4.7	3.369	0.088	1.8
95. - 99.9	1.267	0.043	3.4	1.046	0.009	0.8	2.847	0.066	2.3	3.683	0.042	1.2
100. - 104.9	1.387	0.052	4.0	1.057	0.062	5.9	2.629	0.153	5.8	3.442	0.336	9.7
105. - 109.9	1.368	0.048	2.9	1.076	0.059	5.4	2.658	0.138	5.2	3.631	0.295	8.1
AVERAGE	1.277	0.103	8.1	1.073	0.078	7.3	2.783	0.267	9.9	3.451	0.435	12.6

CONDITION FACTORS (WEIGHT*1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			TAIL WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
15. - 19.9	1.342	0.000	0.0	1.169	0.000	0.0	0.995	0.000	0.0	0.363	0.000	0.0
20. - 24.9												
25. - 29.9	1.418	0.000	0.0	1.367	0.000	0.0	1.122	0.000	0.0	0.378	0.000	0.0
30. - 34.9	1.639	0.236	14.4	1.489	0.168	11.3	1.262	0.135	10.7	0.439	0.078	16.8
35. - 39.9	1.578	0.275	17.4	1.435	0.201	14.0	1.289	0.166	13.8	0.436	0.064	14.6
40. - 44.9	1.388	0.284	14.7	1.318	0.142	10.8	1.188	0.186	9.6	0.394	0.049	12.5
45. - 49.9	1.418	0.286	14.5	1.318	0.159	12.8	1.115	0.142	12.7	0.486	0.065	15.9
50. - 54.9	1.583	0.288	13.8	1.363	0.142	10.4	1.141	0.113	9.9	0.428	0.061	14.2
55. - 59.9	1.478	0.193	13.1	1.345	0.117	8.7	1.146	0.088	7.7	0.435	0.036	8.3
60. - 64.9	1.377	0.283	14.7	1.283	0.179	14.0	1.081	0.126	11.7	0.415	0.064	15.4
65. - 69.9	1.383	0.148	11.4	1.232	0.118	9.6	1.035	0.085	8.3	0.401	0.048	10.8
70. - 74.9	1.388	0.158	11.5	1.245	0.163	13.1	1.034	0.128	11.6	0.424	0.061	14.4
75. - 79.9	1.258	0.113	9.8	1.212	0.096	7.9	1.089	0.085	8.4	0.488	0.034	8.5
80. - 84.9	1.173	0.149	12.7	1.148	0.134	11.8	0.972	0.096	9.8	0.369	0.042	11.3
85. - 89.9	1.262	0.061	4.9	1.244	0.052	4.2	1.058	0.059	5.6	0.413	0.045	11.8
90. - 94.9	1.384	0.079	5.7	1.346	0.089	6.6	1.091	0.083	7.6	0.411	0.029	7.1
95. - 99.9	1.334	0.076	5.7	1.274	0.066	5.1	1.052	0.027	2.5	0.378	0.017	4.5
100. - 104.9	1.287	0.145	11.2	1.216	0.115	9.5	0.984	0.096	9.7	0.374	0.027	7.3
105. - 109.9	1.352	0.088	8.6	1.268	0.076	6.1	0.989	0.035	3.5	0.375	0.033	8.7
AVERAGE	1.428	0.228	16.8	1.322	0.171	12.9	1.111	0.139	12.5	0.413	0.057	13.8

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 2.841 A = 0.02491 CORR. COEFF. = 0.993
 STD ERROR (B) = 0.0237
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 6.73
 DEGREES OF FREEDOM = 218

Table 17 Megrin

SPECIES		MEGRIM				

AREA	SEX	PERIOD	COMBINED ANNUAL			
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
20. - 24.9	5	23.3	89	86	83	
25. - 29.9	21	27.7	157	154	148	
30. - 34.9	53	33.0	268	263	254	
35. - 39.9	59	37.4	408	402	388	
40. - 44.9	69	42.6	632	626	601	
45. - 49.9	46	47.4	955	945	906	
50. - 54.9	17	51.9	1164	1148	1108	
55. - 59.9	14	56.7	1568	1547	1490	
60. - 64.9	2	61.0	2059	2054	1965	
TOTAL	286					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.075	0.030	2.8	1.036	0.020	2.0
25. - 29.9	1.059	0.017	1.6	1.021	0.016	1.6
30. - 34.9	1.055	0.027	2.5	1.019	0.024	2.3
35. - 39.9	1.051	0.017	1.6	1.014	0.014	1.4
40. - 44.9	1.051	0.013	1.2	1.010	0.009	0.8
45. - 49.9	1.054	0.013	1.2	1.010	0.009	0.9
50. - 54.9	1.051	0.027	2.6	1.015	0.025	2.5
55. - 59.9	1.052	0.015	1.5	1.013	0.012	1.2
60. - 64.9	1.048	0.000	0.0	1.002	0.002	0.2
AVERAGE	1.053	0.019	1.8	1.014	0.016	1.6

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	0.704	0.077	11.0	0.679	0.075	11.1	0.656	0.080	12.2
25. - 29.9	0.720	0.131	17.9	0.713	0.132	18.5	0.687	0.123	17.9
30. - 34.9	0.744	0.092	12.4	0.730	0.091	12.5	0.705	0.087	12.3
35. - 39.9	0.775	0.080	10.3	0.765	0.079	10.4	0.738	0.073	9.9
40. - 44.9	0.813	0.099	12.2	0.805	0.099	12.3	0.773	0.092	11.8
45. - 49.9	0.893	0.111	12.5	0.884	0.111	12.6	0.848	0.105	12.3
50. - 54.9	0.829	0.084	10.2	0.818	0.091	11.2	0.789	0.086	10.9
55. - 59.9	0.857	0.119	13.9	0.845	0.115	13.7	0.814	0.112	13.8
60. - 64.9	0.907	0.043	4.7	0.905	0.041	4.5	0.866	0.041	4.8
AVERAGE	0.801	0.112	14.0	0.790	0.113	14.3	0.760	0.105	13.9

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.344 A = 0.00222 CORR. COEFF. = 0.985
 STD ERROR (B) = 0.0348
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 9.88
 DEGREES OF FREEDOM = 284

Table 18 Witch

SPECIES		WITCH				

AREA	SEX	PERIOD	COMBINED	COMBINED	ANNUAL	
LENGTH GROUP	CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED
25. - 29.9		6	27.8	118	116	114
30. - 34.9		24	32.6	217	213	207
35. - 39.9		20	37.4	331	327	319
40. - 44.9		20	42.1	516	510	498
45. - 49.9		5	46.8	696	680	661
TOTAL		75				

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
25. - 29.9	1.038	0.007	0.7	1.013	0.005	0.5
30. - 34.9	1.046	0.016	1.6	1.018	0.008	0.8
35. - 39.9	1.038	0.009	0.9	1.015	0.007	0.7
40. - 44.9	1.035	0.011	1.1	1.012	0.010	1.0
45. - 49.9	1.052	0.005	0.4	1.023	0.004	0.4
AVERAGE	1.041	0.013	1.3	1.015	0.008	0.8

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
25. - 29.9	0.547	0.002	15.0	0.540	0.000	14.9	0.527	0.001	15.4
30. - 34.9	0.617	0.006	14.0	0.606	0.004	13.9	0.589	0.000	13.6
35. - 39.9	0.633	0.076	11.9	0.624	0.074	11.8	0.610	0.071	11.7
40. - 44.9	0.688	0.078	11.3	0.679	0.075	11.1	0.664	0.072	10.8
45. - 49.9	0.674	0.000	13.1	0.659	0.006	13.1	0.641	0.003	13.0
AVERAGE	0.630	0.000	13.0	0.629	0.006	13.0	0.613	0.003	13.6

LENGTH - WEIGHT CONSTANTS (W=AL**B)

C = 3.495 A = 0.00105 CORR. COEFF. = 0.976
 STD ERROR (B) = 0.0003
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 5.48
 DEGREES OF FREEDOM = 73

Table 19 Flounders

SPECIES		FLOUNDERS				
AREA	COMBINED					
SEX	COMBINED					
PERIOD	ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
20. - 24.9	2	23.0	154	147	142	
25. - 29.9	59	28.0	237	231	221	
30. - 34.9	55	32.3	374	366	348	
35. - 39.9	37	37.0	556	541	515	
40. - 44.9	5	40.5	761	744	715	
45. - 49.9	1	45.5	815	779	749	
TOTAL	159					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.089	0.049	4.5	1.048	0.030	2.9
25. - 29.9	1.074	0.024	2.2	1.027	0.019	1.8
30. - 34.9	1.074	0.028	2.6	1.022	0.014	1.4
35. - 39.9	1.079	0.024	2.2	1.027	0.021	2.0
40. - 44.9	1.066	0.023	2.1	1.024	0.020	2.0
45. - 49.9	1.080	0.000	0.0	1.046	0.000	0.0
AVERAGE	1.075	0.026	2.4	1.026	0.018	1.8

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	1.269	0.117	9.2	1.210	0.077	6.3	1.164	0.055	4.7
25. - 29.9	1.079	0.166	15.4	1.051	0.163	15.5	1.005	0.155	15.4
30. - 34.9	1.096	0.134	12.2	1.073	0.133	12.4	1.022	0.129	12.6
35. - 39.9	1.088	0.171	15.8	1.060	0.167	15.8	1.009	0.161	16.0
40. - 44.9	1.145	0.147	12.0	1.120	0.159	14.2	1.076	0.152	14.1
45. - 49.9	0.865	0.000	0.0	0.827	0.000	0.0	0.795	0.000	0.0
AVERAGE	1.090	0.156	14.3	1.063	0.154	14.4	1.015	0.148	14.5

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 2.984 A = 0.01155 CORR. COEFF. = 0.947
 STD ERROR (B) = 0.0007
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 0.20
 DEGREES OF FREEDOM = 157

Table 20 Pollack

SPECIES ----- AREA SEX PERIOD		POLLACK COMBINED COMBINED ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT HEADLESS	
30. - 34.9	1	32.5	333	316	300	241	
35. - 39.9	4	38.3	543	540	500	400	
40. - 44.9	12	43.0	738	729	671	500	
45. - 49.9	11	46.9	1046	1036	925	679	
50. - 54.9	34	52.4	1457	1440	1272		
55. - 59.9	23	57.4	1914	1890	1650		
60. - 64.9	28	62.5	2463	2419	2130		
65. - 69.9	14	66.0	2888	2865	2534		
70. - 74.9	13	73.1	3547	3514	3133	2641	
75. - 79.9	7	76.4	4360	4217	3742		
80. - 84.9	7	83.3	6124	6050	5207	4794	
85. - 89.9	3	87.5	5644	5578	5010	3562	
90. - 94.9	1	91.5	5428	5400	4806		
TOTAL	158						

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
30. - 34.9	1.110	0.000	0.0	1.054	0.000	0.0	1.245	0.000	0.0	1.302	0.000	0.0
35. - 39.9	1.087	0.012	1.1	1.006	0.002	0.2	1.212	0.000	0.0	1.312	0.000	0.0
40. - 44.9	1.099	0.021	1.9	1.012	0.008	0.8	1.223	0.004	0.3	1.333	0.013	1.0
45. - 49.9	1.129	0.029	2.5	1.009	0.007	0.7	1.235	0.011	0.9	1.370	0.045	3.3
50. - 54.9	1.145	0.038	3.3	1.012	0.012	1.1						
55. - 59.9	1.154	0.039	3.4	1.013	0.013	1.3						
60. - 64.9	1.155	0.035	3.0	1.018	0.019	1.9						
65. - 69.9	1.139	0.027	2.3	1.000	0.012	1.2						
70. - 74.9	1.130	0.022	2.0	1.009	0.007	0.7	1.195	0.000	0.0	1.353	0.000	0.0
75. - 79.9	1.167	0.030	3.3	1.036	0.022	2.1						
80. - 84.9	1.176	0.016	1.3	1.013	0.013	1.3	1.205	0.000	0.0	1.141	0.000	0.0
85. - 89.9	1.125	0.023	2.1	1.011	0.009	0.9	1.293	0.000	0.0	1.424	0.000	0.0
90. - 94.9	1.111	0.000	0.0	1.004	0.000	0.0						
AVERAGE	1.142	0.037	3.2	1.013	0.014	1.4	1.230	0.025	2.1	1.364	0.041	3.0

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
30. - 34.9	0.970	0.000	0.0	0.921	0.000	0.0	0.074	0.000	0.0	0.702	0.000	0.0
35. - 39.9	0.953	0.074	7.7	0.948	0.071	7.5	0.077	0.070	8.0	0.779	0.000	0.0
40. - 44.9	0.929	0.034	3.7	0.917	0.035	3.8	0.045	0.026	3.1	0.711	0.010	2.6
45. - 49.9	1.014	0.090	8.0	1.005	0.090	9.0	0.097	0.064	7.1	0.605	0.044	6.5
50. - 54.9	1.014	0.059	5.8	1.003	0.058	5.8	0.086	0.043	4.8			
55. - 59.9	1.013	0.078	7.7	1.000	0.079	7.9	0.077	0.056	6.4			
60. - 64.9	1.000	0.000	0.0	0.990	0.075	7.5	0.072	0.052	5.9			
65. - 69.9	0.967	0.060	6.2	0.959	0.052	5.5	0.049	0.046	5.4			
70. - 74.9	0.911	0.147	16.1	0.903	0.144	15.9	0.005	0.117	14.6	0.693	0.000	0.0
75. - 79.9	0.978	0.079	8.1	0.944	0.065	6.9	0.037	0.055	6.5			
80. - 84.9	1.056	0.072	6.0	1.043	0.075	7.2	0.098	0.055	6.1	0.795	0.000	0.0
85. - 89.9	0.846	0.119	14.1	0.836	0.110	13.2	0.751	0.091	12.1	0.514	0.000	0.0
90. - 94.9	0.709	0.000	0.0	0.706	0.000	0.0	0.630	0.000	0.0			
AVERAGE	0.967	0.091	9.2	0.974	0.088	9.0	0.064	0.067	7.7	0.696	0.072	10.4

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 2.986 A = 0.01010 CORR. COEFF. = 0.990
 STD ERROR (B) = 0.0342
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 0.40
 DEGREES OF FREEDOM = 156

Table 21 R. brachyura

SPECIES	R. BRACHYURA						
AREA	COMBINED						
SEX	COMBINED						
PERIOD	ANNUAL						
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT WING	
50. - 54.9	1	53.5	1110	1090	1005	587	
55. - 59.9	2	56.5	1325	1277	1161	650	
60. - 64.9	1	64.5	2146	2104	1895	1087	
65. - 69.9	2	66.0	1902	1864	1690	962	
70. - 74.9	2	72.5	2828	2774	2460	1329	
75. - 79.9	1	78.5	3891	3678	3302	1803	
TOTAL	9						

CONVERSION FACTORS												
LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / WING			ENTIRE / WING		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
50. - 54.9	1.104	0.000	0.0	1.010	0.000	0.0	1.712	0.000	0.0	1.891	0.000	0.0
55. - 59.9	1.144	0.021	1.8	1.040	0.021	2.0	1.761	0.045	2.5	2.013	0.015	0.7
60. - 64.9	1.132	0.000	0.0	1.020	0.000	0.0	1.743	0.000	0.0	1.974	0.000	0.0
65. - 69.9	1.125	0.004	0.3	1.022	0.002	0.2	1.757	0.027	1.5	1.977	0.024	1.2
70. - 74.9	1.151	0.027	2.4	1.019	0.003	0.3	1.850	0.059	3.2	2.127	0.017	0.8
75. - 79.9	1.178	0.000	0.0	1.050	0.000	0.0	1.831	0.000	0.0	2.150	0.000	0.0
AVERAGE	1.139	0.024	2.1	1.028	0.016	1.6	1.780	0.057	3.2	2.029	0.090	4.4

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)												
LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			WING WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
50. - 54.9	0.725	0.000	0.0	0.712	0.000	0.0	0.656	0.000	0.0	0.383	0.000	0.0
55. - 59.9	0.732	0.036	5.0	0.705	0.049	7.0	0.641	0.043	6.8	0.363	0.015	4.2
60. - 64.9	0.800	0.000	0.0	0.784	0.000	0.0	0.706	0.000	0.0	0.405	0.000	0.0
65. - 69.9	0.662	0.029	4.4	0.649	0.030	4.6	0.588	0.024	4.0	0.335	0.019	5.6
70. - 74.9	0.743	0.043	5.8	0.729	0.044	6.0	0.645	0.022	3.4	0.349	0.023	6.6
75. - 79.9	0.804	0.000	0.0	0.760	0.000	0.0	0.683	0.000	0.0	0.373	0.000	0.0
AVERAGE	0.734	0.055	7.5	0.713	0.052	7.3	0.644	0.043	6.7	0.362	0.026	7.1

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.121 A = 0.00429 CORR. COEFF. = 0.983
 STD ERROR (B) = 0.2170
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 0.56
 DEGREES OF FREEDOM = 7

Table 22 R. clavata

SPECIES	R. CLAVATA						
AREA	COMBINED						
SEX	COMBINED						
PERIOD	ANNUAL						
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT WING	
30. - 34.9	1	33.5	224	217	204	129	
35. - 39.9	1	35.5	273	264	247	148	
40. - 44.9	0						
45. - 49.9	1	46.5	662	636	594	338	
50. - 54.9	3	53.5	979	953	885	494	
55. - 59.9	3	56.2	1124	1100	1031	576	
60. - 64.9	7	63.2	1629	1580	1456	810	
65. - 69.9	13	67.9	2060	2005	1834	1004	
70. - 74.9	18	72.7	2569	2500	2292	1193	
75. - 79.9	10	77.0	3061	2976	2717	1458	
80. - 84.9	11	81.3	4014	3932	3522	1894	
85. - 89.9	3	85.7	4330	4249	3860	1978	
90. - 94.9	1	90.5	6139	6038	5207	2861	
95. - 99.9	1	96.5	6425	6308	5460	2850	
100. - 104.9	1	100.5	6721	6412	5778	3170	

TOTAL 74

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / WING			ENTIRE / WING		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
30. - 34.9	1.098	0.000	0.0	1.032	0.000	0.0	1.581	0.000	0.0	1.736	0.000	0.0
35. - 39.9	1.105	0.000	0.0	1.034	0.000	0.0	1.669	0.000	0.0	1.845	0.000	0.0
40. - 44.9												
45. - 49.9	1.114	0.000	0.0	1.041	0.000	0.0	1.757	0.000	0.0	1.959	0.000	0.0
50. - 54.9	1.105	0.019	1.8	1.028	0.018	1.8	1.795	0.031	1.7	1.985	0.043	2.2
55. - 59.9	1.090	0.005	0.4	1.015	0.005	0.4	1.791	0.053	3.0	1.951	0.050	2.6
60. - 64.9	1.120	0.029	2.6	1.034	0.028	2.7	1.797	0.031	1.7	2.013	0.045	2.2
65. - 69.9	1.123	0.032	2.9	1.029	0.028	2.8	1.829	0.046	2.5	2.053	0.073	3.5
70. - 74.9	1.121	0.024	2.1	1.020	0.028	2.7	1.930	0.142	7.3	2.163	0.146	6.7
75. - 79.9	1.128	0.027	2.4	1.030	0.024	2.4	1.864	0.096	5.2	2.101	0.093	4.4
80. - 84.9	1.138	0.022	2.0	1.022	0.012	1.2	1.862	0.055	3.0	2.119	0.057	2.7
85. - 89.9	1.119	0.028	2.5	1.020	0.007	0.7	1.967	0.106	5.4	2.199	0.064	2.9
90. - 94.9	1.179	0.000	0.0	1.017	0.000	0.0	1.820	0.000	0.0	2.146	0.000	0.0
95. - 99.9	1.177	0.000	0.0	1.019	0.000	0.0	1.916	0.000	0.0	2.254	0.000	0.0
100. - 104.9	1.163	0.000	0.0	1.048	0.000	0.0	1.823	0.000	0.0	2.120	0.000	0.0
AVERAGE	1.124	0.028	2.5	1.028	0.023	2.2	1.857	0.107	5.8	2.088	0.122	5.8

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			WING WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
30. - 34.9	0.596	0.000	0.0	0.577	0.000	0.0	0.543	0.000	0.0	0.343	0.000	0.0
35. - 39.9	0.610	0.000	0.0	0.590	0.000	0.0	0.552	0.000	0.0	0.331	0.000	0.0
40. - 44.9												
45. - 49.9	0.658	0.000	0.0	0.633	0.000	0.0	0.591	0.000	0.0	0.336	0.000	0.0
50. - 54.9	0.630	0.032	5.0	0.621	0.027	4.4	0.577	0.022	3.8	0.322	0.017	5.3
55. - 59.9	0.635	0.038	6.0	0.626	0.037	6.0	0.582	0.035	5.9	0.325	0.019	6.0
60. - 64.9	0.644	0.094	14.7	0.624	0.099	15.9	0.575	0.089	15.5	0.320	0.048	15.1
65. - 69.9	0.656	0.073	11.1	0.638	0.076	11.9	0.584	0.060	10.3	0.319	0.033	10.3
70. - 74.9	0.667	0.045	6.7	0.649	0.047	7.2	0.595	0.041	6.8	0.310	0.034	10.9
75. - 79.9	0.650	0.091	13.9	0.632	0.094	14.8	0.577	0.083	14.4	0.310	0.045	14.5
80. - 84.9	0.744	0.085	11.5	0.729	0.088	12.1	0.653	0.066	10.1	0.351	0.040	11.5
85. - 89.9	0.686	0.085	12.4	0.673	0.087	12.9	0.612	0.061	10.0	0.313	0.048	15.4
90. - 94.9	0.828	0.000	0.0	0.815	0.000	0.0	0.782	0.000	0.0	0.386	0.000	0.0
95. - 99.9	0.715	0.000	0.0	0.702	0.000	0.0	0.680	0.000	0.0	0.317	0.000	0.0
100. - 104.9	0.662	0.000	0.0	0.632	0.000	0.0	0.569	0.000	0.0	0.312	0.000	0.0
AVERAGE	0.671	0.077	11.5	0.654	0.080	12.2	0.597	0.064	10.7	0.322	0.038	11.8

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.287 A = 0.00196 CORR. COEFF. = 0.982
 STD ERROR (B) = 0.0749
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 3.83
 DEGREES OF FREEDOM = 72

Table 23 R. montagui

SPECIES R. MONTAGUI

 AREA COMBINED
 SEX COMBINED
 PERIOD ANNUAL

LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT WING
35. - 39.9	3	37.3	307	302	285	154
40. - 44.9	4	42.7	521	514	477	271
45. - 49.9	3	47.8	685	677	625	364
50. - 54.9	5	52.3	982	962	886	511
55. - 59.9	7	58.6	1469	1442	1322	752
60. - 64.9	3	61.5	1549	1537	1423	775
65. - 69.9	11	67.7	2131	2116	1967	1016
70. - 74.9	2	72.5	3103	3044	2666	1490
TOTAL	38					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / WING			ENTIRE / WING		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
35. - 39.9	1.075	0.008	0.7	1.016	0.009	0.9	1.913	0.536	28.0	2.059	0.591	28.7
40. - 44.9	1.091	0.016	1.4	1.012	0.005	0.5	1.763	0.081	4.6	1.923	0.070	3.7
45. - 49.9	1.096	0.009	0.6	1.012	0.003	0.5	1.720	0.054	3.2	1.886	0.074	3.9
50. - 54.9	1.105	0.009	0.8	1.021	0.008	0.7	1.735	0.031	1.8	1.922	0.034	1.7
55. - 59.9	1.111	0.011	1.0	1.019	0.010	1.0	1.759	0.053	3.0	1.954	0.053	2.7
60. - 64.9	1.089	0.007	0.6	1.008	0.005	0.5	1.841	0.124	6.7	2.004	0.123	6.1
65. - 69.9	1.084	0.018	1.7	1.007	0.003	0.3	1.939	0.106	5.4	2.101	0.090	4.3
70. - 74.9	1.163	0.021	1.8	1.021	0.015	1.4	1.793	0.052	2.9	2.004	0.023	1.1
AVERAGE	1.098	0.023	2.1	1.014	0.009	0.8	1.826	0.169	9.3	2.003	0.173	8.6

CONDITION FACTORS (WEIGHT=1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			WING WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	HEAD	S.D.	C.V.
35. - 39.9	0.594	0.048	8.1	0.504	0.050	8.5	0.553	0.049	8.8	0.303	0.003	27.4
40. - 44.9	0.664	0.055	8.3	0.656	0.054	8.2	0.608	0.049	8.0	0.346	0.030	8.7
45. - 49.9	0.630	0.057	9.0	0.622	0.055	8.8	0.575	0.057	9.8	0.335	0.044	13.2
50. - 54.9	0.684	0.066	9.7	0.670	0.065	9.7	0.618	0.058	9.5	0.356	0.035	9.8
55. - 59.9	0.727	0.068	9.4	0.713	0.069	9.7	0.654	0.060	9.1	0.372	0.036	9.7
60. - 64.9	0.667	0.074	11.1	0.662	0.072	10.9	0.612	0.064	10.5	0.335	0.054	16.0
65. - 69.9	0.688	0.049	7.1	0.683	0.047	6.9	0.635	0.043	6.9	0.329	0.034	10.3
70. - 74.9	0.814	0.058	7.2	0.799	0.069	8.6	0.699	0.038	5.4	0.391	0.032	8.3
AVERAGE	0.685	0.071	10.4	0.676	0.070	10.3	0.624	0.058	9.3	0.344	0.043	12.6

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.237 A = 0.00259 CORR. COEFF. = 0.990
 STD ERROR (B) = 0.0762
 F TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 3.12
 DEGREES OF FREEDOM = 36

Table 24 R. naevus

SPECIES		R. NAEVUS				

ARCA	COMBINED					
SEX	COMBINED					
PERIOD	ANNUAL					
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT WING
35. - 39.9	2	37.5	275	270	253	189
40. - 44.9	3	43.3	443	436	411	180
45. - 49.9	3	47.5	658	651	605	275
50. - 54.9	10	51.4	880	790	734	337
55. - 59.9	7	58.5	1323	1308	1193	534
60. - 64.9	12	62.8	1634	1623	1466	641
65. - 69.9	3	66.5	1951	1925	1754	793
TOTAL	40					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / WING			ENTIRE / WING		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
35. - 39.9	1.005	0.012	1.1	1.019	0.001	0.1	2.322	0.030	1.3	2.519	0.005	0.2
40. - 44.9	1.076	0.025	2.3	1.016	0.012	1.1	2.287	0.050	2.2	2.460	0.048	2.0
45. - 49.9	1.008	0.010	0.9	1.011	0.003	0.3	2.211	0.085	3.8	2.406	0.102	4.2
50. - 54.9	1.050	0.016	0.6	1.017	0.006	0.6	2.182	0.086	3.9	2.379	0.097	4.1
55. - 59.9	1.109	0.030	2.7	1.012	0.010	1.0	2.231	0.091	4.1	2.474	0.120	4.8
60. - 64.9	1.115	0.035	3.1	1.007	0.004	0.4	2.287	0.060	2.6	2.552	0.120	4.7
65. - 69.9	1.110	0.027	2.4	1.013	0.004	0.4	2.227	0.116	5.2	2.470	0.080	3.3
AVERAGE	1.101	0.028	2.5	1.011	0.007	0.7	2.243	0.086	3.8	2.469	0.119	4.8

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			WING WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
35. - 39.9	0.521	0.018	3.5	0.511	0.018	3.5	0.480	0.011	2.4	0.207	0.008	3.7
40. - 44.9	0.546	0.042	7.7	0.538	0.046	8.5	0.507	0.037	7.4	0.222	0.013	5.7
45. - 49.9	0.613	0.070	11.5	0.607	0.071	11.7	0.563	0.064	11.3	0.256	0.037	14.6
50. - 54.9	0.507	0.046	7.8	0.579	0.043	7.4	0.538	0.043	8.0	0.247	0.029	11.6
55. - 59.9	0.600	0.073	11.1	0.652	0.073	11.1	0.595	0.066	11.1	0.267	0.028	10.6
60. - 64.9	0.686	0.045	6.6	0.681	0.044	6.5	0.615	0.042	6.8	0.269	0.019	7.2
65. - 69.9	0.661	0.042	6.4	0.652	0.039	6.0	0.594	0.024	4.1	0.268	0.023	8.5
AVERAGE	0.630	0.072	11.4	0.624	0.072	11.6	0.572	0.061	10.6	0.255	0.029	11.4

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.501 A = 0.00003 CORR. COEFF. = 0.989
 STD ERROR (B) = 0.0036
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 5.99
 DEGREES OF FREEDOM = 38

Table 25 R. radiata

SPECIES		R. RADIATA				
AREA	SEX	COMBINED		COMBINED ANNUAL		
PERIOD						
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT WING
35. - 39.9	1	39.5	517	502	450	204
40. - 44.9	9	42.9	580	564	489	223
45. - 49.9	6	46.8	733	726	635	275
TOTAL	16					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / WING			ENTIRE / WING		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
35. - 39.9	1.149	0.000	0.0	1.030	0.000	0.0	2.206	0.000	0.0	2.534	0.000	0.0
40. - 44.9	1.187	0.047	3.9	1.028	0.009	0.9	2.193	0.118	5.4	2.603	0.143	5.5
45. - 49.9	1.157	0.070	6.7	1.010	0.010	1.0	2.310	0.097	4.2	2.668	0.123	4.6
AVERAGE	1.174	0.059	5.0	1.021	0.013	1.2	2.238	0.118	5.3	2.623	0.123	5.1

CONDITION FACTORS (WEIGHT*1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			WING WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
35. - 39.9	0.839	0.000	0.0	0.815	0.000	0.0	0.730	0.000	0.0	0.331	0.000	0.0
40. - 44.9	0.735	0.085	11.5	0.715	0.002	11.5	0.621	0.007	14.0	0.283	0.035	12.4
45. - 49.9	0.712	0.048	6.7	0.705	0.046	6.6	0.617	0.051	8.2	0.267	0.012	4.5
AVERAGE	0.733	0.074	10.1	0.717	0.071	9.9	0.626	0.075	12.0	0.280	0.031	11.0

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 2.320 A = 0.09377 CORR. COEFF. = 0.842
 STD ERROR (B) = 0.3973
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 1.71
 DEGREES OF FREEDOM = 14

Table 26 Catfish

SPECIES		CATFISH				
AREA		COMBINED				
SEX		COMBINED				
PERIOD		ANNUAL				
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	MEAN WEIGHT HEADLESS
35. - 39.9	1	37.5	461	438	412	
40. - 44.9	6	42.2	636	589	551	393
45. - 49.9	5	48.3	1158	1055	996	986
50. - 54.9	9	53.2	1316	1230	1140	956
55. - 59.9	8	57.4	1649	1555	1426	1242
60. - 64.9	7	61.8	2071	1930	1767	1276
65. - 69.9	9	67.3	2813	2595	2403	1995
70. - 74.9	9	72.3	3639	3426	3186	2655
75. - 79.9	4	77.3	4725	4367	3992	3166
80. - 84.9	7	82.1	6033	5374	4970	3765
85. - 89.9	2	88.0	7207	6605	6092	4736

TOTAL 67

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED			GUTTED / HEADLESS			ENTIRE / HEADLESS		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
35. - 39.9	1.119	0.0000	0.0	1.053	0.0000	0.0						
40. - 44.9	1.154	0.0061	5.3	1.081	0.0054	5.0	1.307	0.0033	2.5	1.571	0.0013	0.8
45. - 49.9	1.158	0.0043	3.7	1.092	0.0048	4.4	1.163	0.0020	0.0	1.397	0.0000	0.0
50. - 54.9	1.155	0.0029	2.5	1.070	0.0024	2.2	1.257	0.0004	0.3	1.468	0.0037	2.5
55. - 59.9	1.153	0.0011	0.9	1.060	0.0035	3.3	1.260	0.0007	0.6	1.506	0.0060	4.0
60. - 64.9	1.172	0.0047	4.0	1.076	0.0041	3.8	1.298	0.0023	1.8	1.550	0.0032	2.1
65. - 69.9	1.173	0.0059	5.1	1.085	0.0046	4.2	1.264	0.0045	3.6	1.509	0.0090	6.5
70. - 74.9	1.146	0.0062	5.4	1.064	0.0043	4.1	1.287	0.0024	1.9	1.480	0.0091	6.2
75. - 79.9	1.181	0.0065	5.5	1.081	0.0042	3.9	1.275	0.0000	0.0	1.402	0.0000	0.0
80. - 84.9	1.214	0.0089	7.3	1.124	0.0069	6.1	1.292	0.0036	2.8	1.596	0.0084	5.3
85. - 89.9	1.185	0.0070	5.9	1.091	0.0012	1.1	1.206	0.0063	4.9	1.522	0.0045	1.0
AVERAGE	1.166	0.0058	5.0	1.080	0.0045	4.2	1.276	0.0039	3.0	1.518	0.0083	5.5

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT			HEADLESS WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
35. - 39.9	0.874	0.0000	0.0	0.831	0.0000	0.0	0.781	0.0000	0.0			
40. - 44.9	0.846	0.0061	7.2	0.703	0.0061	7.0	0.733	0.0049	6.7	0.546	0.0028	5.2
45. - 49.9	1.030	0.0077	7.5	0.937	0.0151	16.2	0.885	0.0152	17.1	0.920	0.0000	0.0
50. - 54.9	0.872	0.0096	11.0	0.816	0.0096	11.0	0.756	0.0093	12.3	0.620	0.0088	14.2
55. - 59.9	0.868	0.0110	12.7	0.818	0.0096	11.7	0.751	0.0071	9.4	0.642	0.0030	4.6
60. - 64.9	0.876	0.0093	10.6	0.815	0.0094	11.5	0.747	0.0062	8.3	0.549	0.0033	6.0
65. - 69.9	0.923	0.0116	12.6	0.851	0.0116	13.6	0.788	0.0116	14.7	0.652	0.0070	10.0
70. - 74.9	0.960	0.0084	8.8	0.903	0.0077	9.6	0.840	0.0095	11.3	0.668	0.0041	6.2
75. - 79.9	1.016	0.0092	9.0	0.939	0.0076	8.1	0.860	0.0059	6.8	0.707	0.0000	0.0
80. - 84.9	1.091	0.0130	12.7	0.970	0.0097	10.0	0.897	0.0073	8.1	0.690	0.0067	9.0
85. - 89.9	1.059	0.0064	6.1	0.970	0.0048	5.0	0.893	0.0002	0.2	0.696	0.0035	5.1
AVERAGE	0.937	0.0131	14.0	0.867	0.0110	12.7	0.803	0.0102	12.7	0.658	0.0083	12.6

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.246 A = 0.00314 CORR. COEFF. = 0.988
 STD ERROR (B) = 0.0627
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 3.92
 DEGREES OF FREEDOM = 65

Table 27 Pout whiting

SPECIES ----- AREA SEX PERIOD		POUT WHITING COMBINED COMBINED ANNUAL				
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
20. - 24.9	13	23.8	178	175	164	
25. - 29.9	52	28.6	310	303	277	
30. - 34.9	50	32.1	416	408	371	
35. - 39.9	23	38.0	796	781	693	
40. - 44.9	5	42.1	1095	1067	930	
TOTAL	143					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.085	0.012	1.1	1.020	0.006	0.6
25. - 29.9	1.119	0.022	1.9	1.024	0.013	1.2
30. - 34.9	1.123	0.022	2.0	1.020	0.010	0.9
35. - 39.9	1.142	0.041	3.6	1.019	0.008	0.8
40. - 44.9	1.173	0.062	5.3	1.026	0.017	1.7
AVERAGE	1.123	0.032	2.8	1.021	0.011	1.0

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	1.321	0.151	11.4	1.296	0.155	12.0	1.210	0.139	11.4
25. - 29.9	1.322	0.119	9.0	1.292	0.123	9.6	1.182	0.100	9.1
30. - 34.9	1.251	0.103	14.6	1.220	0.104	15.0	1.114	0.164	14.7
35. - 39.9	1.429	0.212	14.8	1.403	0.210	15.0	1.240	0.150	12.1
40. - 44.9	1.481	0.313	21.1	1.441	0.285	19.8	1.257	0.219	17.4
AVERAGE	1.320	0.181	13.7	1.293	0.180	14.0	1.175	0.150	12.8

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.075 A = 0.01005 CORR. COEFF. = 0.973
 STD ERROR (B) = 0.0619
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 1.22
 DEGREES OF FREEDOM = 141

Table 28 Torsk

SPECIES		TORSK			

AREA	COMBINED				
SEX	COMBINED				
PERIOD	ANNUAL				
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED
40. - 44.9	2	43.0	854	847	788
45. - 49.9	0				
50. - 54.9	0				
55. - 59.9	2	57.5	2007	1991	1775
60. - 64.9	1	62.5	2524	2507	2268
65. - 69.9	1	67.5	3763	3759	3183
70. - 74.9	1	71.5	4445	4409	3866
TOTAL	7				

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
40. - 44.9	1.084	0.011	1.0	1.008	0.006	0.6
45. - 49.9						
50. - 54.9						
55. - 59.9	1.134	0.054	4.8	1.008	0.002	0.1
60. - 64.9	1.113	0.000	0.0	1.007	0.000	0.0
65. - 69.9	1.102	0.000	0.0	1.001	0.000	0.0
70. - 74.9	1.150	0.000	0.0	1.000	0.000	0.0
AVERAGE	1.126	0.042	3.7	1.007	0.004	0.4

CONDITION FACTORS (WEIGHT=1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
40. - 44.9	1.073	0.000	0.0	1.064	0.014	1.4	0.989	0.018	1.8
45. - 49.9									
50. - 54.9									
55. - 59.9	1.050	0.056	5.3	1.049	0.054	5.2	0.933	0.005	0.5
60. - 64.9	1.034	0.000	0.0	1.027	0.000	0.0	0.929	0.000	0.0
65. - 69.9	1.224	0.000	0.0	1.222	0.000	0.0	1.035	0.000	0.0
70. - 74.9	1.216	0.000	0.0	1.206	0.000	0.0	1.058	0.000	0.0
AVERAGE	1.105	0.003	7.5	1.097	0.004	7.7	0.981	0.053	5.4

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.195 A = 0.00498 CORR. COEFF. = 0.995
 STD ERROR (B) = 0.1485
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 1.31
 DEGREES OF FREEDOM = 5

Table 29 Brill

SPECIES		BRILL				

AREA	SEX	PERIOD	COMBINED			
			ANNUAL			
LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT WHOLE GM	MEAN WEIGHT EVACUATED	MEAN WEIGHT GUTTED	
30. - 34.9	1	32.5	498	496	484	
35. - 39.9	0					
40. - 44.9	3	42.5	1217	1206	1169	
45. - 49.9	11	47.8	1603	1569	1522	
50. - 54.9	4	52.5	2127	2102	2045	
55. - 59.9	3	57.5	2578	2557	2476	
TOTAL	22					

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
30. - 34.9	1.029	0.000	0.0	1.004	0.000	0.0
35. - 39.9						
40. - 44.9	1.043	0.014	1.4	1.010	0.009	0.9
45. - 49.9	1.053	0.012	1.2	1.021	0.013	1.3
50. - 54.9	1.040	0.010	1.0	1.012	0.009	0.8
55. - 59.9	1.041	0.002	0.2	1.009	0.003	0.3
AVERAGE	1.046	0.012	1.2	1.015	0.012	1.2

CONDITION FACTORS (WEIGHT*100 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
30. - 34.9	1.451	0.000	0.0	1.445	0.000	0.0	1.410	0.000	0.0
35. - 39.9									
40. - 44.9	1.582	0.164	10.4	1.568	0.175	11.1	1.519	0.176	11.6
45. - 49.9	1.477	0.154	10.4	1.447	0.160	11.0	1.404	0.152	10.8
50. - 54.9	1.461	0.178	12.2	1.444	0.180	12.5	1.405	0.175	12.5
55. - 59.9	1.354	0.134	9.9	1.343	0.135	10.0	1.301	0.130	10.0
AVERAGE	1.471	0.155	10.5	1.449	0.150	10.9	1.406	0.153	10.9

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 2.849 A = 0.02540 CORR. COEFF. = 0.964
 STD ERROR (B) = 0.1767
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 0.85
 DEGREES OF FREEDOM = 20

Table 30 John Dory

SPECIES JOHN DORY

 AREA COMBINED
 SEX COMBINED
 PERIOD ANNUAL

LENGTH GROUP CM.	NO. OF OBS.	MEAN LENGTH CM	MEAN WEIGHT GM WHOLE	MEAN WEIGHT GM EVACUATED	MEAN WEIGHT GM GUTTED
20. - 24.9	1	22.5	158	157	146
25. - 29.9	2	27.5	301	292	265
30. - 34.9	10	33.2	521	507	455
35. - 39.9	12	37.7	807	802	711
40. - 44.9	12	43.0	1397	1374	1155
45. - 49.9	8	46.5	1895	1892	1551
50. - 54.9	9	52.2	2574	2559	2041
TOTAL	54				

CONVERSION FACTORS

LENGTH GROUP CM	ENTIRE / GUTTED			ENTIRE / EVACUATED		
	FACTOR	S.D.	C.V.	FACTOR	S.D.	C.V.
20. - 24.9	1.082	0.000	0.0	1.006	0.000	0.0
25. - 29.9	1.136	0.047	4.2	1.031	0.038	3.7
30. - 34.9	1.147	0.042	3.7	1.030	0.043	4.2
35. - 39.9	1.133	0.021	1.9	1.006	0.008	0.8
40. - 44.9	1.202	0.072	6.0	1.015	0.033	3.2
45. - 49.9	1.220	0.045	3.7	1.002	0.002	0.2
50. - 54.9	1.256	0.061	4.9	1.007	0.015	1.4
AVERAGE	1.183	0.068	5.8	1.013	0.027	2.6

CONDITION FACTORS (WEIGHT*1000 / LENGTH ** 3)

LENGTH GROUP CM	WHOLE WEIGHT			EVACUATED WEIGHT			GUTTED WEIGHT		
	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.	MEAN	S.D.	C.V.
20. - 24.9	1.387	0.000	0.0	1.378	0.000	0.0	1.282	0.000	0.0
25. - 29.9	1.475	0.437	29.6	1.425	0.371	26.1	1.292	0.331	25.6
30. - 34.9	1.418	0.072	5.1	1.378	0.074	5.4	1.237	0.063	5.1
35. - 39.9	1.500	0.163	10.9	1.491	0.158	10.6	1.324	0.135	10.2
40. - 44.9	1.737	0.191	11.0	1.711	0.172	10.1	1.442	0.098	6.8
45. - 49.9	1.800	0.193	10.3	1.876	0.191	10.2	1.539	0.121	7.9
50. - 54.9	1.800	0.241	13.4	1.788	0.248	13.9	1.430	0.143	10.0
AVERAGE	1.641	0.250	15.2	1.621	0.251	15.5	1.381	0.154	11.1

LENGTH - WEIGHT CONSTANTS (W=AL**B)

B = 3.542 A = 0.00216 CORR. COEFF. = 0.987
 STD ERROR (B) = 0.0011
 T TEST FOR SIGNIFICANCE OF DIFFERENCE OF B FROM 3 = 6.68
 DEGREES OF FREEDOM = 52

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1. NEADS 6 first deployment, October 77-June 78 (1983).
2. Current meter observations from the Charlie-Gibbs Fracture Zone (1984).
3. Current meter observations from the Porcupine Abyssal Plain, June 1979-June 1980 (1985).
4. Current meter observations near the Sellafield pipeline, May 1981-December 1983 (1985).
5. Salmon and migratory trout fisheries statistics for England and Wales, 1983 (1985).
6. Marine environment data inventory for the Bay of Biscay, Celtic Sea and West of Ireland, March-July 1977 (1985).
7. Salmon and migratory trout fisheries statistics for England and Wales, 1984 (1985).
8. Current meter observations near the Porcupine Bank, 1981-1983 (1986).
9. Salmon and migratory trout fisheries statistics for England and Wales, 1985 (1986).