A Categorical Approach to Modeling Catch at Age for Various Sectors of the Gray Triggerfish (*Balistes capriscus*) Fishery in the Gulf of Mexico

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Abstract

Estimation of the age distribution of fish in different fisheries sectors is a necessary tool for age-based modeling and stock assessment. Two methods of estimating ages from fork lengths of gray triggerfish (*Balistes capriscus*) sampled from both recreational and commercial sectors in Gulf of Mexico (Gulf) fisheries are compared and described. A multinomial model was used to estimate the probability (± standard error) of a fish of a particular length class (25 mm length bins) occurring in a particular age class. This model was based on age and growth data based on hard part analyses combined from numerous studies throughout the Gulf. An age frequency distribution was then developed for each fish in the aforementioned fishery dependent data sets, and those frequencies were stacked for all fish in a particular data set to form an overall age frequency distribution. The more known technique of estimating age from length using an inverted form of the von Bertalanffy growth function was also used. The categorical modeling technique allowed the calculation of standard error for each age class in the overall frequency distributions, which estimation of age using inverted von Bertalanffy functions does not make possible.

Introduction

Estimation of the age distribution of fish in different fisheries sectors is a necessary tool for age-based modeling and stock assessment. Traditionally, a random sample of the fish landed by various sectors of a particular fishery are measured and weighed and this information is used to infer characteristics and stock structure of the species undergoing assessment. Oftentimes, cohorts are identified by estimating an age for each length using an inverted von Bertalanffy function that was determined by a study that used hard part analysis to establish the relationship and parameters for that particular species. The effectiveness of this methodology is often contingent on the tightness of fit of the computed relationship between length and age as determined by hard part analysis. In addition, estimation of age using the inverted von Bertalanffy technique does not account for the standard error inherent in the estimation procedure.

For the gray triggerfish population in the Gulf of Mexico, hard part analysis has identified that a wide range of lengths are possible for any given age (Ingram 2001). The presence of a wide range of lengths for a given age often precludes the possibility of conducting an age-based assessment on a population due to the presence of increased uncertainty. To overcome this problem, a categorical modeling method of estimating length at age was explored for gray triggerfish. The categorical modeling approach uses a multinomial model to estimate the probability of a particular fish within a particular length class occurring in a particular age class. This methodology is not based directly on the von Bertalanffy growth function and therefore the goodness of fit of that relationship is not directly relevant to estimating the catch at age. Further, the categorical modeling approach allows for the calculation of standard error, which is not possible when calculating age from length using an inverted von Bertalanffy function.

Materials and Methods

A multinomial logistic model was used to estimate the probability (± standard error) of a fish of a particular length class (i.e. fish were assigned to 25-mm fork length bins) occurring in a particular age class. This model was based on age and growth data collected from hard part analyses combined from numerous studies throughout the Gulf (see SEDAR9-DW-Report-GT, Section 2.1.2, Age and Growth Studies). The multinomial logistic equation is as follows:

$$Logit(ageclass) = Constant + sizeclass + Error.$$

When *ageclass* has *m* categories, the above equation would produce *m*-1 resulting equations, with *m*-1 categories of *ageclass* compared to the one comparison category of *ageclass* (Agresti 1996). Rearrangement of the equation allows for the estimation of the probability (± standard error) of an individual fish occurring in an age class depending on the size class in which it occurs. This results in an age probability distribution for an individual fish with corresponding standard error estimates for its probability of occurrence in each age class.

When multiple fish are ran through the model, each is one is separated into its own age-probability distribution based on its size class. If these probability distributions for all fish are "stacked" (i.e. summed) by age class, the result is an overall age-frequency distribution based on the number of fish initially entered into the model. Likewise, the estimated standard errors of the probability of occurrence in each age class for each fish can be summed by age class resulting in estimates of standard error for each age class in the overall age-frequency distribution. Using the described model, an age probability distribution was developed for gray triggerfish captured in the Gulf of Mexico from the commercial and recreational fishing sectors. Data is stratified by fleet (commercial, headboat, MRFSS and Texas), year and region, where the Eastern Gulf represents fish landed east of the Mississippi River, and the Western Gulf represents fish landed west of the Mississippi. Probabilities calculated for each fish were summed by age class within each stratum to form an overall age frequency distribution.

The more known technique of estimating age from length using an inverted form of the von Bertalanffy growth function was also used and is compared. Von Bertalanffy parameters were estimated during the Southeast Data Assessment and Review (SEDAR) Data Workshop IX (20-24 June 2005, New Orleans, Louisiana); estimations were derived from a study combining age and growth data from Hood and Johnson (1997), Ingram (2001), and unpublished age data from gray trigger spines collected throughout the Gulf from 1992-2002 by the NMFS Panama City Lab. Three different sets of parameters were determined for each region: the entire Gulf, Eastern Gulf and Western Gulf. Sloped (also known as linear) von Bertalanffy functions were applied to the Eastern Gulf and Gulfwide, while the traditional von Bertalanffy function was applied to the Western Gulf.

Parameter	Gulfwide	Eastern Gulf	Western Gulf
Linf	336.3792	305.1669	407.2798
k	0.636452	0.741429	0.263649
t-zero	-0.55096	-0.56282	-1.18382
c	11.72933	18.19991	

The categorical modeling technique made possible the calculation of standard error for each age class in the overall frequency distributions, which estimation of age using inverted von Bertalanffy functions does not permit.

Results

Appendix A provides the results of both the categorical and inverse von Bertalanffy estimations as described above in tabular form. Appendix B presents age frequency histograms for each stratum (fleet, region, year) calculated using the two approaches. Histograms derived using the categorical modeling approach are presented in the left column, while histograms for the same strata, but calculated using an inverse von Bertalanffy equation are presented in the right column for comparison.

Literature Cited

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Appendix A: Tables of Age Estimation Percentages

%	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	12.1817	0.41641	0.66597	0.63989	0.62875	0.80096	0.95262	1.2379	1.00652	1.59103	0.77828	0.78849	1.13655	1.05215	1.01622	0.53988
1	33.9117	5.30105	6.91734	7.11762	6.68387	7.15857	8.17842	8.48009	9.04973	10.455	7.59288	7.53319	8.87228	9.00657	8.03842	6.57602
2	23.1707	17.2198	20.249	21.7395	19.5563	19.761	22.7043	22.1161	22.2917	25.1671	21.2549	22.1117	23.1472	23.4671	20.4431	20.1699
3	11.5877	22.4594	24.3039	25.9557	25.0352	23.6965	24.6278	24.7254	24.4953	23.2246	23.9793	24.4888	25.0306	24.1608	23.467	23.5789
4	8.6095	19.4378	18.7019	19.0308	19.4787	19.384	17.8887	18.0939	18.3998	15.5906	17.9649	17.7339	17.4424	17.0158	18.2018	18.6864
5	6.143	13.54	11.2829	10.5728	11.4752	12.2008	10.8947	10.6272	10.7713	9.73198	11.0177	10.7974	10.1755	10.2952	11.4577	12.2832
6	3.06517	9.0285	7.39585	6.48431	7.25883	7.25269	6.63066	6.4798	6.20927	6.52177	7.46072	7.17969	6.41183	6.54506	7.35342	7.83569
7	0.7205	6.031	4.96999	4.58897	5.02928	5.20571	4.55146	4.52324	4.35643	3.97684	4.89201	4.72403	4.18234	4.36768	4.96366	5.32199
8	0.18317	3.01641	2.42287	1.92603	2.33206	2.21697	1.82753	1.82447	1.73477	1.71266	2.35424	2.22466	1.76657	1.825	2.37258	2.41747
9	0.42735	1.49775	1.26484	0.93843	1.15221	1.17956	0.9108	0.94822	0.86775	0.85203	1.09927	0.9617	0.85425	0.96868	1.15095	1.13756
10	0	2.05225	1.8258	1.00616	1.36983	1.14341	0.8334	0.94406	0.81774	1.17687	1.60612	1.45682	0.98084	1.29635	1.53547	1.45337
SE	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
0	2.9946	0.16158	0.23546	0.23348	0.21903	0.26539	0.32036	0.37323	0.3334	0.49496	0.2667	0.2757	0.36173	0.35146	0.31916	0.20355
1	5.6405	1.03332	1.28158	1.27601	1.26505	1.27406	1.32541	1.42413	1.52917	1.60895	1.31996	1.28363	1.46872	1.45801	1.40061	1.13593
2	4.11995	1.75634	1.97685	2.08947	2.0101	2.04519	2.11044	2.15173	2.25599	2.21981	1.99769	2.01393	2.16875	2.13635	2.06406	1.89945
3	2.66183	2.57637	2.46373	2.51558	2.55755	2.60988	2.51905	2.53196	2.56841	2.39352	2.45179	2.42244	2.46798	2.42905	2.50823	2.50456
4	2.72973	2.90649	2.60901	2.39826	2.61228	2.64599	2.36818	2.39862	2.4705	2.2889	2.55365	2.44556	2.3304	2.36596	2.62323	2.61393
5	2.39067	2.67711	2.23104	1.94816	2.20508	2.27581	1.99785	1.99593	2.03536	1.97995	2.23338	2.13036	1.92772	2.00184	2.30905	2.3228
6	1.65857	2.32841	1.90974	1.57559	1.83531	1.84001	1.61456	1.60776	1.5904	1.66992	1.92066	1.80765	1.5826	1.66052	1.93907	1.96366
7	0.52818	1.93182	1.5644	1.32934	1.52117	1.54966	1.34408	1.33384	1.27234	1.28396	1.54995	1.47517	1.25985	1.33848	1.56751	1.64043
8	0.0815	1.41398	1.10991	0.85261	1.04765	1.00105	0.8182	0.81484	0.76457	0.79577	1.08568	1.01822	0.79022	0.83871	1.08294	1.12136
9	0.4255	0.92237	0.7485	0.55409	0.68865	0.71766	0.56139	0.57935	0.53041	0.5391	0.66204	0.58015	0.52636	0.58596	0.69846	0.6985
10	0	1.00743	0.79136	0.48692	0.65574	0.60041	0.44001	0.47	0.4175	0.52462	0.74639	0.68451	0.45578	0.56527	0.73434	0.73327

Table 1: Categorically modeled percentage caught at age estimations for commercial gray triggerfish Gulfwide.

%	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	16.6667	0	0	0.23511	0.31646	0.21042	0	0.5059	0.20202	0.49689	0.31056	0.24631	0.43668	0	0.53476	0
1	66.6667	4.8	9.18221	6.97492	7.67405	12.5723	15.6905	15.0927	16.1616	21.4907	10.8696	8.867	13.5371	15.208	12.656	7.95455
2	16.6667	22.9333	24.8207	29.5455	23.6551	22.9879	29.3565	27.0658	27.3737	34.4099	29.0373	32.7586	29.6943	31.9943	25.1337	28.7879
3	0	19.2	20.66	22.9624	21.2816	16.5176	16.1967	18.3811	18.3838	14.4099	18.0124	20.197	21.8341	18.3644	17.8253	18.1818
4	0	10.1333	13.3429	14.3417	15.7437	12.6249	13.449	12.6476	11.9192	9.06832	12.5776	11.33	12.6638	10.1865	12.656	10.6061
5	0	8	9.46915	8.62069	8.5443	7.68017	6.65221	8.85329	6.9697	5.96273	7.91925	7.63547	6.33188	6.59971	6.77362	6.06061
6	0	4.53333	4.87805	5.25078	5.77532	6.68069	4.4107	4.55312	6.06061	2.36025	4.96894	3.69458	4.0393	4.44763	5.88235	4.54545
7	0	4	2.29555	3.21317	3.24367	4.94477	3.3261	3.37268	4.44444	1.86335	2.48447	2.70936	1.8559	2.72597	3.38681	4.54545
8	0	4	3.5868	2.82132	2.68987	3.26144	2.60304	2.19224	1.91919	1.73913	1.86335	2.46305	2.51092	2.29555	3.0303	4.16667
9	0	3.46667	1.43472	0.86207	2.21519	3.57706	2.2415	1.43339	2.42424	0.62112	1.70807	0.98522	1.63755	1.29125	2.6738	3.0303
10	0	18.9333	10.33	5.17241	8.86076	8.94266	6.07375	5.90219	4.14141	7.57764	10.2484	9.1133	5.45852	6.88666	9.44742	12.1212

Table 2: Von Bertalanffy modeled percentage caught at age estimations for commercial gray triggerfish Gulfwide.

%	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0.482	0.43557	0.15757	1.45737	0.93408	1.13783	1.18903	1.56568	1.37156	1.77075	0.8965	0.8803	1.29153	1.35294	1.35562	0.53778
1	8.675	5.88356	2.55268	7.40817	8.58264	9.41053	9.58772	10.0859	11.0765	11.5459	8.50814	8.37976	9.9608	10.7346	9.75002	6.82577
2	40	17.2246	3.97714	17.4038	23.5374	24.3524	25.9943	25.6155	26.2753	27.7082	23.6956	24.4511	26.0852	27.1664	23.0776	20.7049
3	26.265	19.8756	6.95176	19.7492	26.519	25.4548	26.6187	26.3429	26.2732	24.561	25.7284	26.6037	27.1387	25.1768	22.8932	24.8591
4	14.458	16.5405	14.6591	17.8764	18.2752	18.1958	17.8241	17.6889	17.7086	15.2883	18.189	18.0298	17.3375	15.9883	16.9567	19.7357
5	5.301	12.7209	16.6076	13.0614	9.64107	9.98715	9.2765	8.97018	8.78971	8.43483	9.82924	9.40176	8.63472	8.67435	10.8141	11.9581
6	2.651	11.3151	19.3469	9.09647	5.69236	5.35653	4.63122	4.70707	4.29081	5.03126	5.82197	5.47271	4.6617	4.9282	6.64042	6.83958
7	1.205	5.43759	9.16627	5.17686	3.04168	3.02795	2.65032	2.63301	2.34575	2.60519	3.26916	3.17847	2.4766	2.72572	3.58468	3.97949
8	0.964	4.14128	8.48562	3.20368	1.62606	1.3462	1.06041	1.08502	0.91591	1.25711	1.73604	1.58821	1.08023	1.23437	2.07538	1.99876
9	0	2.25301	5.46133	1.94858	0.84949	0.83854	0.63591	0.65828	0.52802	0.72631	0.88488	0.75245	0.62372	0.80174	1.08548	1.12098
10	0	4.17198	12.6339	3.61787	1.3007	0.89205	0.5316	0.64729	0.42444	1.07115	1.44085	1.26151	0.70908	1.21633	1.76647	1.43963
SE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0.34	0.1817	0.04697	0.42676	0.32215	0.37363	0.39226	0.48629	0.44315	0.55961	0.31018	0.31423	0.42318	0.44669	0.43183	0.20749
1	1.382	1.1513	1.28414	1.40925	1.5361	1.56757	1.51786	1.65901	1.82939	1.77691	1.46572	1.42749	1.64534	1.6741	1.60526	1.20667
2	2.4048	1.49907	0.42802	1.80247	2.22792	2.30045	2.3388	2.39077	2.54929	2.39015	2.17418	2.18112	2.36719	2.32815	2.19835	1.96501
3	2.1602	2.48821	1.74756	2.52838	2.63207	2.69679	2.6586	2.66327	2.72091	2.5251	2.60483	2.58908	2.61559	2.51993	2.59827	2.72255
4	1.7263	3.46134	5.18356	3.29679	2.67529	2.6289	2.41579	2.45309	2.51344	2.38937	2.67974	2.57172	2.4108	2.41925	2.82289	2.89696
5	1.1	3.43169	5.61759	3.16632	2.18244	2.14357	1.90243	1.92204	1.94258	1.97285	2.23467	2.1117	1.86518	1.96144	2.52712	2.50524
6	0.7885	3.40912	6.24623	2.82707	1.76446	1.654	1.40634	1.44927	1.41106	1.58344	1.81111	1.6848	1.43076	1.55818	2.10038	2.01887
7	0.5356	2.49252	4.5077	2.18071	1.28826	1.22832	1.06903	1.07552	0.97011	1.12703	1.36634	1.29987	1.0312	1.1405	1.53639	1.58586
8	0.48	2.20819	4.46749	1.71549	0.90885	0.7723	0.62054	0.63477	0.53899	0.71051	0.96394	0.89001	0.6318	0.71408	1.12024	1.11477
9	0	1.43202	3.22905	1.23505	0.56383	0.57636	0.4498	0.46707	0.39117	0.50122	0.58865	0.50212	0.4285	0.52655	0.72786	0.75062
10	0	1.8999	4.86984	1.57092	0.64004	0.48611	0.32654	0.37106	0.27532	0.50225	0.7123	0.64756	0.37173	0.54023	0.85319	0.76303

Table 3: Categorically modeled percentage caught at age estimations for commercial gray triggerfish from the Eastern Gulf.

%	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0.396825	0.632911	3.409091	2.999318	5.890603	6.634383	5.765199	7.296734	9.047994	4.067536	3.699137	5.843373	7.46124	5.118602	2.419355
2	100	10.31746	0.632911	5.681818	15.33742	14.72651	16.46489	16.92872	17.23419	20.84972	15.50269	17.38594	18.19277	20.93023	13.60799	13.50806
3	0	13.49206	3.164557	7.954545	23.44922	17.25105	17.62712	20.23061	20.36136	16.67978	17.80507	21.20838	25.78313	18.60465	12.98377	12.09677
4	0	5.952381	1.265823	10.98485	16.35992	15.80178	20.53269	17.19078	18.76303	16.52242	15.34919	15.04316	16.92771	13.17829	12.48439	15.52419
5	0	2.777778	0	11.74242	9.134288	10.61244	10.3632	13.57442	13.20361	6.215578	10.82118	9.74106	9.216867	7.073643	8.988764	9.274194
6	0	4.761905	2.531646	6.439394	6.748466	10.93969	9.878935	8.752621	9.5205	5.664831	9.286262	7.644883	5.481928	8.333333	8.614232	10.68548
7	0	1.587302	2.531646	4.545455	4.703476	6.965872	7.554479	5.503145	5.211953	3.855232	5.065234	5.178792	4.939759	4.94186	6.741573	9.677419
8	0	4.761905	0	3.409091	3.544649	5.610098	3.535109	3.144654	4.169562	4.169945	1.841903	0.986437	3.13253	3.100775	5.493134	6.048387
9	0	10.31746	5.063291	6.818182	3.749148	2.010285	1.985472	2.830189	1.181376	2.911094	3.223331	3.945746	3.373494	2.034884	3.870162	5.040323
10	0	45.63492	84.17722	39.01515	13.9741	10.19168	5.423729	6.079665	3.057679	14.0834	17.03761	15.16646	7.108434	14.34109	22.09738	15.72581

Table 4: Von Bertalanffy modeled percentage caught at age estimations for commercial gray triggerfish from the Eastern Gulf.

%	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	86.957	0.96262	1.92321	1.26998	0.73817	1.79087	1.42163	0	0	1.52555	0	0	0.88731	0.53348	0.42418	0
1	11.801	0.13064	0.261	0.17235	0.10018	0.24304	0.19293	0	0	0.20703	0	0	0.12042	0.0724	0.05757	0
2	0	0.78687	1.2908	1.03093	0.6312	0.8372	0.91618	0.6133	0.24847	1.26231	0.12402	0.61722	0.54043	0.69259	0.67647	1.71049
3	1.242	3.18327	3.84291	3.44201	3.35175	3.62683	3.24002	3.45013	2.7427	3.81044	2.69712	2.92815	3.37886	3.49666	3.51556	4.27028
4	0	11.0656	12.4556	13.1353	10.7328	9.99264	11.6712	11.1948	10.4016	12.9382	11.3116	12.459	10.2153	11.2547	12.0842	14.3054
5	0	19.1209	21.2146	22.2508	19.478	18.1546	20.5863	19.5571	19.5341	23.3864	19.6403	21.609	19.8993	20.6394	19.9781	22.9373
6	0	21.7366	22.7206	23.6574	22.1457	21.023	22.4515	21.1894	22.1246	22.3062	23.5903	20.4177	20.7377	21.9487	23.1423	21.3686
7	0	25.6781	21.666	20.5796	24.8963	26.3404	23.7389	24.911	26.377	20.6469	23.7095	24.2914	25.7251	23.7609	22.4318	21.0342
8	0	9.92125	8.2927	8.08607	10.301	10.1987	9.16364	10.6432	10.4359	7.20179	11.3185	8.88037	10.1401	9.89102	10.004	7.16503
9	0	3.1832	2.90919	2.95065	3.86565	3.71906	3.0041	4.0823	3.8806	3.46696	4.04682	3.7778	4.22842	3.99792	3.7762	2.48442
10	0	4.23101	3.42341	3.42493	3.75929	4.07358	3.61366	4.35884	4.25499	3.24822	3.56184	5.01931	4.12713	3.71217	3.90957	4.72433
SE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	2.6542	0.02938	0.0587	0.03876	0.02253	0.05466	0.04339	0	0	0.04656	0	0	0.02708	0.01628	0.01295	0
1	2.5426	0.02815	0.05623	0.03713	0.02158	0.05236	0.04157	0	0	0.04461	0	0	0.02594	0.0156	0.0124	0
2	0	0.51441	0.84537	0.70679	0.42559	0.51579	0.64031	0.39522	0.21889	0.84926	0.1225	0.42466	0.40166	0.48549	0.4155	1.10091
3	0.8729	2.54588	2.82964	2.69576	2.85268	2.86969	2.5979	2.92562	2.62795	2.86807	2.64579	2.47248	3.01986	2.9946	2.89679	2.91241
4	0	4.30865	4.8744	5.02388	4.44219	4.11836	4.56474	4.57016	4.18166	5.07403	4.62897	4.89181	4.30899	4.62335	4.82091	5.22546
5	0	6.08579	6.53855	6.73273	6.48255	6.19061	6.29959	6.54709	6.42094	7.00836	6.53352	6.58886	6.64168	6.74627	6.69739	6.73543
6	0	7.23641	6.84621	6.87169	7.04272	6.97073	7.19414	7.04979	6.90799	6.70006	7.63133	5.94816	6.51626	7.01	6.9684	6.43982
7	0	8.99298	7.45909	7.09991	8.33084	8.94278	8.2752	8.38725	8.74573	7.12249	8.12653	7.8828	8.24013	7.92361	7.55167	7.32713
8	0	6.25151	4.62314	4.39697	5.74972	6.2065	5.4557	5.89979	6.16017	4.11448	5.97966	5.23005	5.5472	5.29891	5.24237	4.24862
9	0	2.33271	2.17877	2.2201	2.8299	2.70629	2.22275	2.97193	2.85638	2.38766	2.9928	2.55445	3.08424	2.92874	2.8312	1.91258
10	0	2.77451	2.04527	1.91885	2.37245	2.79065	2.24651	2.59778	2.82387	1.93338	1.9064	3.29669	2.6813	2.17674	2.20847	2.73733

Table 5: Categorically modeled percentage caught at age estimations for commercial gray triggerfish from the Western Gulf.

%	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	20	0	0	0.253593	0	0	0	0	0	0.869565	0	0	0	0	0.966184	0
2	80	2.768166	4.090909	2.874049	1.147541	3.614458	2.624672	0	0	4.347826	0	0	2.020202	1.219512	0.966184	3.846154
3	0	6.574394	13.18182	10.73542	6.065574	5.914567	9.973753	5.533597	4	12.17391	1.694915	11.42857	5.050505	8.536585	7.246377	14.10256
4	0	12.45675	13.0303	17.49789	10.65574	10.51479	16.27297	8.695652	10.4	19.13043	13.55932	11.42857	12.12121	12.19512	11.5942	16.66667
5	0	12.80277	15.45455	16.73711	12.13115	10.62432	13.38583	15.01976	16	17.3913	11.86441	11.42857	13.13131	10.36585	14.49275	19.23077
6	0	11.76471	11.06061	12.08791	11.14754	10.07667	9.186352	12.64822	9.6	6.086957	16.94915	17.14286	7.070707	13.41463	13.52657	15.38462
7	0	6.228374	7.424242	8.030431	10.65574	7.557503	7.349081	11.85771	10.4	6.956522	8.474576	5.714286	11.11111	9.756098	8.21256	5.128205
8	0	3.114187	2.575758	3.381234	5.901639	3.943045	3.937008	3.952569	5.2	3.478261	10.16949	5.714286	5.050505	7.926829	9.178744	1.282051
9	0	4.152249	6.212121	5.409975	5.409836	5.914567	4.724409	4.743083	3.6	3.478261	6.779661	2.857143	5.050505	3.04878	6.280193	1.282051
10	0	40.13841	26.9697	22.99239	36.88525	41.84009	32.54593	37.54941	40.8	26.08696	30.50847	34.28571	39.39394	33.53659	27.53623	23.07692

Table 6: Von Bertalanffy modeled percentage caught at age estimations for commercial gray triggerfish from the Western Gulf.

%	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	2.65706	2.92978	2.73032	3.10951	2.70726	2.07492	2.42198	1.84404	2.52758	1.94508	1.90295	2.59052	2.36911	2.03584	2.17942	2.16085	2.0334	2.3476	2.19652
1	14.258	17.3388	15.1866	17.4085	16.5016	13.8996	15.0116	12.5179	14.4414	13.0343	12.9113	14.6866	13.8878	13.1029	13.2555	13.5317	12.8475	13.868	13.0951
2	26.8938	27.5958	29.0729	27.7466	29.2952	27.6462	28.6457	27.348	28.7924	28.8829	29.5631	29.5722	30.7118	31.0683	28.3217	30.6964	30.249	30.6664	29.7968
3	22.395	21.337	22.2391	20.7226	21.6102	23.1917	22.7385	24.003	22.7922	23.7203	23.9524	22.3857	23.0001	23.569	23.1885	23.2246	23.5155	22.9062	23.4767
4	14.1653	13.1632	13.1461	12.9545	12.6933	14.3076	13.5207	14.9325	13.4874	14.032	13.7834	13.0531	12.7369	12.8556	14.1012	12.9742	13.3459	12.7528	13.4546
5	8.80547	8.29922	8.05909	8.38339	7.99871	8.53654	8.06916	8.62797	8.21893	8.27443	8.04523	8.16392	7.86015	7.77081	8.53694	7.92196	8.12574	7.94116	8.08679
6	5.45812	5.07765	5.11273	5.17073	5.07548	5.34273	5.15074	5.39004	5.11695	5.28144	5.23378	5.09251	5.10554	5.28879	5.35475	5.14716	5.28323	5.18482	5.24725
7	3.19843	2.67614	2.79645	2.74592	2.60859	3.01947	2.77028	3.22746	2.8916	2.95944	2.88028	2.8187	2.77994	2.78614	3.15397	2.82026	2.92992	2.78217	2.93212
8	1.07623	0.83227	0.80306	0.83891	0.7604	1.00101	0.86647	1.11379	0.89254	0.97916	0.92322	0.83054	0.79856	0.82939	0.98517	0.81184	0.87692	0.8231	0.88316
9	0.58037	0.43979	0.45906	0.50498	0.42544	0.49227	0.43767	0.5581	0.48712	0.47033	0.41908	0.49086	0.43761	0.38724	0.53889	0.41346	0.42015	0.43679	0.45434
10	0.51261	0.3109	0.39508	0.4148	0.3244	0.48836	0.36763	0.4376	0.35226	0.42121	0.38582	0.31594	0.31313	0.30664	0.38442	0.29818	0.37333	0.29156	0.37701
SE	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
0	0.75842	0.81497	0.80877	0.8727	0.79567	0.63078	0.7116	0.56442	0.7454	0.60974	0.59607	0.77966	0.72323	0.63461	0.66433	0.66389	0.63274	0.71344	0.6699
1	2.1462	2.61271	2.20015	2.60816	2.40053	2.08257	2.21697	1.86924	2.08585	1.89271	1.84473	2.07257	1.89487	1.77464	1.90362	1.84352	1.76948	1.89537	1.82231
2	2.54782	2.78767	2.66208	2.8117	2.74458	2.5715	2.63862	2.47029	2.59257	2.49407	2.46945	2.62302	2.52435	2.43445	2.50458	2.4863	2.43516	2.5152	2.47901
3	2.44562	2.50192	2.45814	2.52769	2.46474	2.46238	2.44532	2.44907	2.42741	2.39161	2.35194	2.43377	2.34914	2.29823	2.44336	2.33284	2.32112	2.34409	2.36472
4	2.19396	2.30676	2.09402	2.32289	2.16066	2.17979	2.12867	2.11978	2.05482	2.02438	1.94805	2.02032	1.87544	1.82182	2.06416	1.87204	1.87945	1.88113	1.9132
5	1.85062	1.94591	1.76277	1.98724	1.82867	1.8065	1.76724	1.73785	1.71973	1.66921	1.59644	1.70957	1.5793	1.51696	1.72515	1.5626	1.56627	1.58576	1.59101
6	1.46008	1.50984	1.382	1.5427	1.43512	1.42337	1.39395	1.37455	1.34903	1.33093	1.28425	1.34149	1.2689	1.25189	1.36485	1.25908	1.26752	1.27916	1.28081
7	1.00587	0.86883	0.91983	0.91403	0.86774	0.94778	0.88865	0.98631	0.92581	0.93072	0.90003	0.92733	0.90727	0.89222	0.99014	0.89934	0.9244	0.90422	0.93308
8	0.48891	0.38093	0.37723	0.38532	0.34851	0.4524	0.39499	0.48938	0.40197	0.44234	0.41642	0.37502	0.36898	0.38288	0.44297	0.3715	0.40571	0.37097	0.39971
9	0.39783	0.32462	0.35237	0.37846	0.32795	0.34927	0.32014	0.37044	0.34987	0.32818	0.29561	0.36641	0.32601	0.2863	0.38002	0.30229	0.30512	0.32328	0.33375
10	0.24154	0.15886	0.18696	0.19499	0.15108	0.22382	0.17029	0.21128	0.169	0.19278	0.17315	0.1528	0.14958	0.14298	0.19179	0.14347	0.17439	0.13658	0.17444

Table 7: Categorically modeled percentage caught at age estimations for headboat gray triggerfish Gulfwide.

%	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	1.83727	3.43434	1.13636	1.86757	1.17096	0.80775	1.09689	0.3876	0.8293	0.30888	0.36799	0	0	0	0	0	0.09814	0	0.16611
1	30.7087	36.3636	37.1212	41.2564	39.9297	29.1599	32.2974	26.7442	33.7249	27.3359	27.4149	38.859	35.8015	32	32.9851	34.3797	29.8332	36.5306	33.2226
2	33.0709	32.9293	34.2803	29.966	33.7237	35.2181	36.1365	34.4961	34.6925	39.4595	40.1104	33.1539	37.917	40.16	32.9851	37.6682	40.0393	36.5306	34.3854
3	13.9108	12.9293	14.7727	12.6486	13.1733	18.1745	16.4534	16.376	14.3055	16.7568	17.5713	12.5942	13.1814	15.2	14.1791	14.0508	16.2905	12.6531	17.1096
4	7.61155	5.45455	3.97727	4.49915	4.56674	5.97738	5.60634	9.78682	6.08155	6.17761	6.53174	6.78149	5.28885	6.08	7.16418	5.23169	4.90677	7.34694	6.31229
5	3.67454	2.82828	2.46212	2.29202	2.75176	3.71567	3.41255	5.13566	4.35384	3.93822	3.86385	2.79871	3.01058	3.2	4.62687	4.4843	3.14033	2.95918	3.48837
6	2.3622	1.41414	2.27273	1.95246	1.3466	2.01939	1.5844	2.81008	2.21147	2.23938	1.28795	1.61464	1.70871	0.64	2.53731	1.34529	1.47203	0.91837	1.49502
7	1.5748	1.41414	1.32576	1.10357	0.64403	1.21163	1.03595	1.45349	1.10574	1.23552	0.91996	1.18407	0.7323	0.96	1.9403	0.89686	1.27576	0.61224	1.49502
8	0.7874	1.0101	0.75758	1.10357	0.70258	1.05008	0.85314	0.87209	0.69109	0.7722	0.55198	0.96878	0.9764	0.16	0.89552	0.59791	0.78508	0.61224	0.66445
9	1.04987	1.0101	0.18939	0.59423	0.70258	0.56543	0.42657	0.96899	0.69109	0.69498	0.73597	1.07643	0.32547	0.32	1.19403	0.59791	0.88322	0.61224	0.83056
10	3.41207	1.21212	1.70455	2.71647	1.28806	2.10016	1.09689	0.96899	1.31306	1.08108	0.64397	0.96878	1.05777	1.28	1.49254	0.74738	1.27576	1.22449	0.83056

Table 8: Von Bertalanffy modeled percentage caught at age estimations for headboat gray triggerfish Gulfwide.

%	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	1.57064	2.75174	2.95423	3.63557	3.09943	2.37477	2.57571	2.55267	3.47523	2.6799	2.37956	3.00961	2.90502	2.34917	2.35775	2.50002	2.26821	2.64363	2.51044
1	11.2637	17.4375	15.7751	18.6898	17.9419	15.0944	16.1	15.4984	17.5362	15.6082	14.9612	16.1583	15.7533	14.5505	13.9582	14.807	13.8819	15.0452	14.2104
2	27.1379	29.813	31.3066	29.2415	31.7829	30.1514	30.9149	31.2107	31.8945	32.2515	32.1271	32.5132	33.9659	33.8234	30.5707	33.2098	32.9991	33.5427	32.3498
3	25.7377	22.5638	23.3231	20.8841	22.0177	24.2619	23.5194	23.877	22.2274	23.6707	24.3966	22.9747	23.5058	24.6244	24.6664	24.2762	24.9089	24.078	24.5448
4	16.6065	13.4051	13.3001	12.8715	12.1638	14.0814	13.4809	13.3934	12.1566	12.7736	13.118	12.4395	11.7097	12.2352	14.2763	12.5841	12.9723	12.2761	13.2189
5	8.72359	7.4282	6.84599	7.64415	6.82454	7.26925	6.97389	6.98077	6.69304	6.75982	6.71166	6.80642	6.26342	6.27087	7.32467	`	6.63101	6.40522	6.78037
6	4.40822	3.86603	3.71462	3.98486	3.68594	3.78737	3.69548	3.67208	3.53226	3.5711	3.60086	3.52082	3.4892	3.60401	3.78591	3.5802	3.5869	3.5048	3.65483
7	2.50457	1.64141	1.72861	1.78043	1.54325	1.76816	1.67823	1.69113	1.54143	1.6203	1.66898	1.60531	1.52361	1.6137	1.88384	1.60434	1.72657	1.59198	1.71144
8	0.90684	0.56644	0.50617	0.52008	0.43298	0.58547	0.50977	0.54199	0.42078	0.51456	0.49218	0.43243	0.41504	0.47428	0.55328	0.4716	0.50461	0.43747	0.49454
9	0.57107	0.38267	0.3547	0.46818	0.35648	0.38037	0.36376	0.38931	0.37684	0.3726	0.35218	0.39517	0.34562	0.31648	0.41456	0.32039	0.3364	0.34178	0.35816
10	0.56892	0.14402	0.19085	0.27996	0.15116	0.24532	0.188	0.19256	0.14576	0.17786	0.19161	0.14474	0.12354	0.13808	0.20836	0.12241	0.18415	0.13318	0.16635
SE	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
0	0.50785	0.82606	0.886	1.04215	0.92028	0.72859	0.78285	0.76633	1.019	0.81918	0.72885	0.90058	0.87385	0.72347	0.71738	0.75605	0.70404	0.80108	0.759
1	1.77874	2.71901	2.36494	2.9674	2.69536	2.32812	2.46229	2.31595	2.60919	2.2783	2.16296	2.30192	2.14079	1.95781	2.04767	2.01584	1.88937	2.05753	1.99447
2	2.44593	2.9736	2.8485	3.10178	3.00111	2.81116	2.88615	2.81344	2.97387	2.81169	2.74643	2.854	2.76122	2.61704	2.6874	2.677	2.5973	2.69884	2.67894
3	2.62084	2.67901	2.59234	2.70753	2.6132	2.62389	2.62859	2.59445	2.58303	2.54415	2.53581	2.5543	2.463	2.42798	2.59041	2.47074	2.45007	2.46106	2.50533
4	2.3904	2.45865	2.20127	2.5294	2.28872	2.31008	2.30629	2.21801	2.1865	2.11986	2.09299	2.08664	1.90314	1.87224	2.16734	1.93361	1.91701	1.91562	1.99452
5	1.87773	1.98602	1.74111	2.10436	1.86177	1.8143	1.82486	1.75715	1.77137	1.68334	1.63873	1.68149	1.51747	1.45882	1.69967	1.51422	1.48526	1.50779	1.55837
6	1.38707	1.46319	1.28548	1.54367	1.37806	1.33443	1.34253	1.29342	1.29591	1.24082	1.21585	1.22506	1.14067	1.11677	1.24161	1.13655	1.11217	1.12587	1.15894
7	0.99878	0.7532	0.78188	0.8058	0.72476	0.78301	0.75835	0.76626	0.73568	0.75013	0.75093	0.76013	0.73087	0.73294	0.82588	0.73658	0.76508	0.73573	0.77377
8	0.54441	0.33889	0.31471	0.31484	0.26813	0.3559	0.3167	0.33084	0.26414	0.31409	0.30856	0.27326	0.26469	0.30082	0.34809	0.29291	0.32	0.27874	0.3095
9	0.40416	0.31774	0.31137	0.38394	0.30849	0.30574	0.30291	0.31508	0.32706	0.30688	0.2872	0.33726	0.29958	0.26282	0.33607	0.27615	0.2745	0.28798	0.30025
10	0.31156	0.11624	0.1418	0.16355	0.10254	0.15554	0.13224	0.12917	0.10038	0.11542	0.12478	0.10061	0.09127	0.10137	0.15005	0.09657	0.12469	0.09374	0.12081

Table 9: Categorically modeled percentage caught at age estimations for headboat gray triggerfish in the Eastern Gulf of Mexico.

%	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0.76726	0.30066	0.2584	0.20819	0.11547	0.30242	0.19048	0	0.1006	0.16639	0	0	0.12579	0	0	0.12788
1	7.56757	15.5172	16.9524	15.7715	19.1221	11.6279	12.6301	15.7044	17.5403	14.8571	12.4706	18.9135	19.1348	15.3226	12.8871	18.4906	13.6778	18.5442	13.4271
2	20.2703	28.3251	29.7143	23.1884	31.4492	28.6176	28.1055	27.5982	29.3347	32.0952	29.1765	28.7726	33.2779	33.6022	23.6763	29.0566	32.5228	33.5355	26.4706
3	19.7297	15.5172	20.9524	19.0111	19.0018	22.8036	24.3581	23.4411	20.6653	20.0952	26.8235	19.1147	21.381	22.1774	23.4765	20.2516	22.5684	19.4974	25.8312
4	12.973	13.0542	8	11.509	11.365	13.7597	13.2547	12.5866	11.4919	14.8571	15.0588	13.8833	11.0649	13.5753	15.8841	14.0881	11.5502	13.8648	15.2174
5	11.6216	10.0985	11.4286	7.16113	5.35177	8.20413	8.32755	8.42956	8.26613	6.38095	6	6.03622	5.82363	5.64516	7.99201	9.18239	6.15502	5.37262	7.289
6	8.91892	3.94089	5.71429	6.56436	3.9086	3.87597	4.58015	4.15704	5.14113	3.2381	4	5.23139	3.24459	2.68817	6.99301	2.89308	5.39514	4.07279	4.4757
7	4.59459	7.14286	1.90476	4.00682	3.60794	3.74677	3.46981	3.69515	2.82258	3.42857	2.58824	5.03018	2.66223	1.6129	4.99501	2.7673	3.79939	1.90641	4.09207
8	5.40541	3.20197	0.7619	4.60358	1.50331	2.58398	1.38793	0.46189	1.71371	1.52381	1.41176	1.20724	2.16306	2.01613	0.3996	1.50943	1.29179	1.12652	0.63939
9	3.24324	2.21675	3.80952	2.8133	2.88635	2.19638	2.01249	1.03926	1.31048	0.85714	0.47059	0.80483	0	2.01613	2.8971	1.63522	1.59574	1.38648	1.91816
10	5.67568	0.98522	0.7619	4.60358	1.50331	2.32558	1.66551	2.77136	1.41129	2.47619	2	0.90543	1.08153	1.34409	0.7992	0	1.44377	0.69324	0.51151

Table 10: Von Bertalanffy modeled percentage caught at age estimations for headboat gray triggerfish in the Eastern Gulf of Mexico.

%	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	1.53845	1.45529	0	0	0.1688	0	0.44946	0	0	0	0.23513	0	0	0	0	0	0.50323	0	0
1	2.97581	2.38253	1.65516	0.67729	0.80299	0.36458	1.27006	0.24752	0.51447	0.28626	0.50722	0.5988	0.26667	0.35714	0	0.29703	0.71172	0.39062	0.125
2	10.3817	7.64254	9.49224	5.68265	5.18149	3.40375	6.25631	2.89786	4.83471	3.2895	3.76369	4.91353	3.78678	3.84272	3.13592	3.25458	2.46638	4.7338	3.19601
3	10.7005	8.42725	9.28544	7.10506	6.67466	5.24894	7.22447	5.15162	6.71469	5.14709	5.56685	6.73163	6.00179	5.58211	5.74834	4.6915	3.78579	7.08001	5.50336
4	17.2069	16.8813	18.1757	17.1805	16.9333	16.6022	16.9635	14.5089	15.6504	15.8445	16.4486	15.6036	15.4745	16.824	13.4676	16.698	16.8601	15.4484	15.961
5	19.2138	21.523	21.6353	23.842	22.5664	23.4561	23.1107	22.489	22.9397	24.4393	24.9463	20.7306	24.0943	24.4988	25.4661	25.9477	24.5904	20.7935	25.1665
6	19.7957	20.6303	19.3716	23.985	23.365	23.3387	22.6987	23.8026	22.9076	24.2649	24.7784	23.5081	24.0181	25.5857	24.3724	26.5943	26.2551	24.1293	24.2788
7	12.6744	14.0168	13.319	14.3015	14.9575	16.0815	14.4526	18.6301	16.9886	16.7739	15.4903	17.0814	17.0449	14.8204	19.5507	14.9132	14.9014	17.4878	16.5399
8	3.32873	3.75727	3.61672	4.04947	5.162	6.13765	4.24706	7.03225	5.34104	5.49426	4.57997	6.56386	5.27323	4.77125	5.65061	4.3908	5.37355	6.1228	5.35128
9	0.87606	1.07054	0.94515	1.12182	1.4045	1.6717	1.1706	2.38821	1.71162	1.76378	1.39006	1.60295	1.82405	1.46537	1.81604	1.19777	1.52321	1.41165	1.29399
10	1.30792	2.21312	2.50379	2.05476	2.78339	3.69495	2.1565	2.85197	2.39714	2.6965	2.29352	2.66552	2.21571	2.25252	0.79235	2.01508	3.02921	2.40202	2.58415
SE	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
0	0.27934	0.26424	0	0	0.03065	0	0.08161	0	0	0	0.04269	0	0	0	0	0	0.09137	0	0
1	1.69404	1.2333	1.41301	0.5782	0.59264	0.31124	0.83697	0.21131	0.4392	0.24438	0.30365	0.51119	0.22765	0.30489	0	0.25357	0.33073	0.33347	0.10671
2	3.64188	2.87808	3.22235	2.43181	2.12506	1.55836	2.47711	1.42256	2.17226	1.64588	1.89429	2.02937	1.9432	1.82229	2.10134	1.65363	1.14417	2.20129	1.87938
3	4.63813	3.94885	4.23837	3.5396	3.42908	3.10661	3.58912	3.19903	3.57604	3.03998	3.0745	3.54553	3.35634	3.02737	3.48384	2.74015	2.35082	3.57963	3.27184
4	6.5319	6.22951	6.54631	6.31179	6.188	5.89355	6.23592	5.575	5.95692	5.8532	6.05297	5.88513	5.90085	6.1717	5.72919	5.98705	5.89428	5.99552	5.90211
5	5.72053	6.08306	5.91089	6.64937	6.49256	6.67847	6.39558	6.75835	6.64165	6.83533	6.85562	6.31151	6.89902	6.85258	7.06563	6.92631	6.71231	6.40682	6.94779
6	5.96253	6.02038	5.87477	6.65786	6.53264	6.76552	6.39762	6.86629	6.6862	6.78467	6.77553	6.87279	6.9589	6.82988	7.13196	6.95018	6.66618	6.77537	7.04675
7	5.10066	5.40249	5.19777	5.58195	5.69763	6.03686	5.51188	6.58594	6.248	6.14922	5.85099	6.35667	6.33052	5.68805	6.65223	5.6911	5.64047	6.4426	6.11379
8	1.78688	2.10749	2.00749	2.20568	2.7095	3.21251	2.25917	3.6205	2.8647	2.95379	2.4985	3.4206	2.86214	2.56201	2.50331	2.44189	3.02125	3.21594	2.6096
9	0.69636	0.86481	0.81029	0.9186	1.1639	1.46208	0.95811	1.84405	1.31887	1.37972	1.08879	1.36743	1.36754	1.13138	1.34046	1.00462	1.22761	1.16266	1.19907
10	0.66529	1.14093	1.15784	0.97256	1.33689	1.66957	1.02736	1.50906	1.29049	1.35847	1.1331	1.35367	1.16279	1.07549	0.51927	0.9179	1.4617	1.42409	1.11501

Table 11: Categorically modeled percentage caught at age estimations for headboat gray triggerfish in the Western Gulf of Mexico.

%	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0	0	0	0.16077	0	0	0	0	0	0	0	0	0	0	0	0
1	7.02703	8.41584	2	3.46154	2.45399	1.03093	3.53698	0	0.15949	0.56604	0.86957	0.59524	0.33113	0	0	0	1.8018	0.76336	0
2	23.7838	17.8218	20.6667	12.3077	11.0429	7.73196	12.8617	5.67901	9.72887	6.22642	6.95652	10.119	7.94702	7.14286	3.84615	3.92157	6.30631	11.4504	8.75
3	26.4865	25.7426	26.6667	24.2308	20.2454	17.5258	22.9904	17.037	23.2855	20.1887	23.4783	20.2381	25.8278	21.4286	30.7692	26.4706	17.1171	19.8473	21.25
4	16.2162	17.8218	18.6667	22.6923	20.2454	18.0412	24.9196	18.5185	22.6475	23.3962	26.3043	18.4524	22.8477	24.1071	26.9231	26.4706	20.7207	13.7405	26.25
5	8.64865	11.3861	11.3333	17.6923	15.6442	20.1031	11.5756	13.8272	12.1212	15.283	15.6522	13.6905	12.9139	20.5357	7.69231	16.6667	23.4234	18.3206	15
6	5.94595	7.42574	11.3333	6.92308	13.4969	15.9794	9.16399	11.1111	8.13397	11.1321	9.56522	9.52381	6.95364	10.7143	0	11.7647	15.3153	9.16031	10
7	3.24324	3.9604	2.66667	3.46154	4.60123	7.21649	4.34084	8.39506	4.6252	6.03774	4.78261	10.119	5.29801	5.35714	0	6.86275	1.8018	9.92366	6.25
8	2.16216	0	0.66667	1.92308	2.76074	2.57732	2.73312	6.91358	4.30622	3.20755	2.6087	5.35714	2.98013	1.78571	7.69231	0.98039	0.9009	3.05344	5
9	2.16216	0.49505	0	1.15385	2.76074	1.54639	1.60772	2.96296	3.34928	2.26415	1.95652	1.19048	2.64901	1.78571	11.5385	0.98039	1.8018	0.76336	1.25
10	4.32432	6.93069	6	6.15385	6.74847	8.24742	6.10932	15.5556	11.6427	11.6981	7.82609	10.7143	12.2517	7.14286	11.5385	5.88235	10.8108	12.9771	6.25

Table 12: Von Bertalanffy modeled percentage caught at age estimations for headboat gray triggerfish in the Western Gulf of Mexico.

%	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	1.6059	1.8211	1.2012	1.2618	2.4249	0.5345	1.1098	0.8644	1.6227	1.3922	1.0836	1.413	1.3672	1.6736	1.7934	1.3198	1.1129	1.4634	1.7984	1.6443	2.0149	1.5108	1.6292	1.6183
1	11.632	13.608	10.355	8.2133	9.2625	6.1121	8.2228	8.0119	10.017	10.999	8.951	10.434	10.108	10.947	12.895	11.492	9.3199	11.172	12.212	10.977	12.473	11.125	11.227	11.297
2	26.197	25.318	25.318	19.891	20.542	18.987	21.034	22.208	22.99	28.261	22.253	25.101	25.518	24.616	29.409	28.016	24.394	28.442	29.319	26.586	28.983	28.196	27.928	28.527
3	24.778	23.965	24.783	22.56	20.891	24.549	22.898	24.805	24.338	24.502	24.548	23.996	24.701	24.071	23.578	24.709	24.455	24.59	24.102	24.093	23.466	24.401	24.336	24.571
4	15.665	15.089	15.955	19.103	17.534	19.011	17.964	18.148	17.321	14.813	18.243	16.424	16.08	16.473	13.759	14.852	16.981	14.675	13.954	15.656	13.993	14.578	14.977	14.601
5	8.4695	8.8571	8.8209	13.127	11.571	11.506	12.076	10.869	10.433	8.7838	10.961	9.7813	9.5672	9.6363	8.2786	8.8489	10.237	8.6002	8.2503	9.3637	8.5842	8.8305	8.7942	8.5024
6	5.4457	5.5103	6.1966	6.7456	7.1617	8.2121	7.4357	6.6933	6.1819	5.8154	6.3218	6.1308	6.0485	5.7808	5.4542	5.4508	6.3638	5.6101	5.3548	5.6889	5.368	5.7298	5.5809	5.5355
7	3.3507	3.4764	3.6664	5.0972	5.8445	5.3382	4.9414	4.7017	3.9436	3.2418	4.3408	3.848	3.8019	3.7653	2.9841	3.1243	4.2015	3.3524	3.0884	3.5789	3.158	3.4112	3.3764	3.2723
8	1.2735	1.2681	1.5638	2.1447	1.9539	2.5735	2.117	1.8535	1.6053	1.2242	1.7466	1.4418	1.4499	1.4696	1.0063	1.1604	1.5195	1.114	0.9983	1.2696	1.0272	1.1679	1.1357	1.1025
9	0.7234	0.6753	0.8831	0.9751	1.3093	1.3432	1.0972	0.9658	0.7574	0.5163	0.7926	0.6918	0.6868	0.7508	0.4717	0.4885	0.7024	0.5166	0.4917	0.6256	0.5184	0.5447	0.544	0.5136
10	0.8593	0.4127	1.2569	0.8817	1.5061	1.8344	1.1058	0.879	0.7902	0.4516	0.759	0.739	0.6715	0.8167	0.372	0.5394	0.7131	0.4644	0.4309	0.5178	0.4139	0.5049	0.4737	0.46
SE	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
0	0.5133	0.5605	0.4079	0.3999	0.6165	0.1887	0.3562	0.2984	0.4866	0.4761	0.3384	0.4502	0.4395	0.511	0.5725	0.4478	0.3663	0.4781	0.5736	0.516	0.6212	0.4895	0.5197	0.5167
1	1.8261	2.102	1.6621	1.3457	1.5583	1.1658	1.3632	1.3188	1.6496	1.605	1.5148	1.6394	1.5457	1.7428	1.8355	1.6848	1.446	1.5814	1.716	1.6326	1.7433	1.57	1.6203	1.6105
2	2.4098	2.4871	2.2475	2.1602	1.9814	1.8558	2.0745	2.0917	2.324	2.3211	2.1992	2.2959	2.2612	2.3571	2.4487	2.3611	2.1596	2.3041	2.393	2.3506	2.4276	2.2873	2.3422	2.3285
3	2.4301	2.5273	2.4076	2.5981	2.3979	2.5597	2.5912	2.5478	2.5581	2.3789	2.5102	2.4695	2.4506	2.4708	2.3693	2.3505	2.4572	2.3566	2.3455	2.44	2.3793	2.3563	2.3897	2.3525
4	2.1871	2.3179	2.2785	2.6332	2.4743	2.6998	2.5975	2.4093	2.3861	2.0309	2.424	2.2759	2.1768	2.2956	1.9983	2.038	2.2626	1.9677	1.9322	2.1231	1.9757	1.979	2.0147	1.9501
5	1.7438	1.9348	1.8535	2.334	2.2291	2.3353	2.2948	2.0283	1.9743	1.6846	2.0057	1.8918	1.8164	1.8909	1.6653	1.662	1.8846	1.6215	1.595	1.7603	1.6611	1.6526	1.6574	1.6003
6	1.4118	1.5252	1.5928	1.769	1.8153	2.0694	1.8827	1.6447	1.5542	1.3851	1.574	1.5251	1.4723	1.4951	1.3524	1.3307	1.5266	1.3267	1.2922	1.3941	1.3229	1.3535	1.3342	1.3036
7	1.0392	1.0529	1.1818	1.5295	1.6515	1.6897	1.5215	1.3814	1.1916	1.0152	1.2495	1.1606	1.1484	1.143	0.9418	0.9558	1.2292	1.0168	0.9613	1.0821	0.9885	1.0405	1.0261	0.9962
8	0.5726	0.5772	0.745	0.9458	0.935	1.2031	0.9783	0.843	0.697	0.563	0.7687	0.6576	0.6554	0.6542	0.4569	0.518	0.6967	0.514	0.4575	0.5648	0.4672	0.5335	0.5133	0.4976
9	0.4497	0.4154	0.5471	0.6119	0.7569	0.8238	0.6986	0.5905	0.5014	0.349	0.4809	0.45	0.4443	0.4697	0.3249	0.3177	0.4476	0.3435	0.3336	0.4123	0.3608	0.3628	0.3648	0.3423
10	0.3312	0.2337	0.5075	0.5196	0.7196	0.8472	0.5934	0.4694	0.3781	0.2385	0.3962	0.3622	0.3419	0.3687	0.1824	0.2334	0.3699	0.2359	0.1994	0.2668	0.2128	0.2489	0.2349	0.2205

Table 13: Categorically modeled percentage caught at age estimations for MRFSS gray triggerfish Gulfwide.

%	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	2.0408	0	0	3.5714	0	0.3185	0.3049	0.5025	0	1.5762	0.4699	0.2762	0.597	0	0	0.2262	0	0	0.1113	0.0457	0	0	0.0835
1	22.034	19.388	15.068	15.094	14.286	7.3394	12.42	11.585	20.603	18.468	10.333	18.951	17.403	20.299	29.333	19.883	16.29	23.367	27.282	24.263	31.764	23.014	25.364	24.708
2	35.593	43.878	39.726	24.528	28.571	20.183	29.618	30.488	24.121	45.495	31.173	33.829	34.807	31.343	41	43.86	33.258	39.28	39.968	33.055	35.055	39.438	35.726	38.397
3	16.949	7.1429	19.178	11.321	10.714	24.771	17.197	17.988	22.613	17.117	20.14	20.125	21.271	17.91	13	16.959	19.005	17.672	15.18	17.418	14.442	16.812	17.539	16.945
4	10.169	12.245	8.2192	11.321	10.714	12.844	7.3248	12.805	12.06	7.2072	10.333	7.5176	9.3923	10.149	7	7.6023	9.276	6.7002	7.2718	8.7924	5.9415	8.1395	7.8251	8.5559
5	8.4746	5.102	6.8493	5.6604	3.5714	11.009	7.9618	7.0122	4.0201	5.4054	7.3555	5.0117	5.2486	6.5672	3	2.3392	4.2986	4.5226	3.9278	5.1753	4.7989	3.7306	5.1808	4.2571
6	1.6949	5.102	2.7397	9.434	7.1429	3.6697	4.1401	5.1829	5.5276	0.4505	4.9037	3.054	2.4862	4.4776	3	4.0936	5.2036	3.4338	2.6539	3.172	3.0165	2.4225	2.3745	2.2538
7	1.6949	1.0204	1.3699	5.6604	0	2.7523	2.5478	3.0488	1.5075	0.4505	2.9772	3.1323	2.2099	2.3881	0.6667	0.5848	1.81	1.1725	1.0085	2.1703	1.1426	1.405	1.5111	1.5025
8	1.6949	1.0204	1.3699	3.7736	10.714	1.8349	3.1847	2.7439	0.5025	1.8018	4.3783	1.9577	1.3812	2.0896	0.6667	0.5848	4.2986	1.34	0.5839	2.0033	1.1883	1.0659	1.8349	0.8347
9	0	0	0	5.6604	0	0	2.5478	1.8293	0.5025	0.4505	2.627	1.0963	1.3812	1.194	0.3333	2.924	1.1312	0.4188	0.5839	1.3912	0.8227	0.969	0.5936	0.4174
10	1.6949	3.0612	5.4795	7.5472	10.714	15.596	12.739	7.0122	8.0402	3.1532	4.2032	4.8551	4.1436	2.9851	2	1.1696	5.2036	2.0938	1.5393	2.4485	1.7824	3.0039	2.0507	2.0451

Table 14: Von Bertalanffy modeled percentage caught at age estimations for MRFSS gray triggerfish Gulfwide.

%	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	2.0001	1.7627	1.3357	2.8853	2.4509	0.7028	1.1998	0.8924	1.7317	1.5165	1.1137	1.4447	1.3673	1.7862	1.9885	1.4606	1.1958	1.5415	1.9334	1.7589	2.1425	1.6424	1.7719	1.7365
1	13.368	13.723	11.263	15.3	9.7559	7.3639	8.7779	8.5098	10.563	11.704	9.2914	10.925	10.569	11.328	13.958	12.593	10.082	12	13.034	11.725	13.221	12.072	12.075	12.149
2	29.113	26.912	28.323	33.359	21.854	21.216	22.652	24.103	24.968	30.081	23.347	27.22	27.878	26.28	31.74	31.061	26.572	30.926	31.844	28.987	31.301	30.763	30.332	30.987
3	25.863	26.315	27.121	23.233	22.461	25.525	24.694	27.111	26.33	26.576	26.4	26.036	26.767	26.134	25.19	26.977	26.577	26.669	25.953	26.074	25.189	26.325	26.167	26.533
4	15.135	16.095	16.12	11.174	18.896	18.411	18.583	19.067	17.859	15.127	19.574	16.945	16.513	17.286	13.544	14.659	17.463	14.779	13.994	15.901	14.116	14.583	15.127	14.688
5	6.9593	7.5927	7.209	6.4327	11.023	10.824	11.206	9.7402	9.4606	7.4106	10.362	8.5976	8.2958	8.5448	6.8377	6.7777	8.9659	6.9959	6.7029	7.9988	7.1853	7.269	7.38	6.9958
6	3.7268	3.9118	4.3222	3.858	5.2011	7.3114	6.1324	5.0329	4.6945	4.0832	4.7668	4.4377	4.3876	4.2027	3.7836	3.5272	4.6128	3.8555	3.5862	3.9789	3.7712	3.943	3.8502	3.7457
7	1.8808	2.0385	2.1433	1.7185	4.5328	3.8729	3.3893	2.99	2.4045	1.9868	2.8075	2.4461	2.3676	2.2993	1.7684	1.6517	2.5965	1.9504	1.7642	2.1064	1.8432	2.0074	1.9834	1.9058
8	0.6601	0.839	0.949	1.0464	1.1747	1.9711	1.5692	1.1981	0.9794	0.8393	1.1822	0.9208	0.9281	0.9441	0.6068	0.6582	0.9424	0.6757	0.5897	0.7444	0.6359	0.7023	0.6691	0.6413
9	0.5792	0.5047	0.5571	0.2771	1.1706	1.2062	0.9277	0.7221	0.5672	0.4171	0.6168	0.5321	0.5243	0.5734	0.3673	0.3369	0.5213	0.3621	0.3577	0.4508	0.378	0.4087	0.3948	0.3718
10	0.7156	0.3051	0.6561	0.7168	1.4797	1.5953	0.8677	0.6325	0.4423	0.2593	0.5382	0.4943	0.4016	0.6207	0.2166	0.2982	0.4704	0.2442	0.2408	0.2744	0.2155	0.2857	0.2498	0.2461
SE	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
0	0.6266	0.576	0.4551	0.9023	0.708	0.2446	0.3915	0.3103	0.532	0.5149	0.3724	0.4732	0.4534	0.5605	0.6261	0.4977	0.4	0.5059	0.6177	0.5562	0.6629	0.5328	0.5644	0.5578
1	2.0953	2.2606	1.7835	2.0603	1.7437	1.303	1.4897	1.4271	1.7908	1.7464	1.6656	1.7623	1.6274	1.8801	2.0078	1.8679	1.5809	1.7048	1.8443	1.766	1.8684	1.707	1.7548	1.7429
2	2.644	2.683	2.4669	2.6788	2.1917	1.9391	2.232	2.2617	2.5177	2.4954	2.3833	2.4647	2.4252	2.5445	2.6335	2.555	2.3378	2.4665	2.5624	2.5295	2.5944	2.4599	2.5172	2.5003
3	2.5723	2.729	2.6065	2.3512	2.5959	2.7013	2.7762	2.7421	2.7352	2.5688	2.7384	2.6422	2.6277	2.6575	2.5236	2.5031	2.6374	2.5117	2.4905	2.5971	2.5234	2.5065	2.5465	2.5071
4	2.2926	2.5113	2.3263	1.9736	2.6685	2.836	2.764	2.5654	2.5291	2.1716	2.676	2.4112	2.295	2.4589	2.0886	2.0968	2.3863	2.0472	2.0046	2.2182	2.0577	2.0527	2.1074	2.0337
5	1.7285	1.9383	1.746	1.709	2.3016	2.444	2.3322	2.0201	1.9798	1.6624	2.0992	1.8747	1.7815	1.8966	1.6244	1.5437	1.854	1.5412	1.5157	1.7094	1.6021	1.5753	1.6041	1.5327
6	1.2987	1.4201	1.3799	1.3363	1.6572	2.1067	1.8201	1.5135	1.4509	1.2644	1.5053	1.3949	1.3388	1.3853	1.2285	1.1492	1.3799	1.1696	1.1296	1.2453	1.1864	1.1918	1.1863	1.1453
7	0.8562	0.8687	0.945	0.906	1.5398	1.5908	1.3497	1.1758	1.0011	0.8631	1.0934	0.99	0.9741	0.973	0.7787	0.7366	1.0276	0.826	0.7774	0.8868	0.8107	0.8474	0.8433	0.8125
8	0.4264	0.5079	0.5732	0.5472	0.7577	1.1222	0.8788	0.7071	0.5624	0.4941	0.6766	0.5492	0.5489	0.5533	0.37	0.4004	0.5692	0.4195	0.3678	0.4479	0.3843	0.4304	0.4113	0.3979
9	0.4052	0.3645	0.3968	0.2553	0.7364	0.8001	0.6506	0.5073	0.4243	0.3164	0.4332	0.3852	0.3823	0.4135	0.2868	0.2456	0.3795	0.2776	0.2792	0.3432	0.3066	0.3053	0.307	0.2838
10	0.3	0.2187	0.3502	0.3477	0.7548	0.819	0.5134	0.4058	0.2694	0.1955	0.3393	0.3001	0.2721	0.3206	0.1467	0.1541	0.3037	0.1821	0.1504	0.1944	0.1584	0.1889	0.177	0.1684

Table 15: Categorically modeled percentage caught at age estimations for MRFSS gray triggerfish in the Eastern Gulf of Mexico.

%	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0	0	0	0	0	0	0	0.0966	0	0	0	0	0	0.1161	0	0	0.0317	0	0	0	0
1	12.658	4.4872	8.4034	17.241	6.6667	3.4826	3.9334	3.5616	6.4677	7.8947	2.3188	6.0394	8.1967	6.6784	14.392	9.434	5.4588	10.331	12.409	9.0304	13.552	9.8998	10.131	10.614
2	18.987	27.564	21.008	41.379	10	11.443	13.616	15.753	13.682	32.749	17.101	22.363	21.162	17.575	30.521	32.075	20.441	27.428	31.092	22.972	26.407	28.639	26.503	28.414
3	20.253	11.538	21.008	6.8966	11.667	20.896	15.734	17.26	24.378	21.637	18.261	22.538	24.143	21.441	20.347	25.66	20.441	23.089	20.693	22.877	20.11	21.538	21.699	23.069
4	26.582	25.641	20.168	6.8966	11.667	15.423	14.523	18.082	18.905	13.45	14.589	13.042	14.754	16.872	14.392	11.698	15.447	14.308	14.211	14.734	14.045	14.761	15.654	15.115
5	5.0633	16.026	11.765	13.793	5	5.9701	10.893	15.616	12.438	7.0175	14.686	9.7155	11.177	15.29	8.933	10.943	8.0139	10.486	10.295	10.52	11.143	8.3677	9.6732	9.6419
6	10.127	6.4103	5.042	0	23.333	5.9701	7.8669	10	4.4776	3.2164	9.5652	9.0153	5.8122	7.3814	1.9851	1.5094	8.9431	6.25	4.5754	7.3511	5.3685	5.3035	6.0131	5.0639
7	0	0	1.6807	0	10	3.9801	6.0514	4.9315	2.2388	4.6784	12.56	5.8643	5.0671	6.5026	2.9777	6.7925	9.2915	2.7376	2.5303	5.8619	3.9756	3.683	4.6732	2.1739
8	0	0	3.3613	0	0	3.9801	7.7156	3.2877	9.4527	2.6316	3.5749	2.9322	2.3845	1.7575	1.2407	0	3.3682	1.188	0.8319	3.5171	2.3215	1.7384	1.6993	1.9182
9	0	2.5641	0	0	0	10.448	7.8669	4.6575	5.9701	2.3392	3.5749	3.8074	2.3845	1.5817	2.2333	0	5.5749	1.9628	1.4558	1.109	1.48	2.5633	2.6471	1.8414
10	6.3291	5.7692	7.563	13.793	21.667	18.408	11.8	6.8493	1.99	4.386	3.6715	4.6827	4.918	4.9209	2.9777	1.8868	2.9036	2.2211	1.9064	1.9962	1.5961	3.5062	1.3072	2.1483

Table 16: Von Bertalanffy modeled percentage caught at age estimations for MRFSS gray triggerfish in the Eastern Gulf of Mexico.

%	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0	0	0	0	0	0	0	0	0	2.4475	0	0	0	0	0	0	0	0	0	0	0
1	0	1.4286	0	0	0	0	0.303	0.5882	3.5714	0	0.3361	1.157	2.0979	0.2041	0.8333	0	0	2	0	0	0	0	0.1961	0
2	0.2439	11.19	0	0.0841	2.439	0.9691	2.1624	5.4479	16.327	2.8545	3.4762	6.9779	1.2037	3.6465	4.6013	3.671	2.1111	8.964	1.1513	2.3926	2.1293	0.1702	1.6861	2.2068
3	2.2147	11.768	1.8353	2.9519	2.439	4.0216	3.4795	7.4299	13.01	4.7903	5.3731	7.8036	2.7865	6.0216	4.7089	6.3189	4.8266	7.4256	3.0046	5.6559	4.4111	1.8662	2.9637	5.0519
4	13.869	17.376	9.2263	6.0428	14.634	12.255	15.009	16.661	22.058	17.388	15.63	16.92	16.189	15.052	15.852	15.466	14.67	16.776	11.872	11.874	13.742	13.287	16.471	14.808
5	24.007	26.381	11.062	13.702	39.024	22.093	25.069	23.178	14.737	27.534	22.368	20.347	24.029	22.946	23.34	23.378	23.164	21.087	20.571	21.762	20.689	20.626	26.4	22.611
6	24.922	17.986	15.179	18.586	21.951	16.412	21.421	20.82	15.91	29.289	23.427	19.806	21.618	22.139	28.013	21.989	26.244	18.424	18.214	18.409	21.836	23.54	24.103	25.014
7	19.64	13.871	14.137	35.501	19.512	22.316	19.859	15.87	7.0494	13.41	17.283	15.354	13.983	16.534	15.622	19.956	17.697	15.781	16.33	22.716	23.06	21.638	16.543	17.938
8	8.144	0	9.4247	13.375	0	8.5194	5.7367	5.2525	3.2569	2.8459	6.4168	5.6428	5.6224	4.9009	4.6829	4.6623	6.8246	4.5542	6.3049	6.6337	8.4128	9.5134	5.9843	7.3021
9	3.7098	0	1.8353	4.0671	0	5.4462	2.537	1.6951	0.6803	0.805	1.646	1.7261	1.1499	1.8361	1.3116	0.9176	2.1065	2.0136	2.1953	3.1528	1.2236	2.7071	1.8965	2.293
10	3.2506	0	3.9683	5.6901	0	4.8429	4.4232	3.0569	3.4014	1.083	3.204	3.4393	4.3291	2.6388	1.0352	3.6418	2.3566	2.9745	2.9661	4.0719	4.4974	4.3263	3.7572	2.7765
SE	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0	0	0	0	0	0	0	0	0	0.4444	0	0	0	0	0	0	0	0	0	0	0
1	0	1.2196	0	0	0	0	0.2587	0.5022	3.0489	0	0.287	0.9878	0.4444	0.1742	0.7114	0	0	1.7074	0	0	0	0	0.1674	0
2	0.2409	4.7779	0	0.0831	2.4091	0.5525	1.0011	2.4166	4.1398	1.8234	1.6307	2.399	0.8946	1.9126	1.6041	2.2386	1.3235	2.4438	0.8557	1.5	1.3838	0.1681	0.9312	1.3496
3	2.177	5.2517	1.8094	2.8825	2.4091	3.0679	2.5038	3.8747	5.0488	2.5413	3.0854	3.8341	2.105	3.2891	2.5076	3.1917	3.0826	3.6206	2.3439	3.6679	2.7743	1.8365	2.3259	3.158
4	5.422	6.8221	3.5369	2.7536	5.5199	5.1423	5.2728	6.3005	7.4373	6.2954	5.8004	6.1113	5.4853	5.7206	5.7836	5.7806	5.5929	5.985	4.6129	4.6441	5.2394	4.9133	5.7624	5.7488
5	7.056	6.535	3.9083	5.4522	7.6182	7.0767	6.763	6.6618	4.4815	7.2686	6.4696	6.0109	6.2204	6.652	6.3406	6.5036	6.9979	5.6485	5.7231	6.8218	5.9313	6.0421	6.8916	6.9206
6	6.5602	6.142	4.531	6.663	6.464	6.1394	6.0522	6.4371	4.4416	7.2594	6.5719	6.3344	5.9879	6.4473	6.6081	6.3429	7.3184	5.1261	5.4259	6.4213	6.2777	6.8575	6.5234	7.1088
7	6.524	5.3669	4.449	11.357	6.189	7.573	6.8979	5.8663	3.3502	5.5169	6.2169	5.973	5.1409	6.1292	5.736	7.2843	6.447	5.47	5.4057	7.8665	7.6542	7.5698	5.8617	6.4267
8	4.2015	0	3.8097	8.5529	0	4.9254	3.8318	2.5135	1.8231	1.8843	3.3006	3.2116	2.7231	2.7654	2.8999	3.2625	3.4298	2.8489	2.9101	4.2005	4.5047	5.4717	3.0972	3.5148
9	2.4901	0	1.8094	3.1815	0	3.3639	1.7882	1.3284	0.6721	0.5693	1.376	1.3623	1.135	1.3319	0.9653	0.6967	1.727	1.3986	1.657	2.3162	1.2063	1.9906	1.5252	1.8088
10	1.8498	0	1.6657	4.4237	0	2.867	2.6489	1.4259	1.4277	0.5479	1.654	1.652	1.8171	1.4734	0.7977	2.4959	1.1319	1.7652	1.456	2.5807	2.801	2.4804	1.7198	1.3521

Table 17: Categorically modeled percentage caught at age estimations for MRFSS gray triggerfish in the Western Gulf of Mexico.

%	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0.8621	1.0204	10.526	0	0	0	0	0	5.5556	0	0	0	0	0
2	0	33.333	0	0	0	0	3.4483	10	0	4	6.0345	16.327	5.2632	12.821	9.6774	0	0	25.926	0	0	0	0	0	2.2068
3	0	50	0	3.4483	0	3.2258	10.345	40	0	24	17.241	16.327	10.526	25.641	3.2258	20	23.077	3.7037	16.667	0	0	12.766	20.588	5.0519
4	20	16.667	0	3.4483	100	12.903	31.034	10	20	32	25	14.286	21.053	17.949	45.161	10	15.385	29.63	0	0	8.1081	19.149	14.706	14.808
5	20	0	0	0	0	12.903	6.8966	10	20	28	12.931	17.347	15.789	17.949	19.355	10	23.077	3.7037	16.667	13.333	21.622	27.66	20.588	22.611
6	20	0	33.333	13.793	0	19.355	20.69	10	60	0	10.345	13.265	21.053	7.6923	0	20	7.6923	11.111	22.222	13.333	18.919	21.277	11.765	25.014
7	0	0	0	13.793	0	3.2258	0	10	0	8	9.4828	6.1224	10.526	2.5641	6.4516	0	15.385	3.7037	16.667	0	16.216	6.383	8.8235	17.938
8	0	0	0	0	0	0	0	0	0	0	3.4483	2.0408	5.2632	5.1282	0	0	0	3.7037	0	0	10.811	0	8.8235	7.3021
9	20	0	33.333	6.8966	0	6.4516	0	0	0	0	4.3103	3.0612	0	0	3.2258	0	0	0	0	6.6667	0	4.2553	0	2.293
10	20	0	33.333	58.621	0	41.935	27.586	10	0	4	10.345	10.204	0	10.256	12.903	40	15.385	18.519	22.222	66.667	24.324	8.5106	14.706	2.7765

Table 18: Von Bertalanffy modeled percentage caught at age estimations for MRFSS gray triggerfish in the Western Gulf of Mexico.

%	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
0	4.3424	4.7863	19.476	10.187	6.4294	3.5226	8.0041	1.0455	3.4739	0	1.267	1.5275	0.4207	0	0.579	0.5917	2.524	2.3209	1.6483	0	0.641
1	6.5446	5.6581	19.673	12.245	9.093	6.4773	9.8337	3.4204	6.3647	2.1795	2.2624	2.1604	0.5168	1.519	1.8941	1.0566	2.9447	3.9721	1.9231	0.9412	2.0971
2	15.598	9.6369	14.858	17.152	17.324	18.423	15.503	14.826	17.168	13.802	8.5264	5.4776	3.3744	9.794	7.4722	5.8238	5.4824	11.268	5.1376	5.8799	9.4052
3	14.596	9.8574	12.264	13.937	13.886	16.284	13.338	14.052	14.612	13.765	9.8557	6.1803	5.4657	10.389	7.3537	7.6672	6.4251	10.594	7.1317	6.6999	9.9188
4	17.472	16.596	13.647	15.808	17.371	18.811	17.422	19.337	18.497	17.939	16.724	16.639	17.009	18.069	15.707	17.013	16.273	18.381	17.011	15.787	16.277
5	13.314	18.599	7.7336	10.534	12.98	12.751	13.413	18.362	14.148	19.325	20.731	22.49	25.248	20.323	20.808	23.747	22.628	19.576	22.141	23.61	20.159
6	13.391	18.463	7.6281	10.846	11.939	13.232	14.468	16.753	13.773	17.763	20.507	23.259	25.035	20.995	22.676	24.439	21.414	19.461	22.177	21.969	19.965
7	10.137	11.281	4.1074	7.449	8.5403	8.2748	6.7057	9.6427	8.7461	12.479	13.558	14.052	14.698	12.787	15.484	13.79	14.389	10.283	13.875	16.333	14.526
8	2.4229	2.8344	0.309	1.5878	1.4091	1.3134	0.8824	1.2812	1.8636	1.7446	3.534	4.8671	4.6058	3.3877	5.1034	3.6094	4.0952	2.2845	4.8956	4.6483	3.924
9	0.7536	0.8362	0.0507	0.2534	0.359	0.1989	0.1066	0.2384	0.5152	0.5252	1.4669	1.0895	1.0478	0.8131	1.6175	0.7745	1.1958	0.487	1.0988	2.0417	1.642
10	1.4301	1.4516	0.2533	0	0.669	0.7121	0.3218	1.0402	0.8382	0.4778	1.5674	2.2569	2.5791	1.9237	1.3046	1.4868	2.6285	1.3717	2.9599	2.0899	1.4444
SE	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
0	0.7884	0.869	3.5363	1.8497	1.1674	0.6396	1.4533	0.1898	0.6308	0	0.23	0.2774	0.0764	0	0.1051	0.1074	0.4583	0.4214	0.2993	0	0.1164
1	3.1981	2.197	6.0793	4.8492	4.2254	3.5916	3.9913	2.3448	3.5223	1.8606	1.2344	1.0039	0.2098	1.2968	1.2985	0.5765	1.1252	2.1141	0.7349	0.8035	1.4376
2	4.8369	3.3579	4.2102	4.8348	4.8571	5.5509	4.6178	4.9404	5.0044	4.8896	3.2545	2.0856	1.8879	3.494	2.4245	2.6988	2.1861	3.7051	2.3051	2.2072	3.2632
3	5.8382	4.2707	4.5778	5.3979	5.3796	6.2421	5.1039	5.6588	5.748	5.6968	4.4822	3.2128	3.0324	4.5622	3.6207	3.713	3.3006	4.4403	3.6048	3.5808	4.5781
4	6.6456	6.1778	5.0574	6.0336	6.4336	7.0456	6.4216	7.2071	6.9109	7.0313	6.4483	6.0251	6.1633	6.6502	5.9036	6.3617	5.8371	6.6815	6.2073	5.8852	6.2107
5	4.5596	5.4368	2.5508	3.2886	3.7456	4.2408	4.0804	5.3774	4.3433	5.7151	6.2797	6.1737	6.8844	6.028	5.9218	6.6716	6.1924	5.4832	6.4173	6.5844	6.0692
6	4.6888	5.5843	2.6385	3.545	3.745	4.6323	4.2605	5.388	4.4212	5.7597	6.1988	6.3052	6.8954	6.1776	6.4621	6.8446	6.0651	5.5104	6.5029	6.5119	6.2652
7	4.279	4.6719	2.0455	2.9726	3.4005	3.8853	3.1804	4.3016	3.6737	5.0686	5.3773	5.2608	5.6849	5.2424	5.7815	5.5187	5.4553	4.3412	5.4518	6.0442	5.6634
8	1.3403	1.6079	0.2014	0.6262	0.8402	0.8825	0.5827	0.7264	0.9199	0.9792	1.9143	2.4105	2.3566	1.9251	2.8746	1.8792	2.3538	1.2857	2.3858	2.7358	2.2953
9	0.6002	0.651	0.0501	0.2494	0.2668	0.1952	0.1051	0.2354	0.4139	0.368	1.0331	0.9901	0.9416	0.7254	1.2144	0.6984	0.9938	0.4302	1.0234	1.4587	1.1969
10	0.7916	0.6812	0.1063	0	0.4397	0.3757	0.1351	0.4366	0.391	0.3682	0.8292	0.9817	1.1205	0.9422	0.7042	0.6508	1.3075	0.5967	1.2671	1.1056	0.7796

Table 19: Categorically modeled percentage caught at age estimations for gray triggerfish in the state of Texas.

%	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
0	9.0278	13.376	36	22.222	14.103	11.278	17.978	5.3571	5.4795	0	3.1915	2.7397	0.7692	1.2048	1.0309	1.0638	5.7143	5.6452	3.8095	0	2.1978
1	61.111	39.49	56	55.556	57.692	65.414	55.056	54.464	64.384	58.621	40.426	23.288	21.538	39.759	27.835	34.043	27.143	42.742	29.524	25.581	38.462
2	12.5	29.299	6.6667	15.556	19.231	15.789	23.596	31.25	15.068	31.034	30.851	39.041	40.769	32.53	36.082	41.489	35.714	31.452	31.429	36.047	30.769
3	8.3333	9.5541	1.3333	0	3.8462	4.5113	2.2472	8.0357	9.589	1.1494	11.702	20.548	25.385	16.867	12.371	12.766	20	16.129	23.81	17.442	10.989
4	3.4722	2.5478	0	6.6667	2.5641	0.7519	1.1236	0.8929	2.7397	2.2989	6.383	10.959	7.6923	3.6145	9.2784	7.4468	4.2857	2.4194	8.5714	4.6512	4.3956
5	1.3889	3.1847	0	0	1.2821	0	0	0	2.7397	3.4483	5.3191	1.3699	2.3077	2.4096	6.1856	1.0638	1.4286	1.6129	0.9524	8.1395	5.4945
6	1.3889	0.6369	0	0	0	0	0	0	0	1.1494	1.0638	2.0548	0.7692	2.4096	2.0619	1.0638	1.4286	0	0.9524	5.814	3.2967
7	0.6944	0	0	0	0	0.7519	0	0	0	0	0	0	0	0	1.0309	0	1.4286	0	0.9524	1.1628	2.1978
8	0	0.6369	0	0	0	0.7519	0	0	0	0	1.0638	0	0.7692	0	2.0619	1.0638	1.4286	0	0	0	1.0989
9	1.3889	0	0	0	1.2821	0	0	0	0	1.1494	0	0	0	0	0	0	1.4286	0	0	0	0
10	0.6944	1.2739	0	0	0	0.7519	0	0	0	1.1494	0	0	0	1.2048	2.0619	0	0	0	0	1.1628	1.0989

Table 20: Von Bertalanffy modeled percentage caught at age estimations for gray triggerfish in the state of Texas.

Appendix B: Comparative Catch at Age Estimations

The charts provided in this section show the results of the catch at age calculations for each year and fishery sector using the two methods presented in the paper. Results from each method are presented side by side. Error bars signify standard error.

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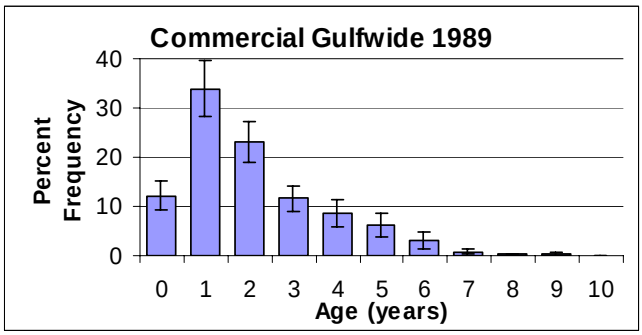

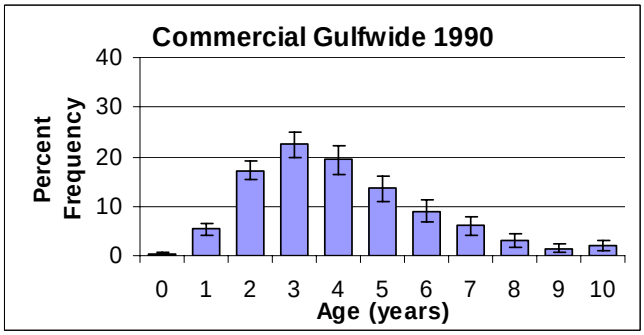

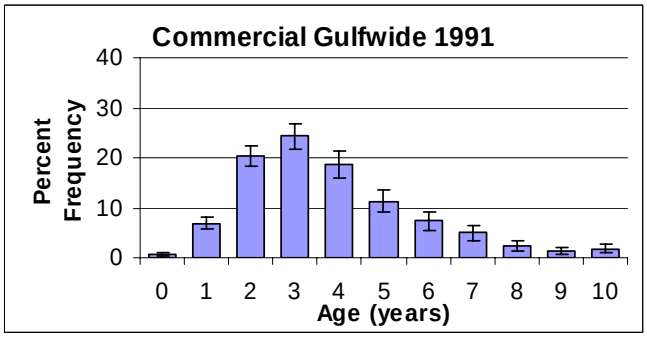

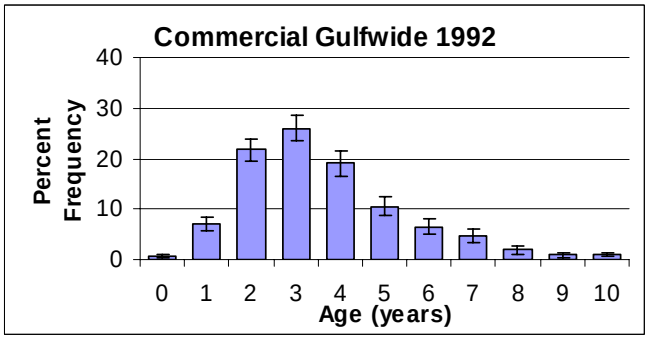

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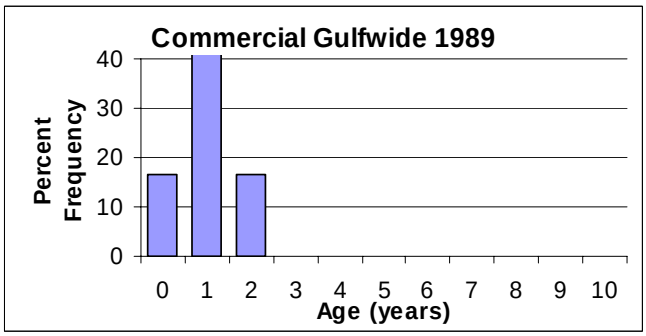

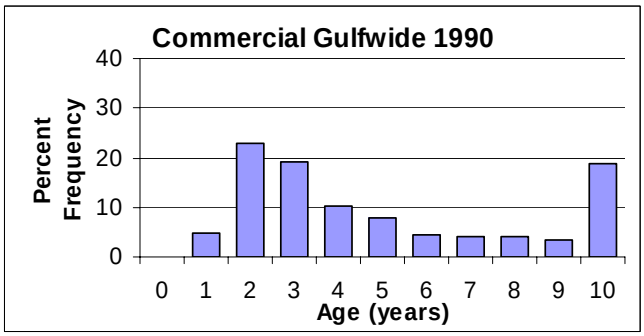

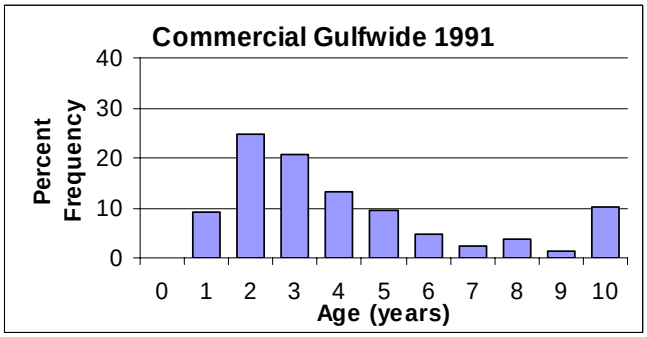

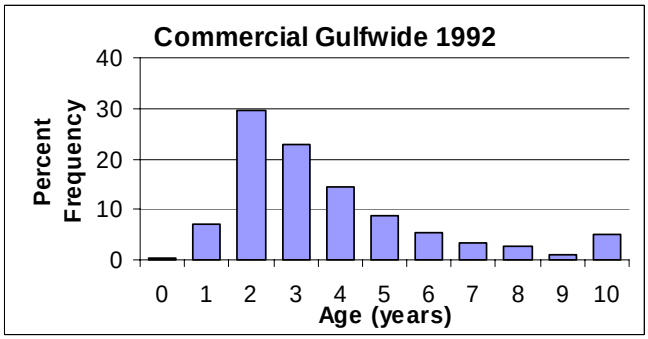

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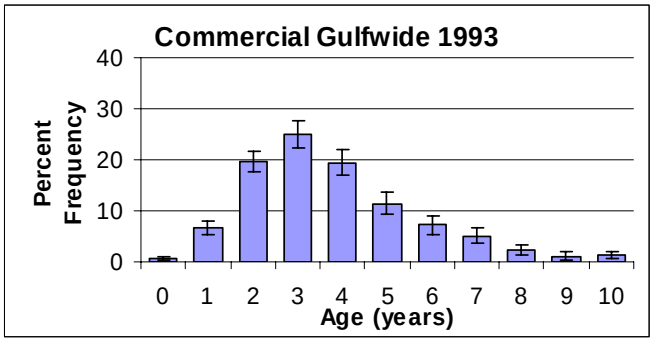

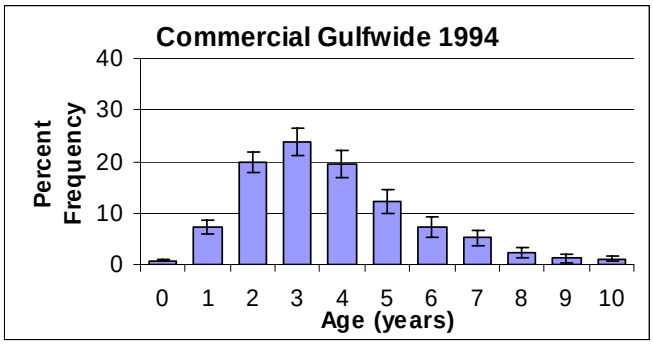

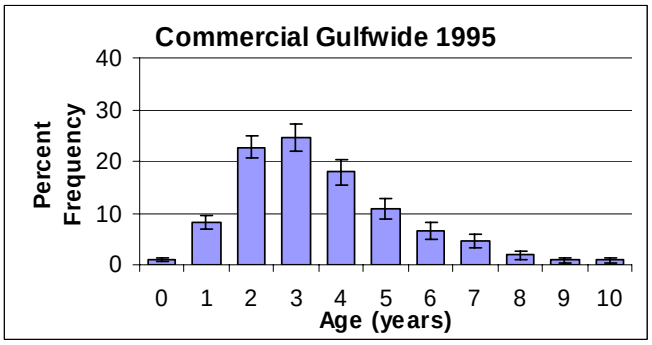

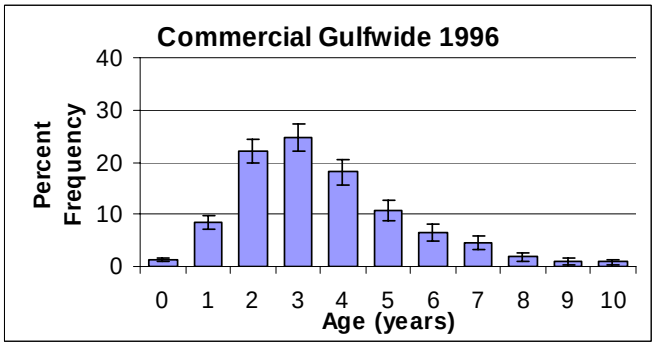

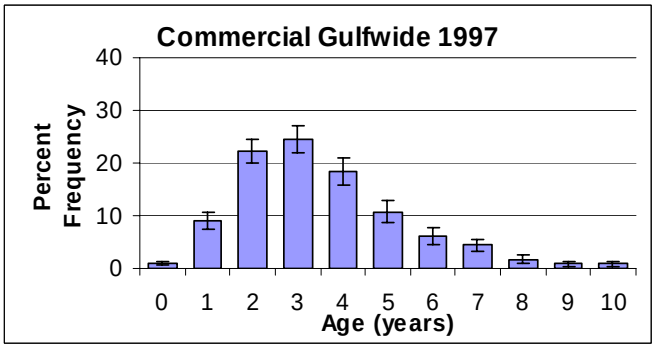

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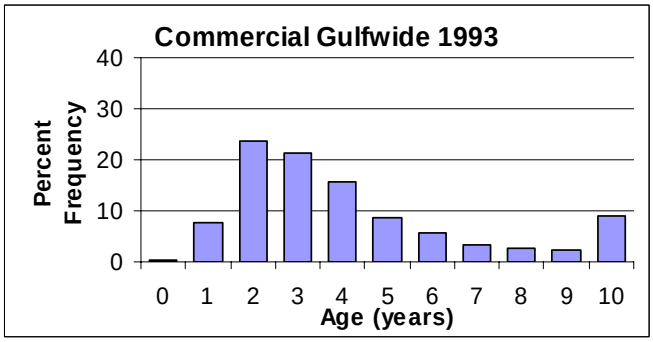

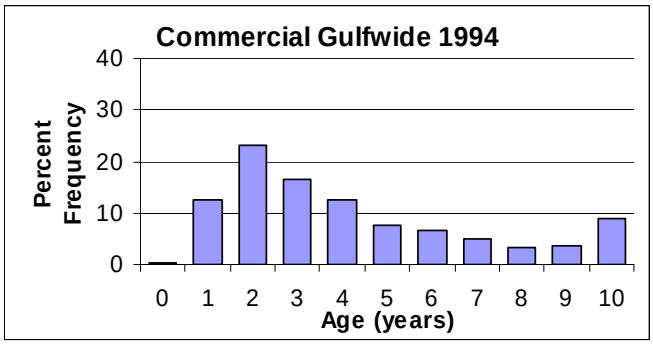

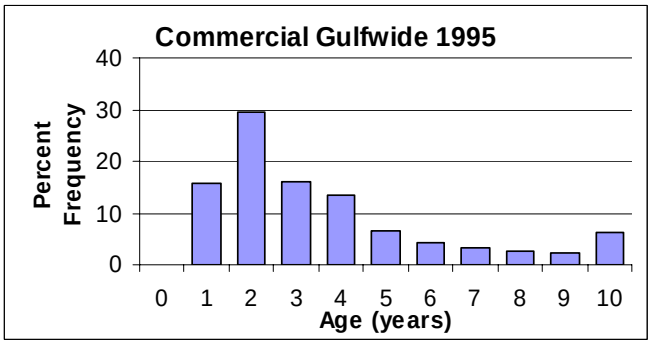

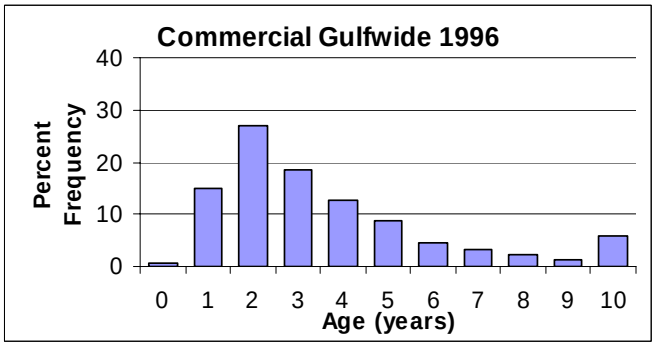

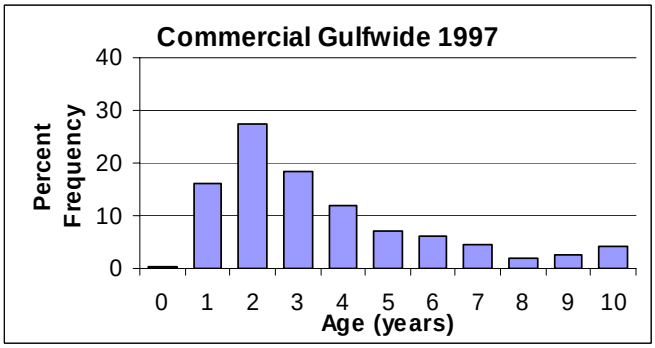

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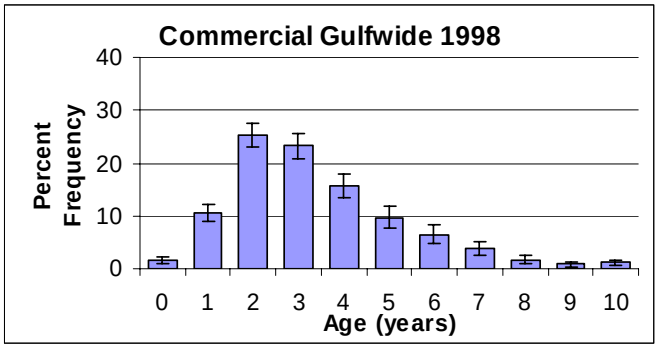

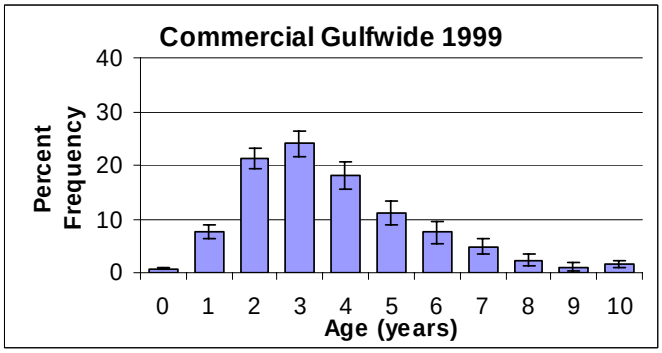

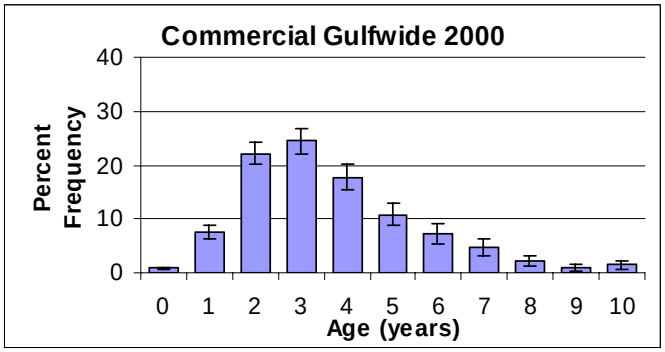

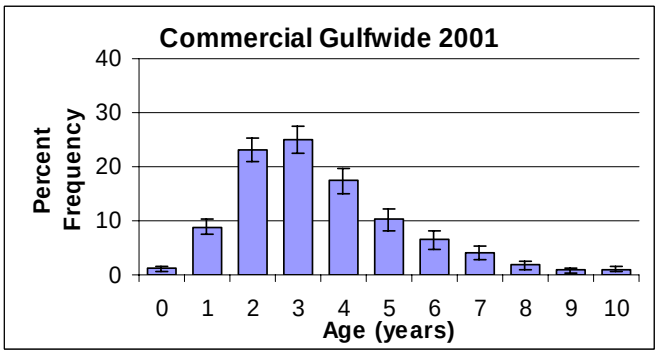

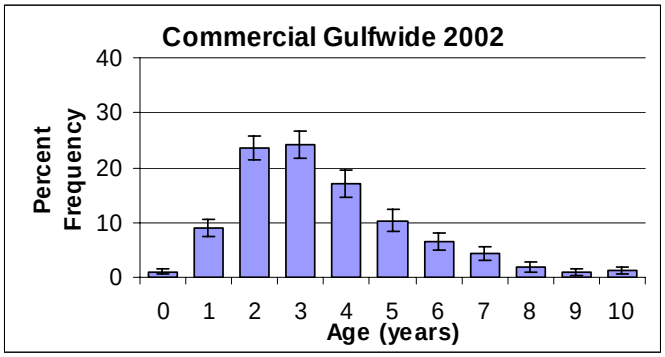

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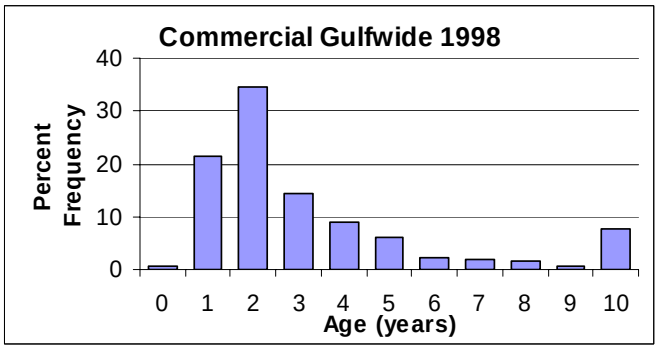

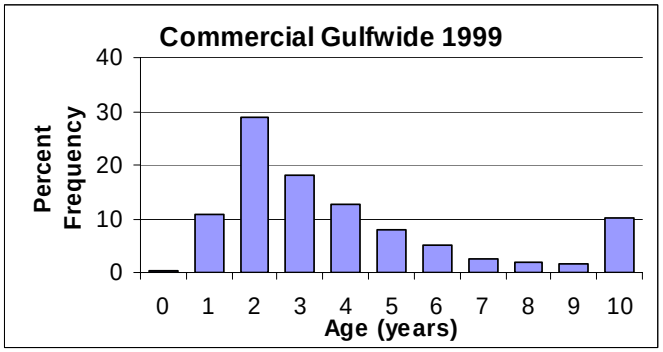

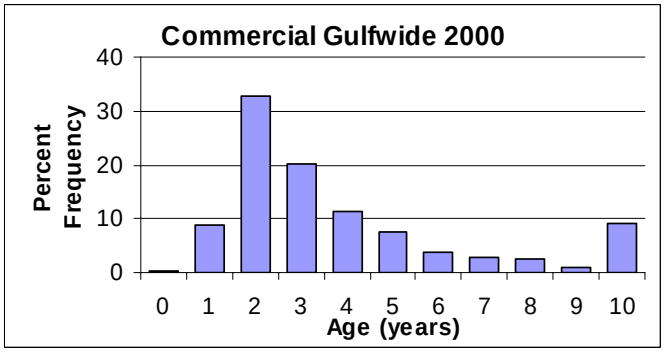

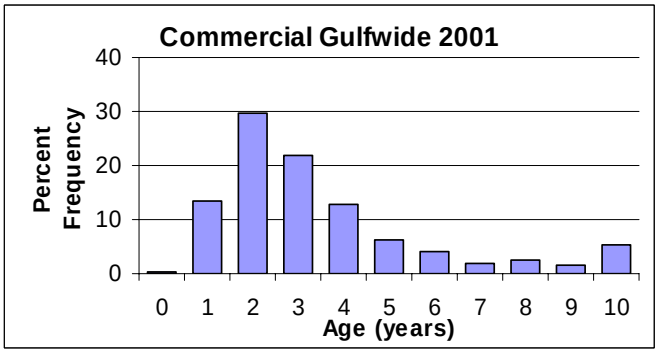

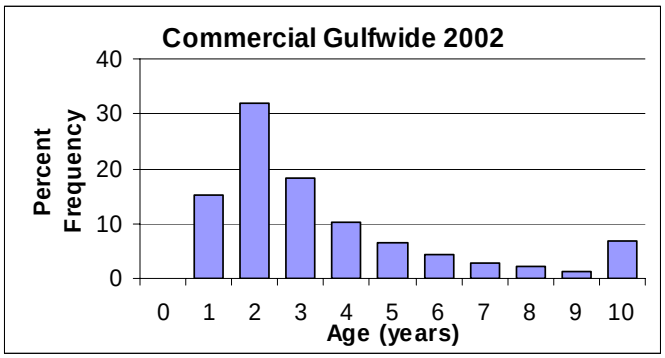

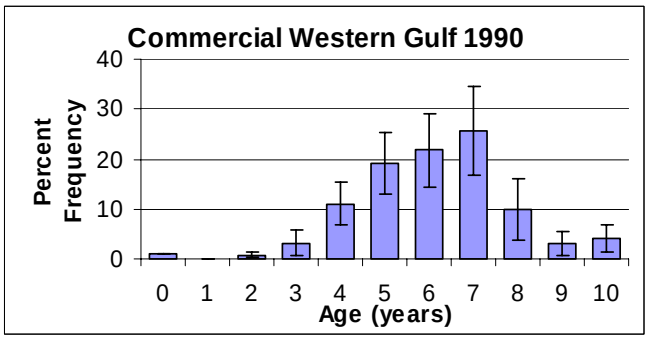

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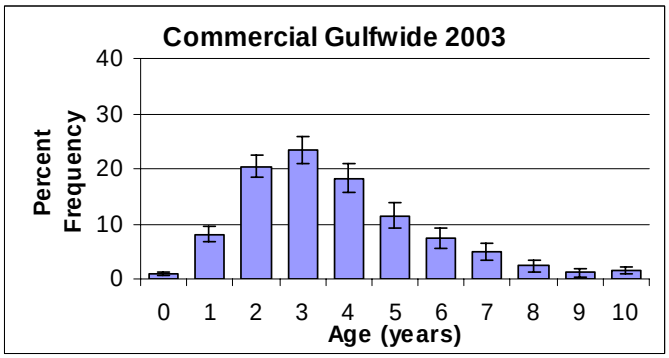

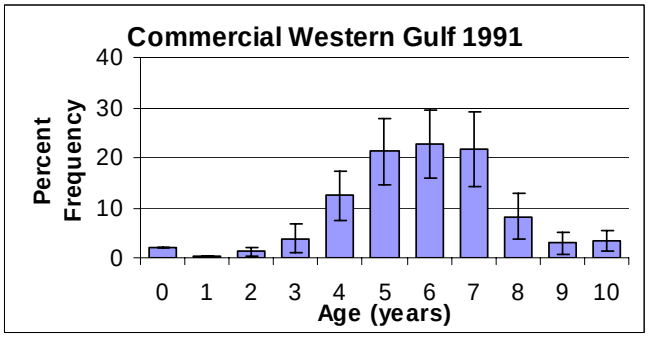

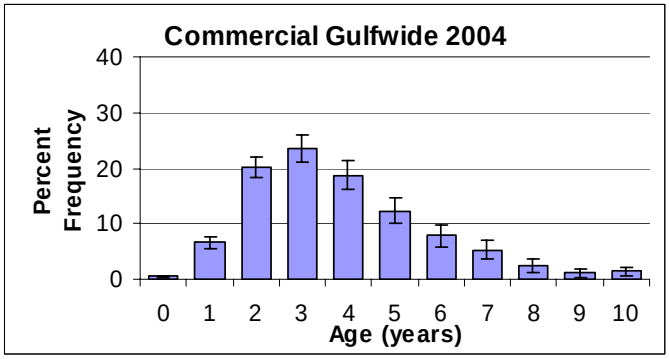

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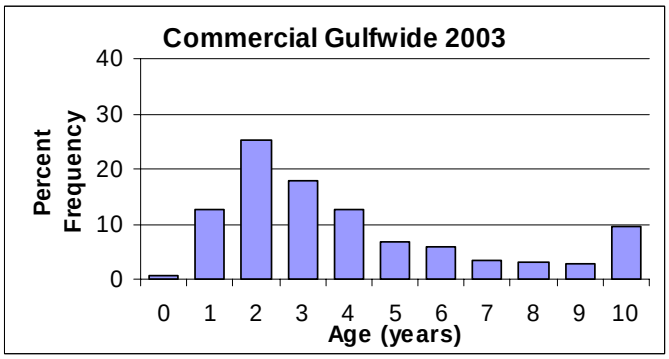

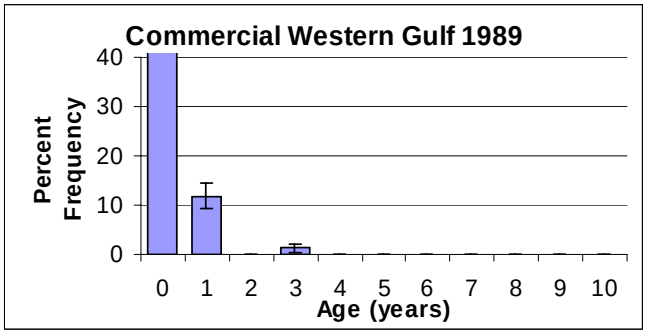

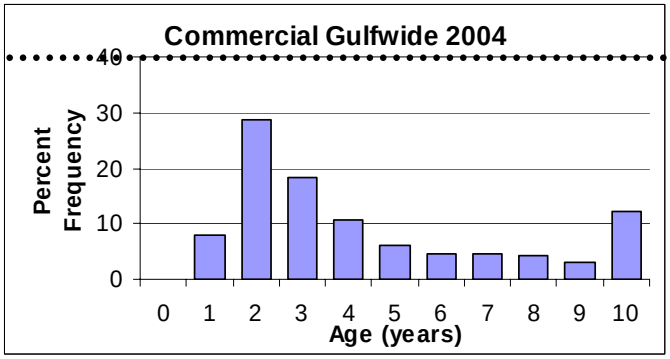

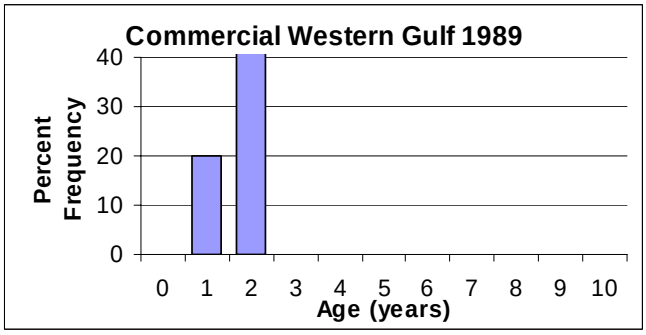

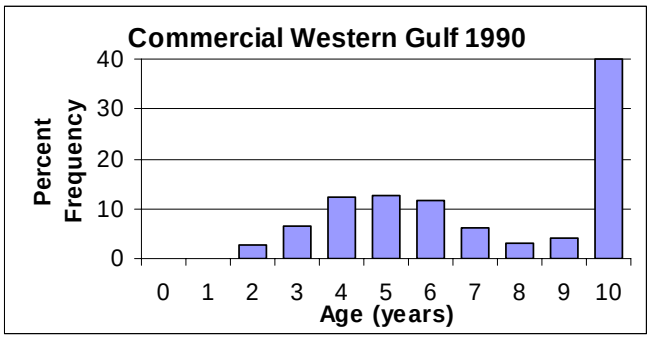

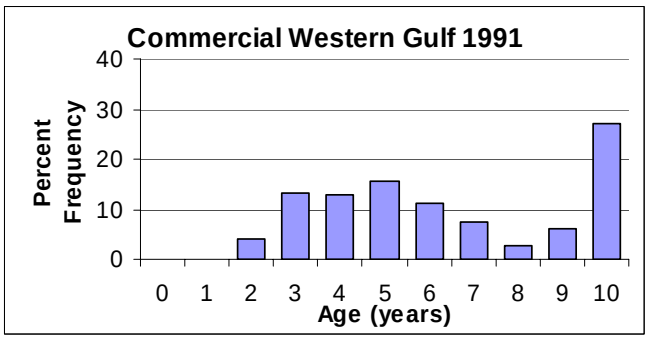

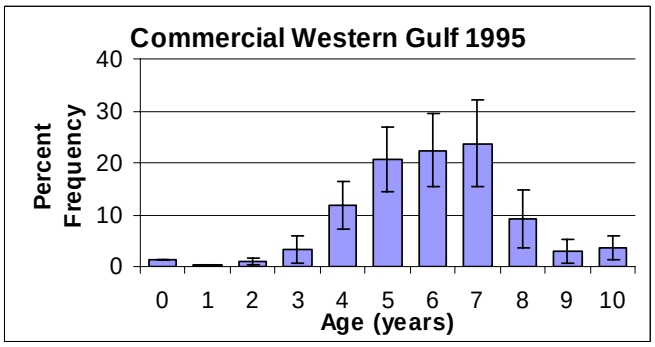

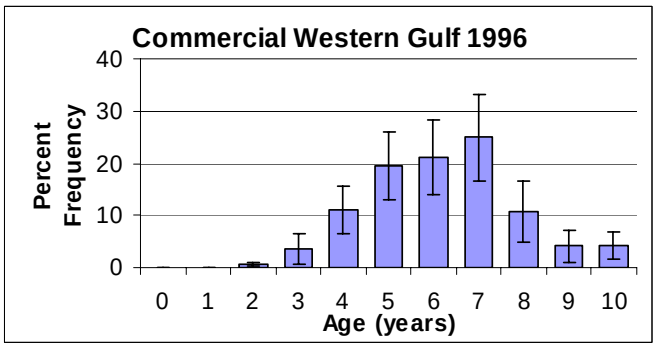

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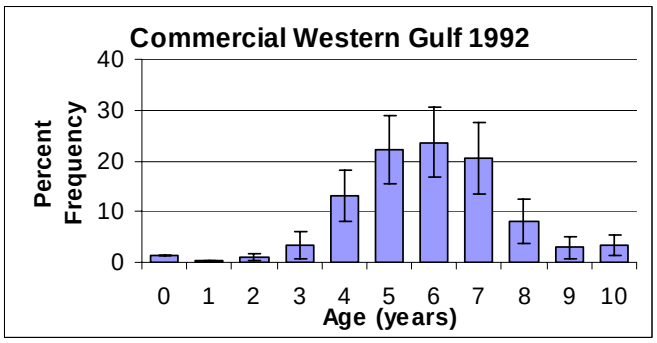

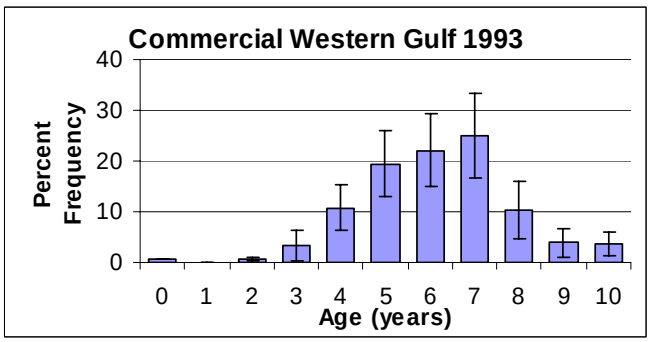

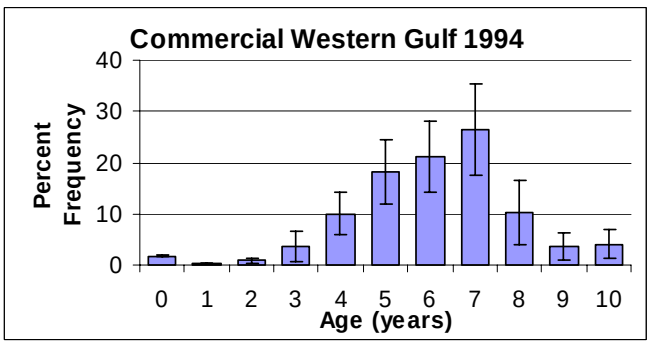

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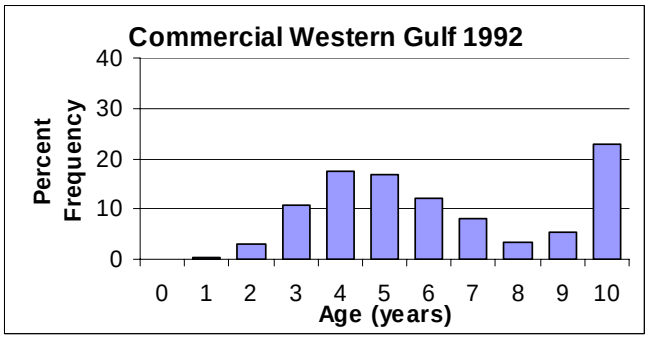

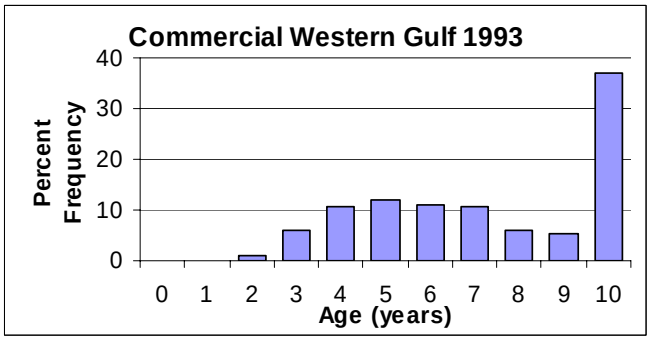

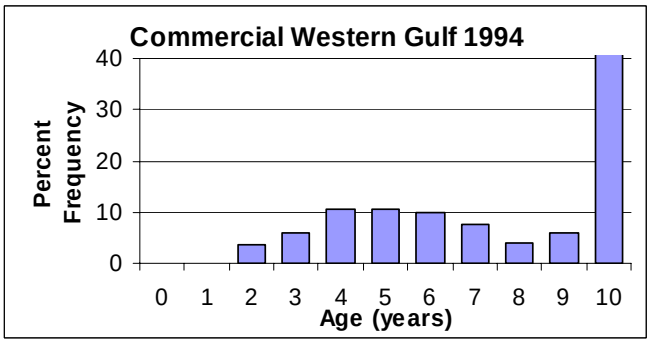

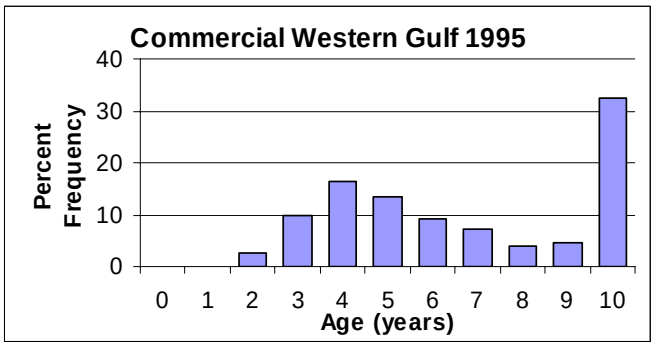

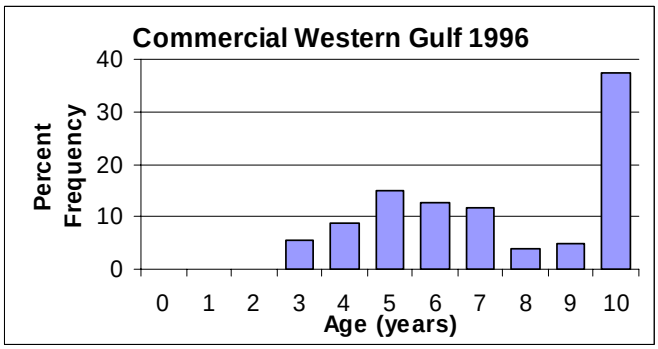

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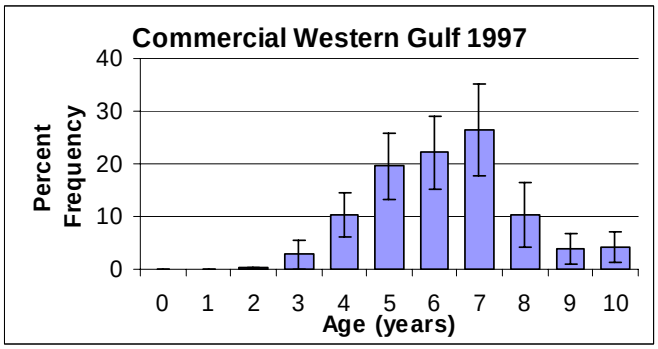

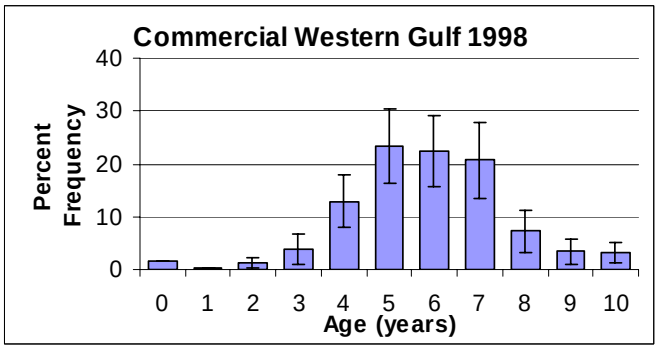

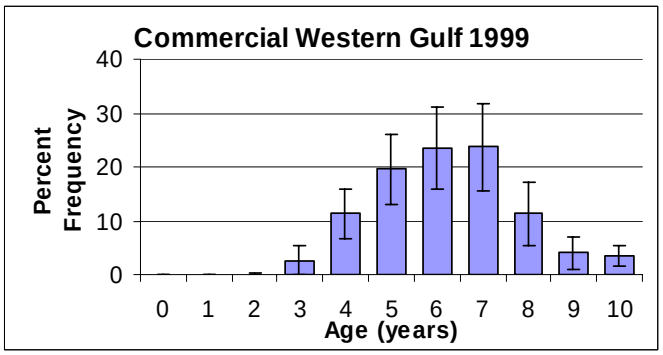

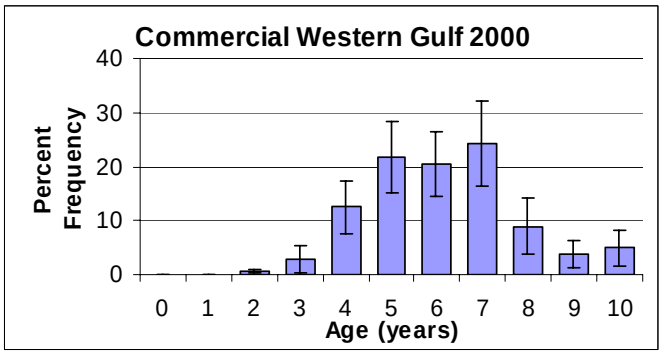

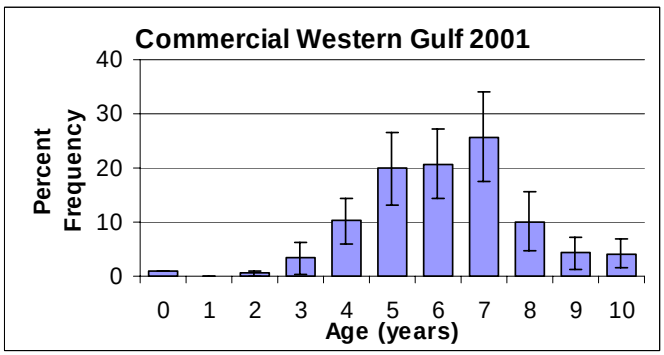

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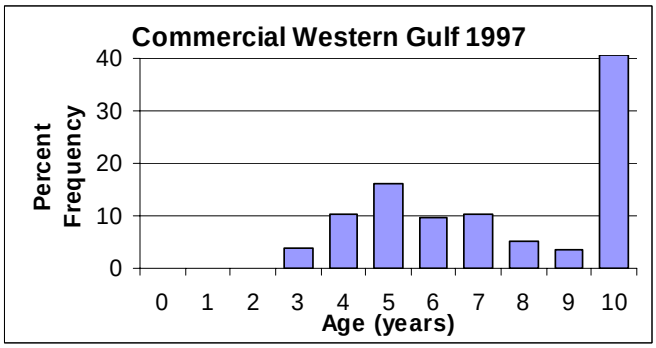

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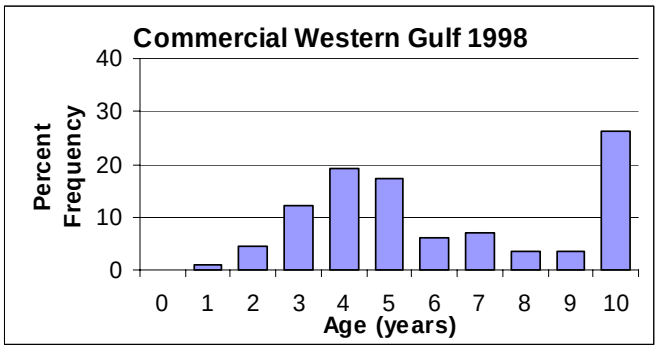

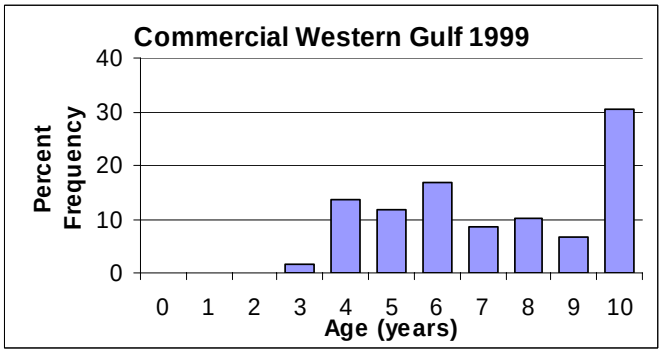

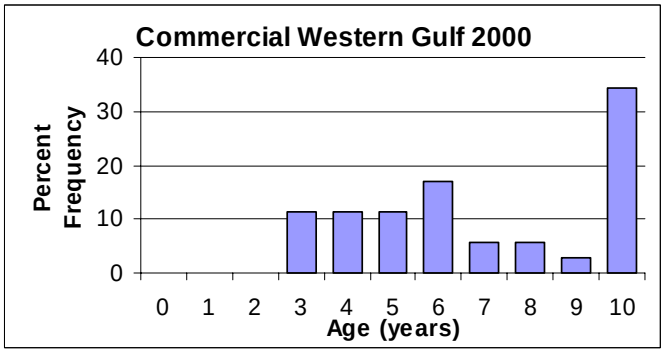

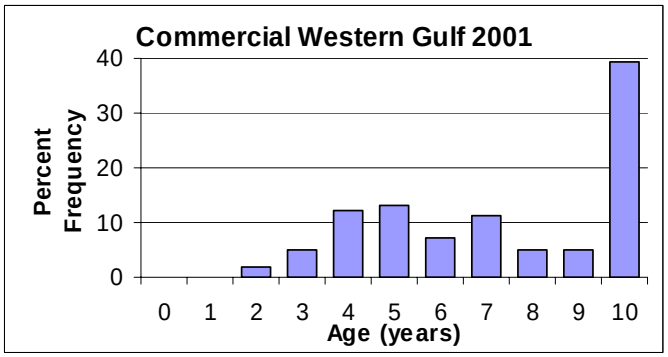

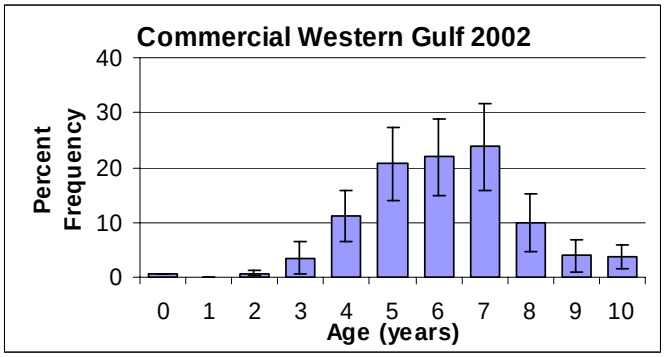

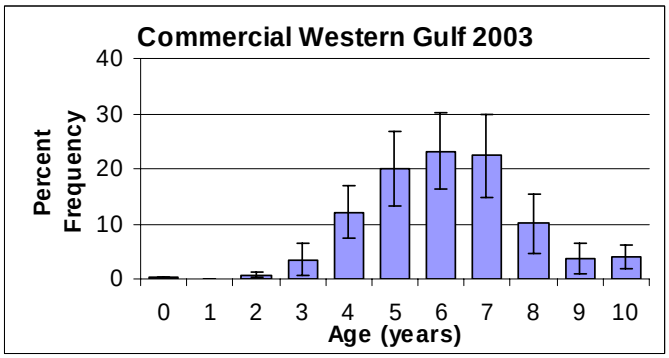

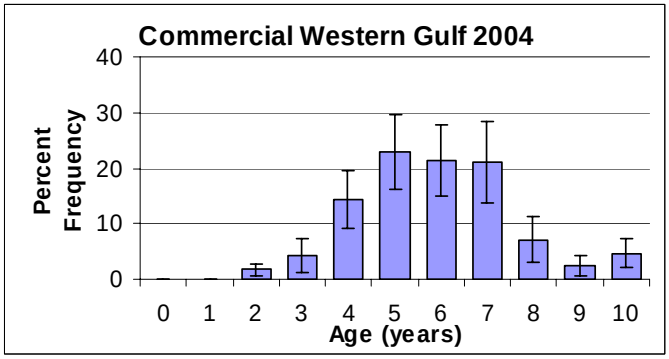

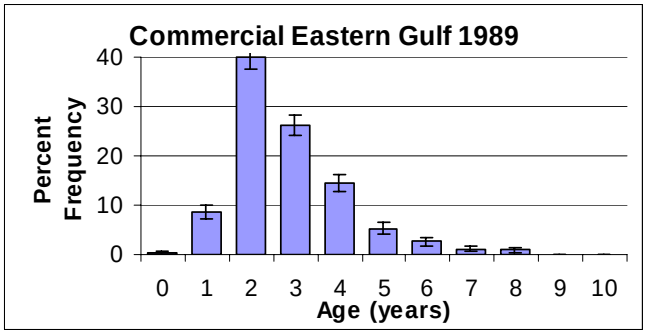

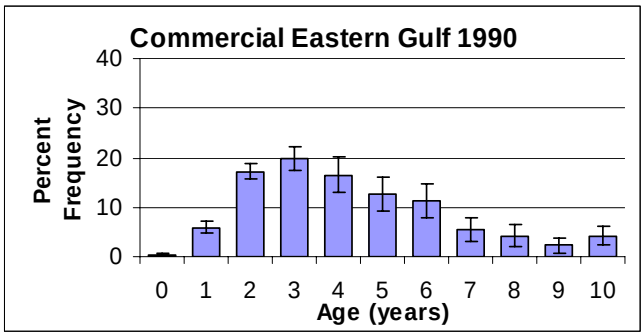

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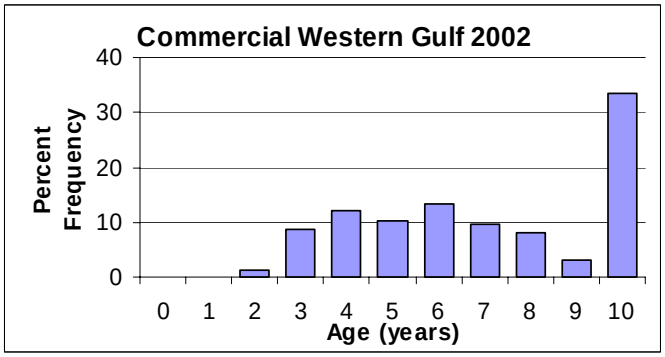

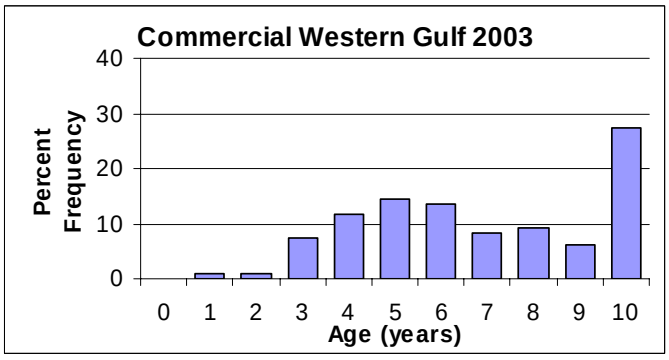

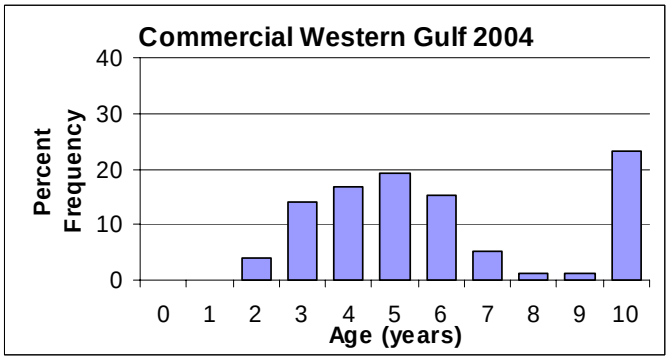

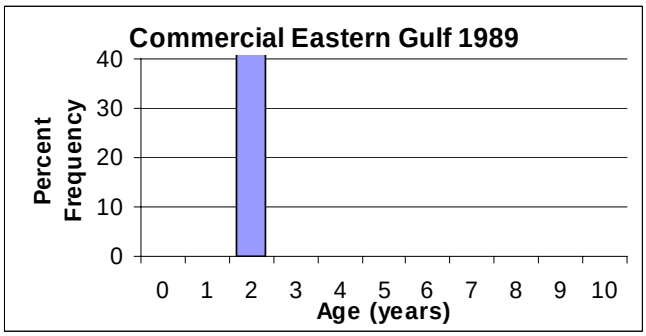

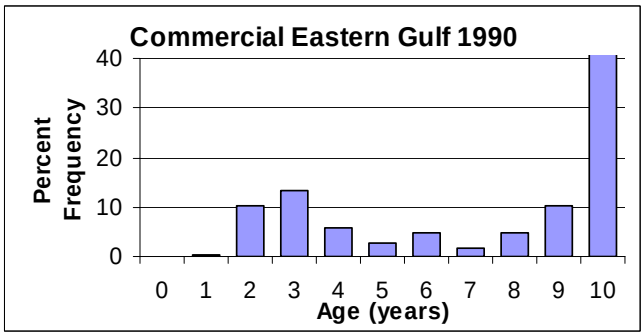

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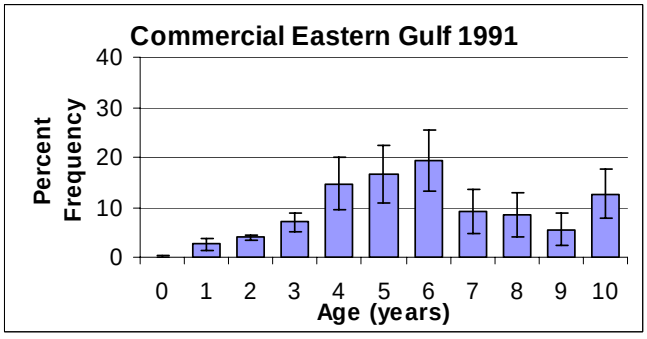

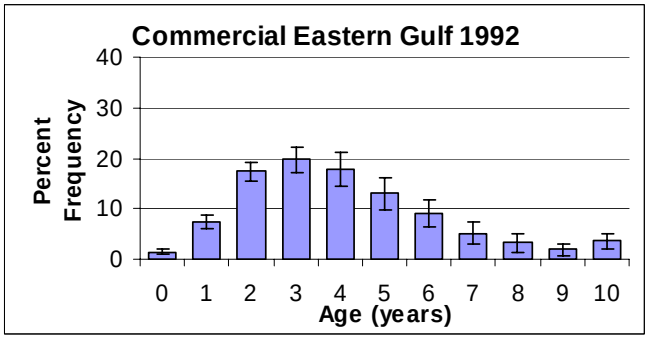

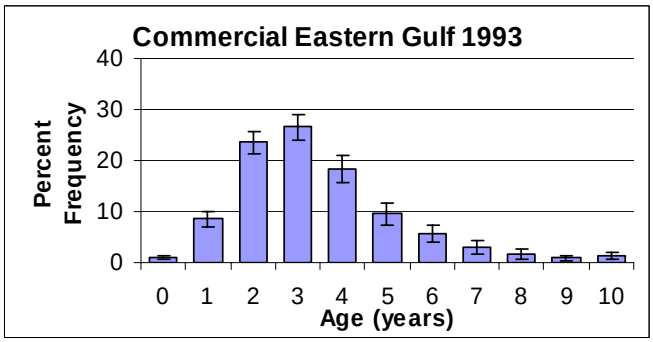

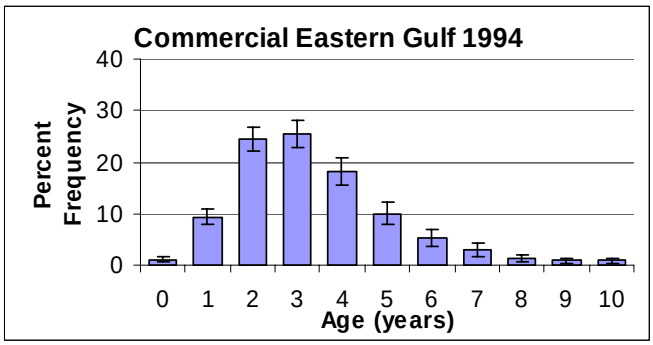

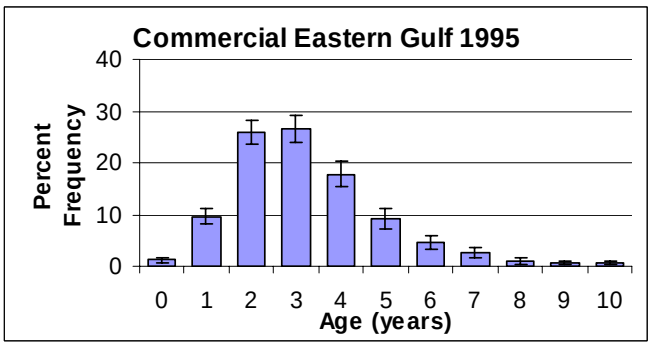

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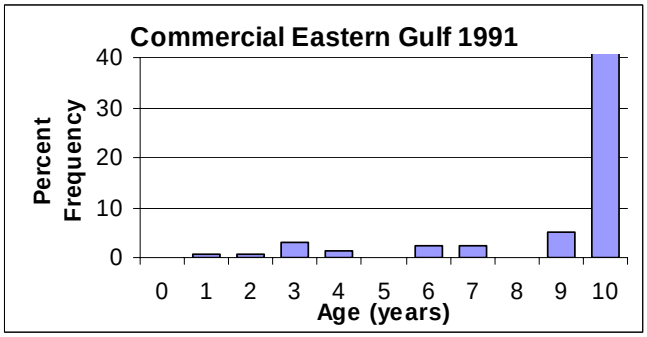

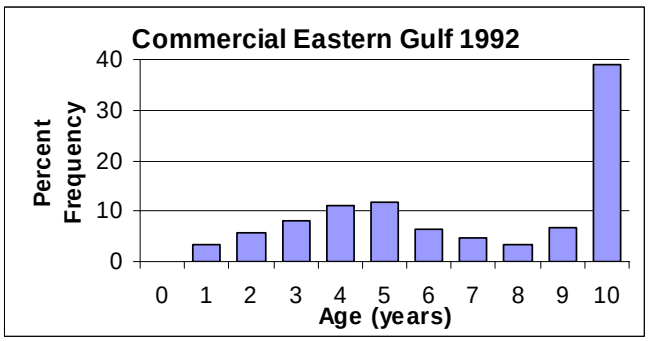

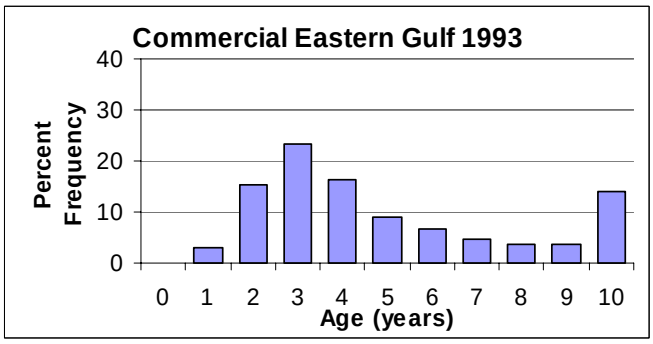

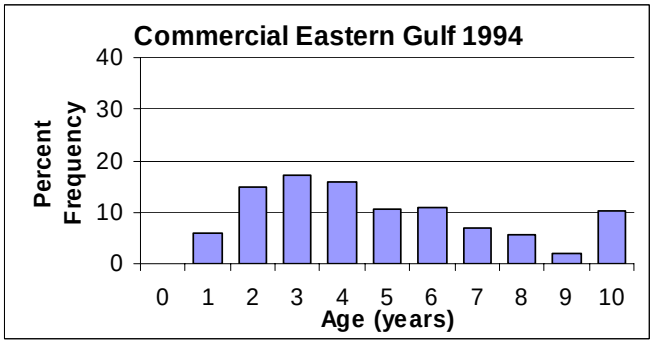

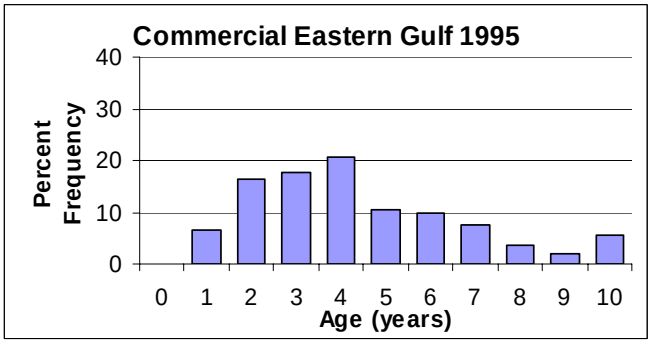

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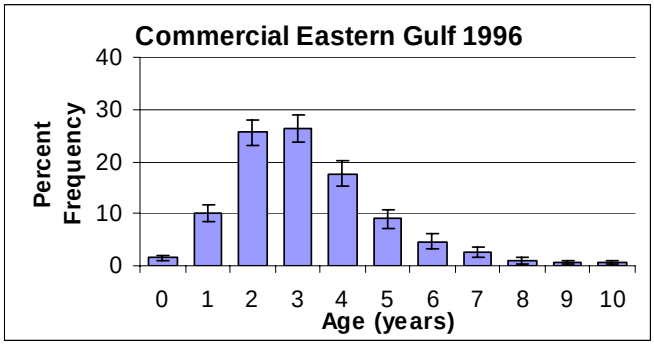

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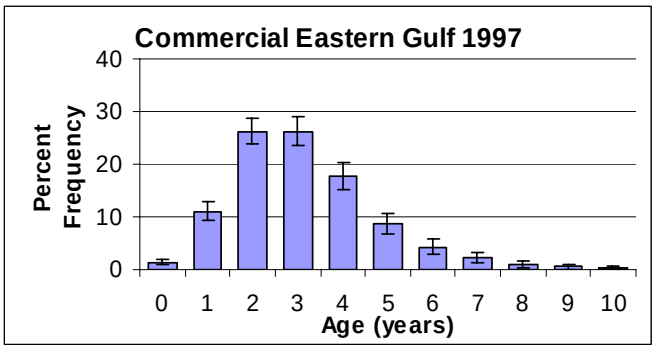

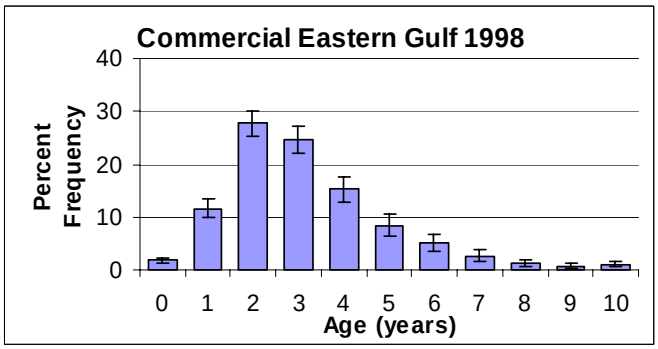

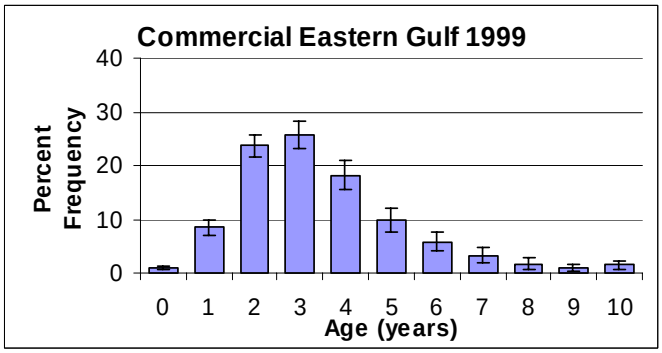

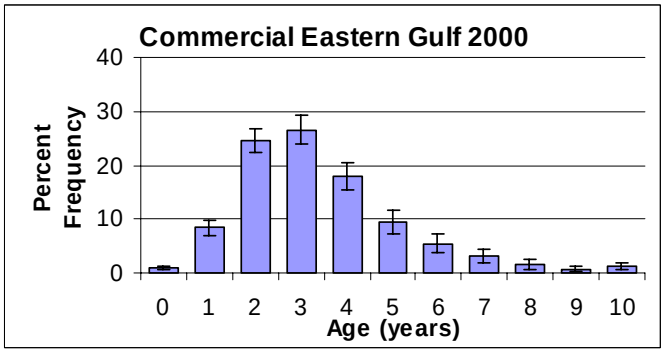

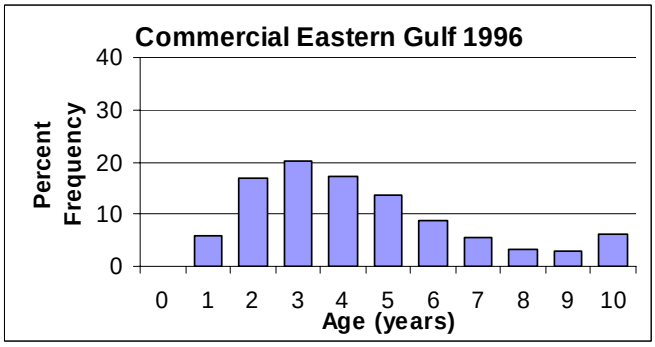

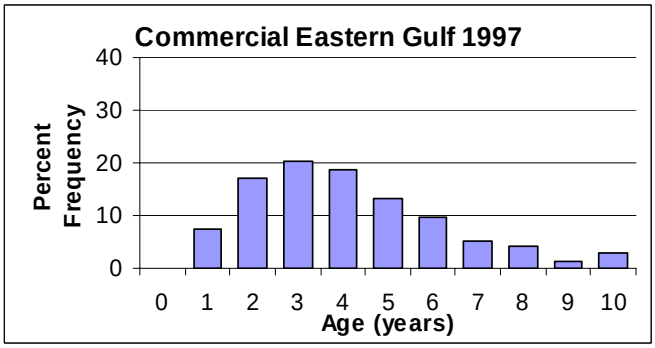

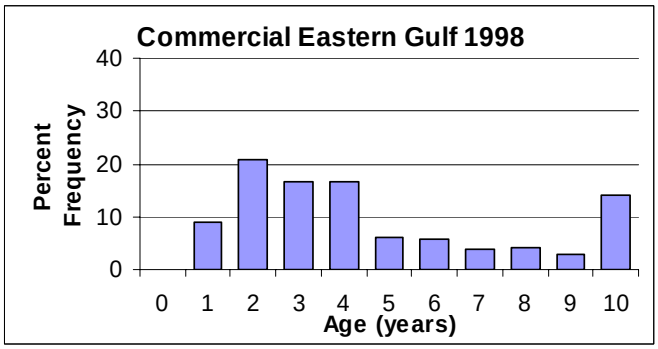

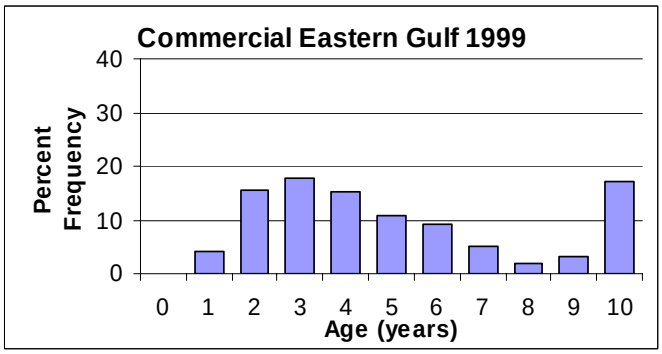

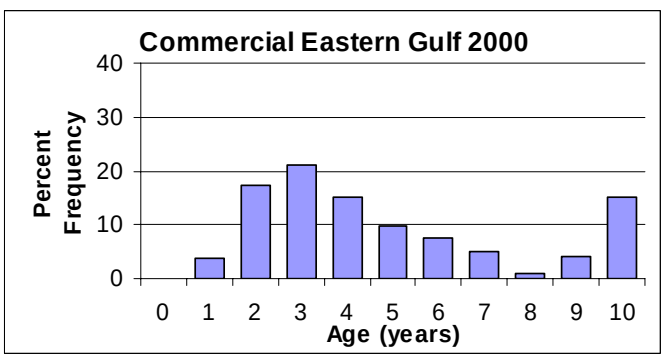

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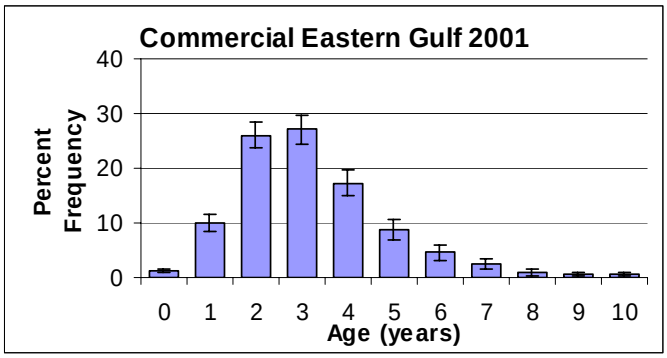

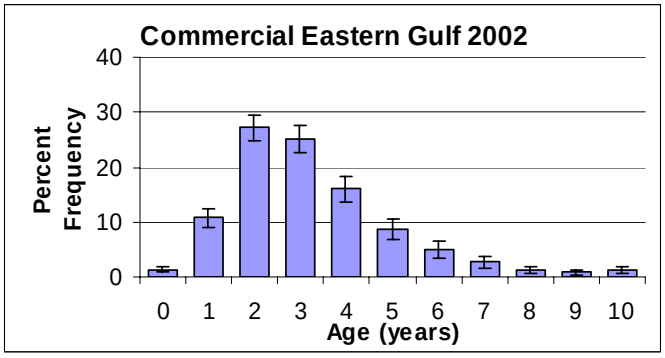

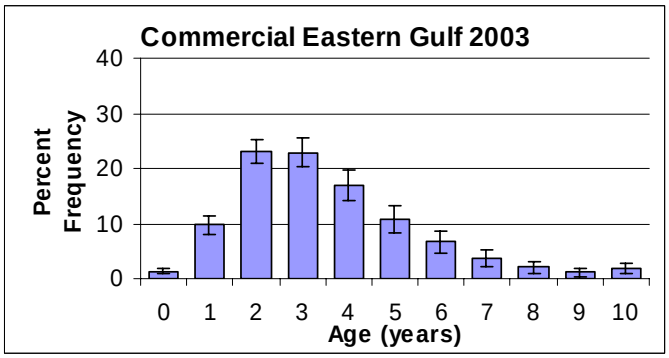

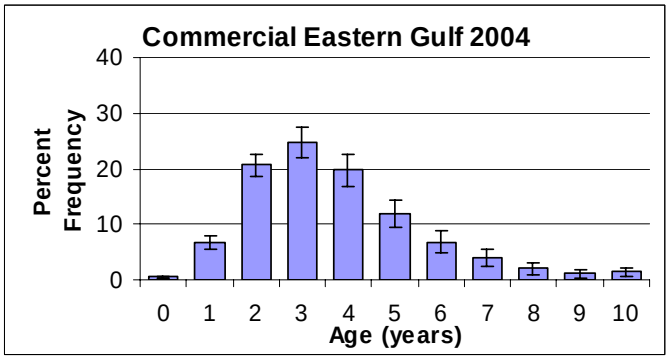

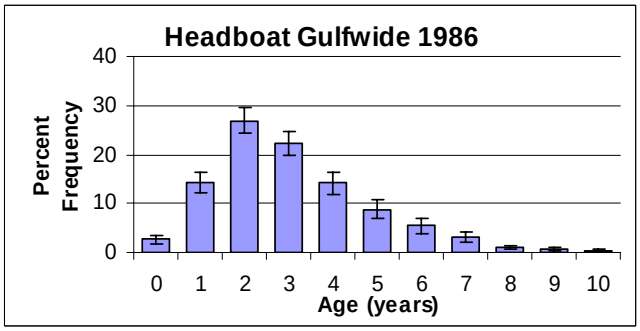

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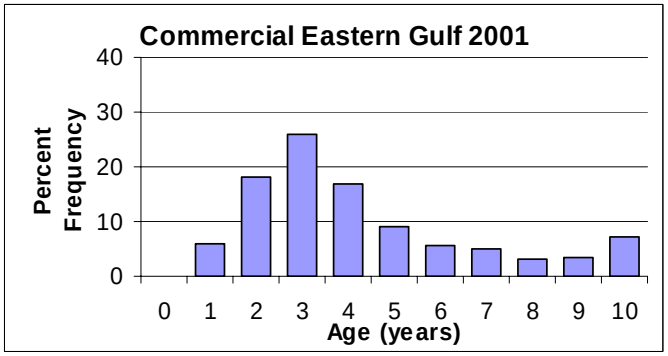

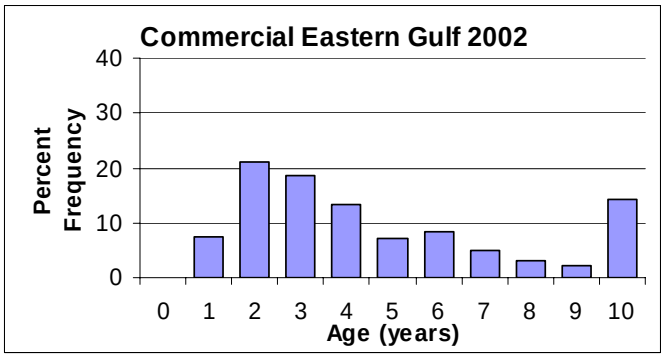

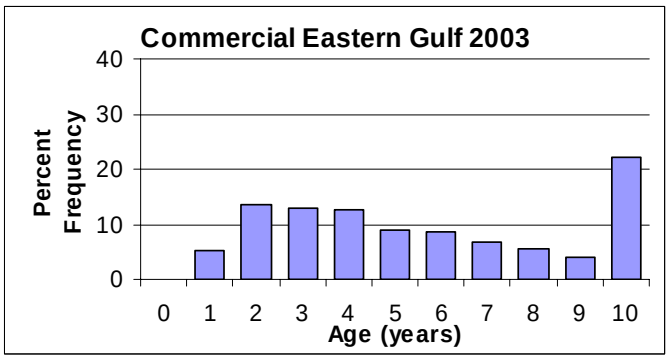

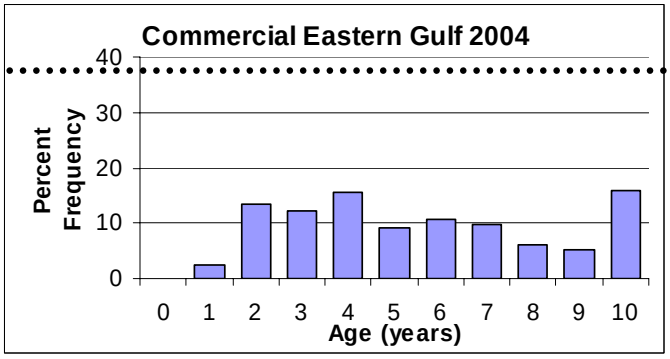

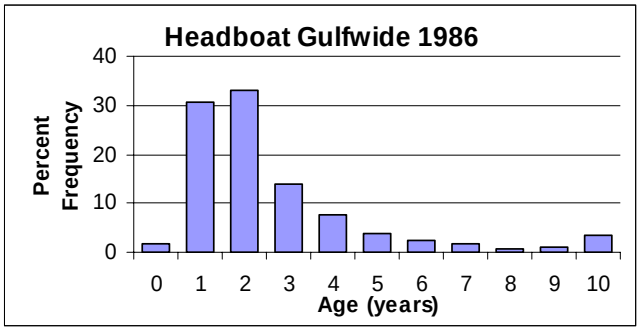

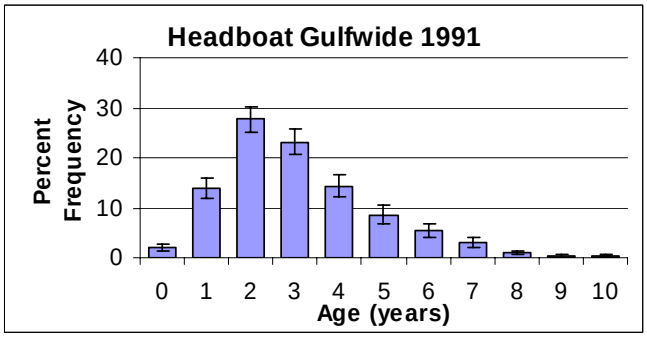

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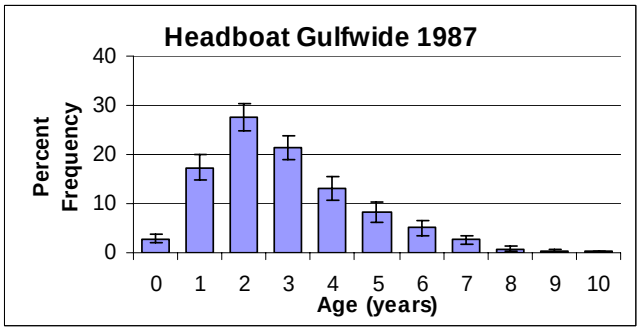

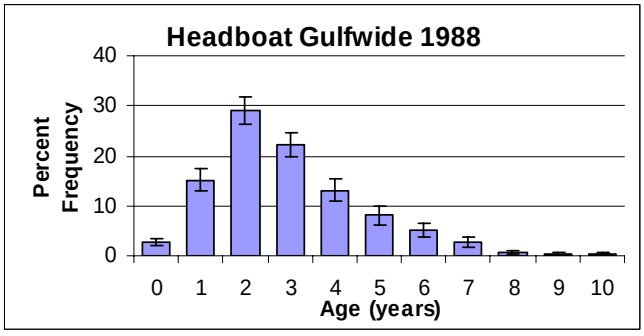

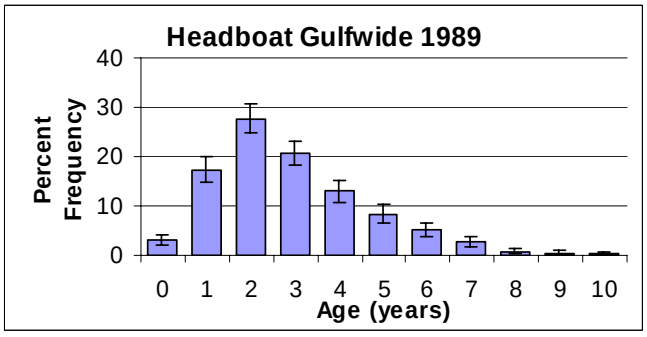

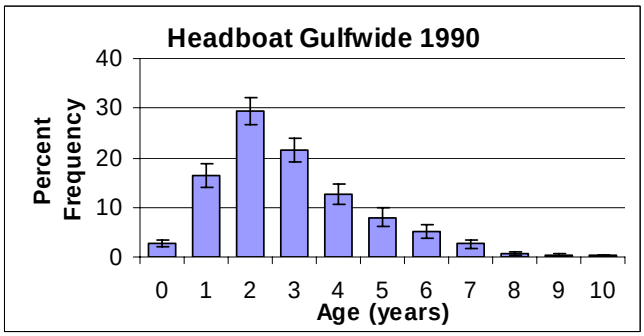

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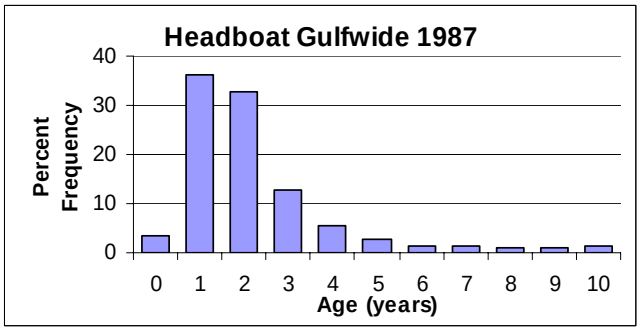

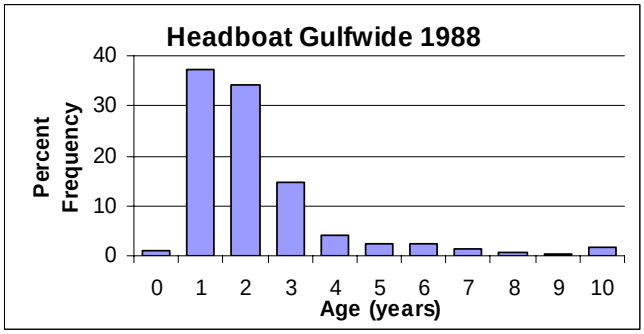

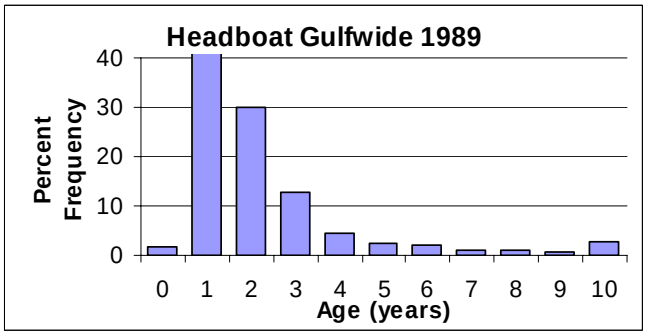

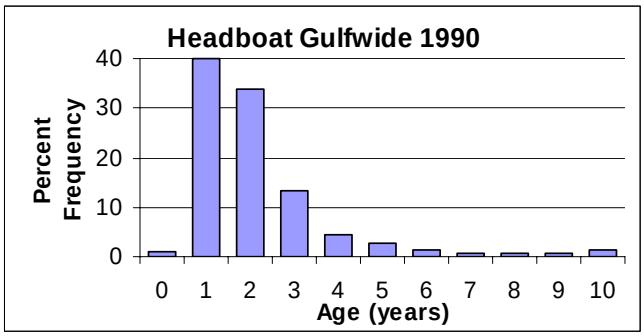

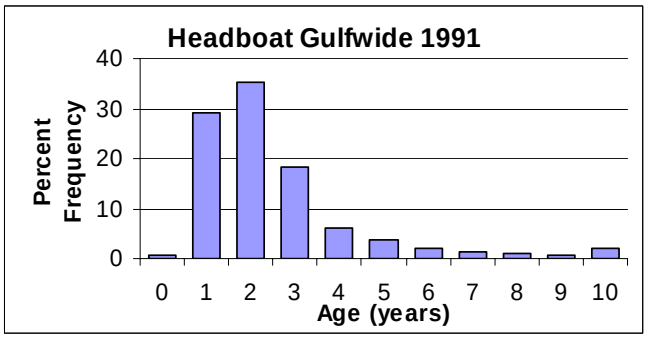

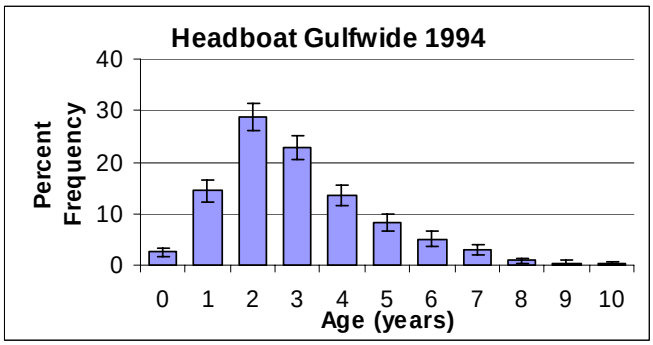

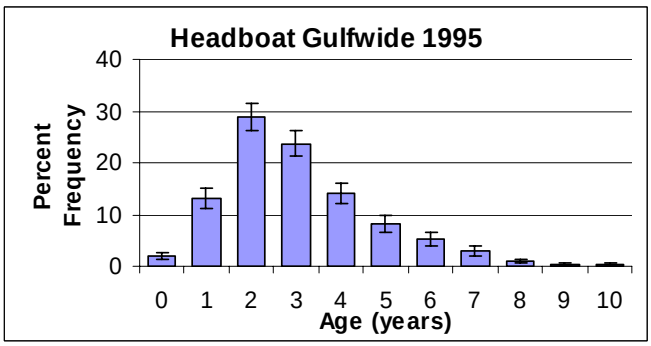

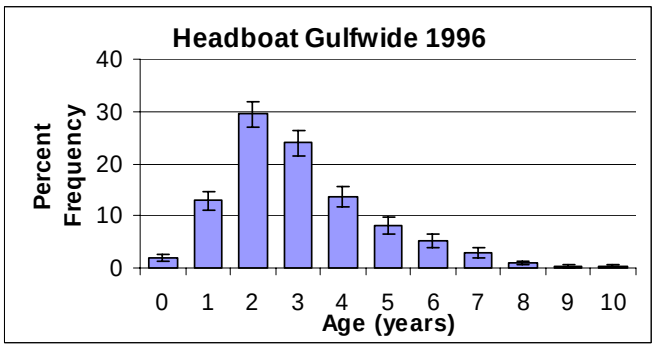

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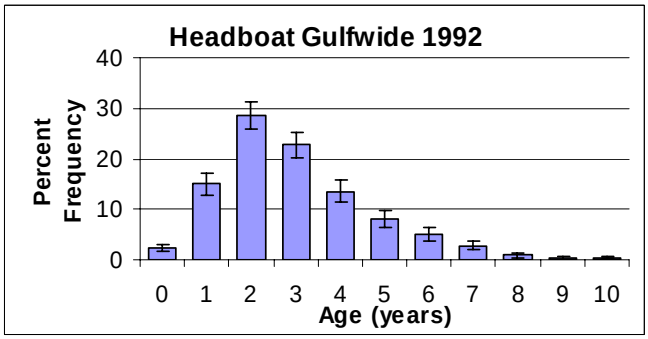

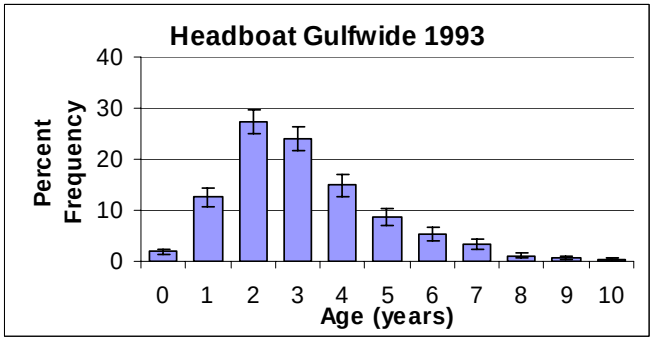

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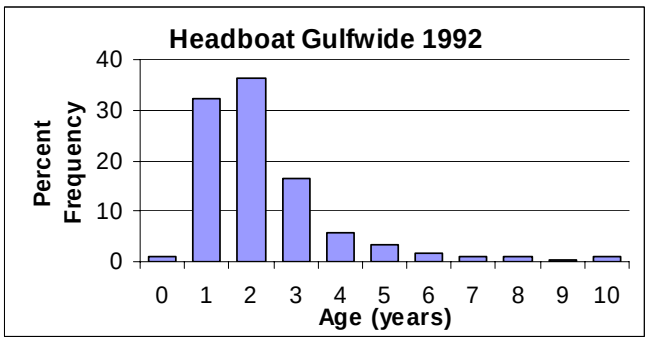

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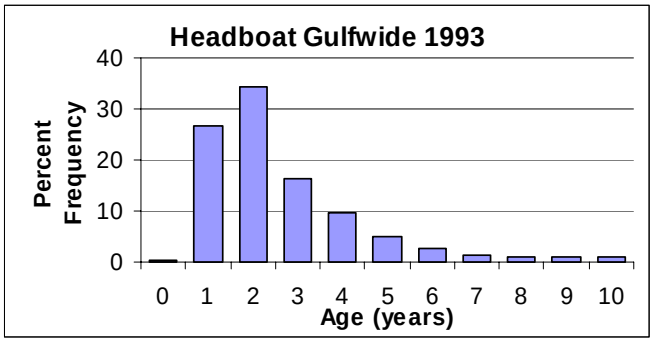

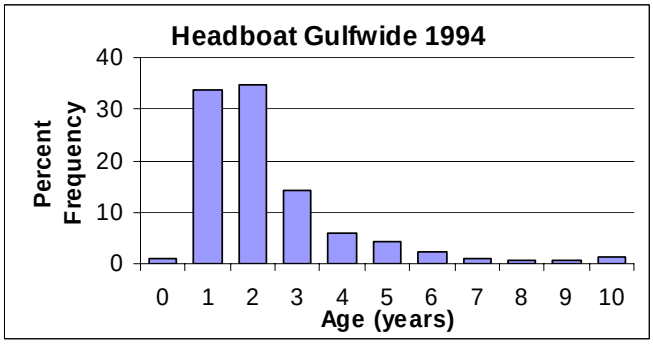

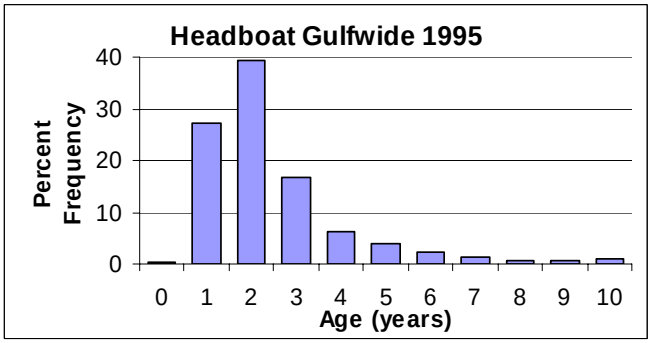

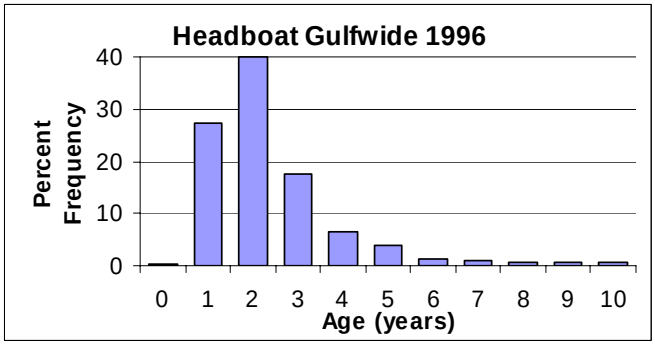

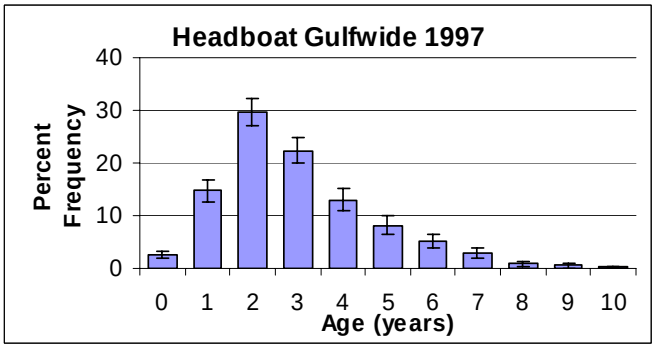

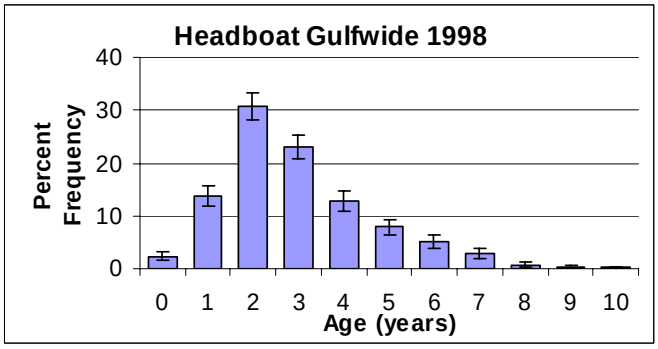

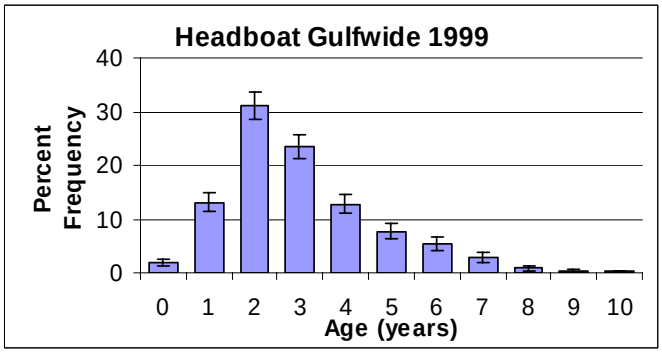

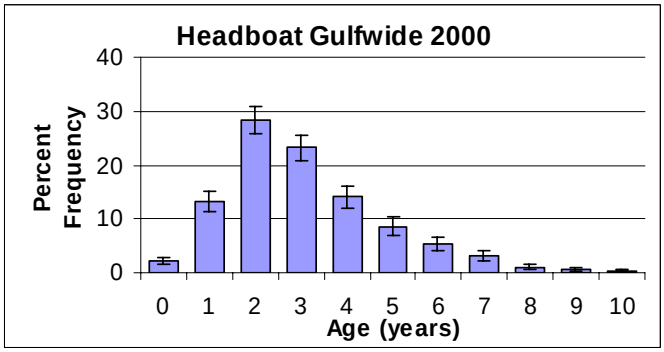

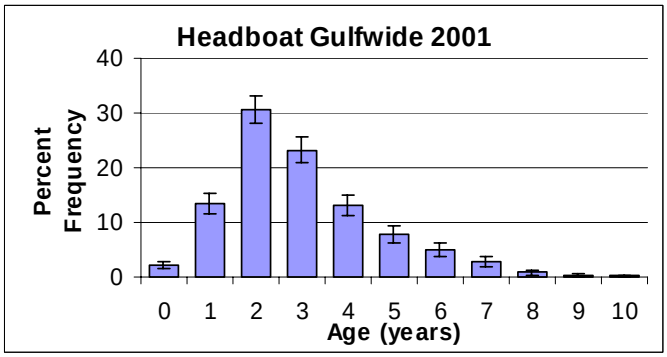

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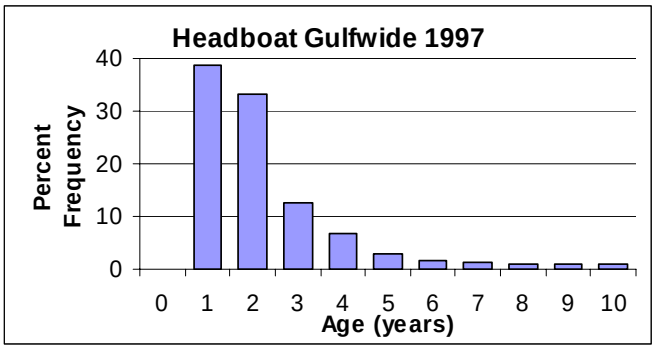

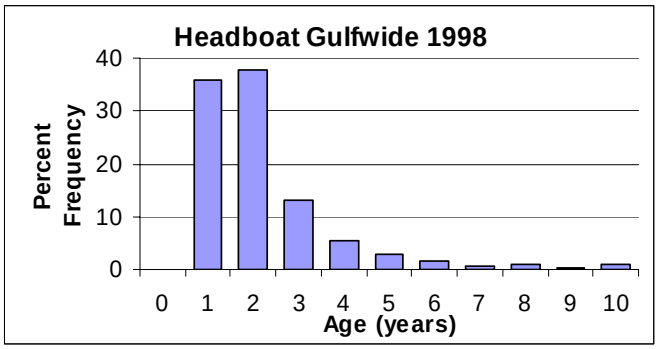

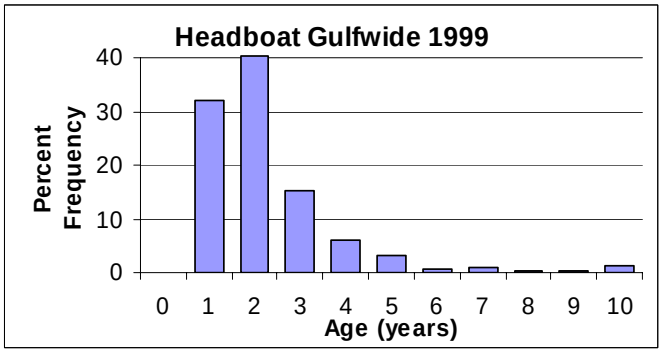

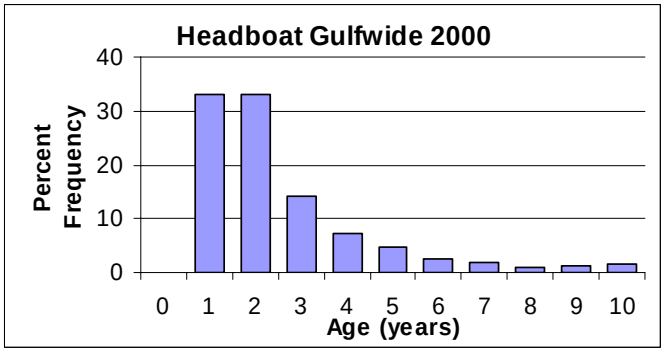

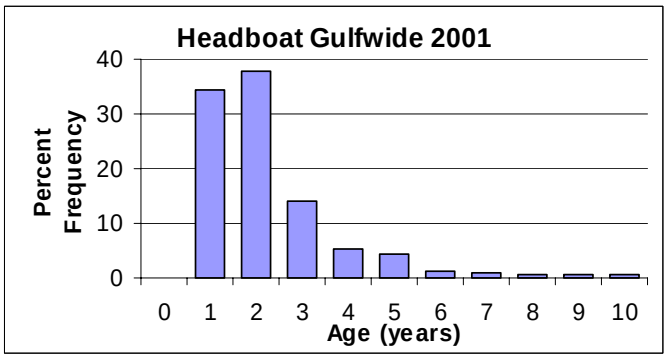

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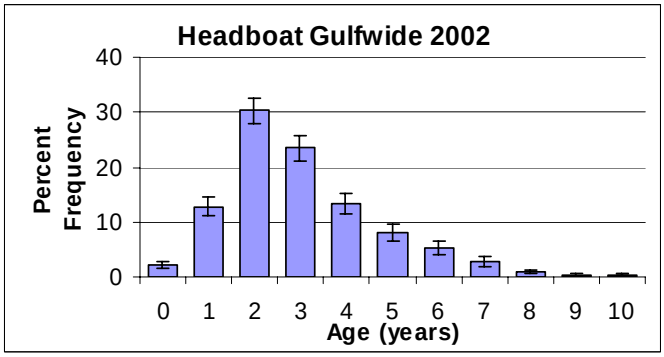

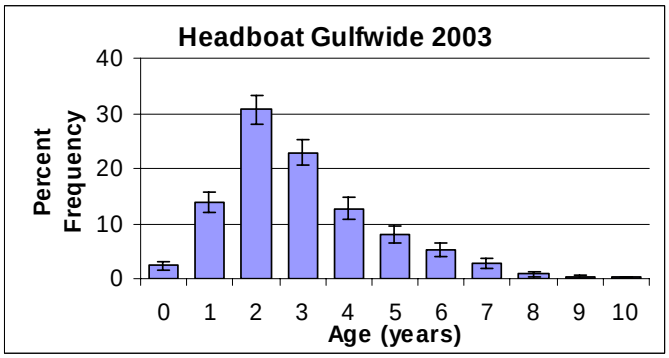

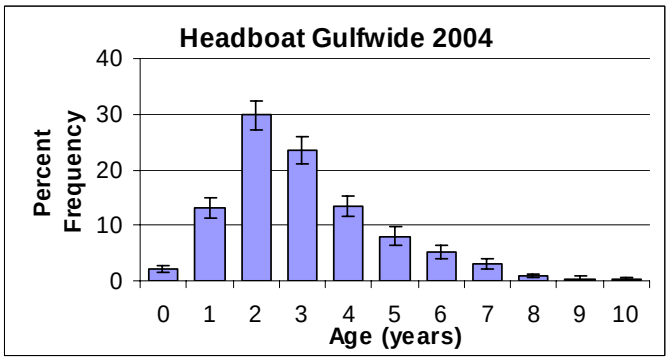

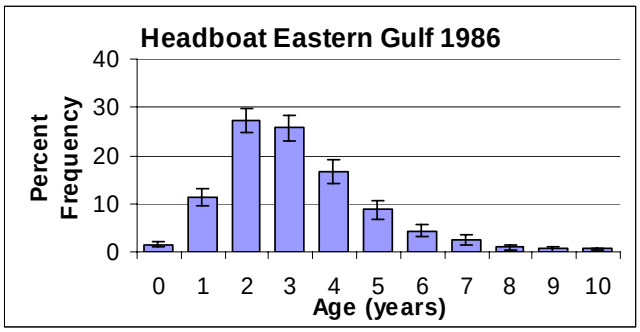

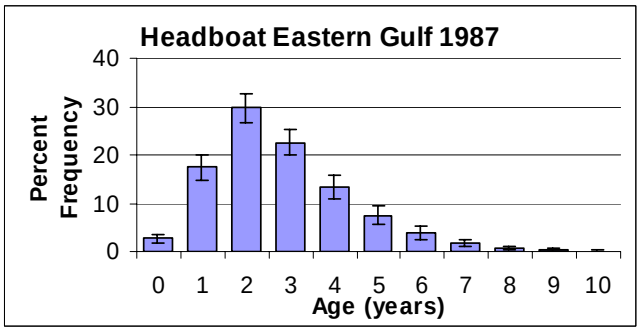

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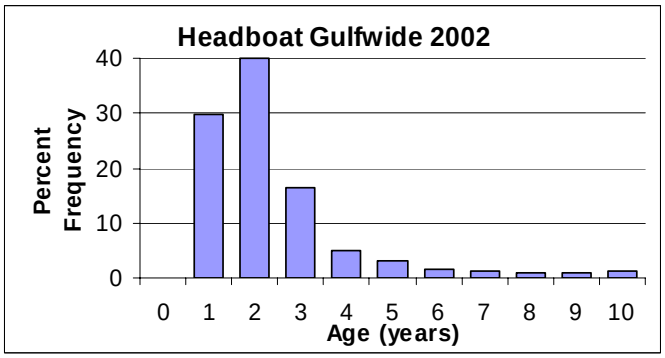

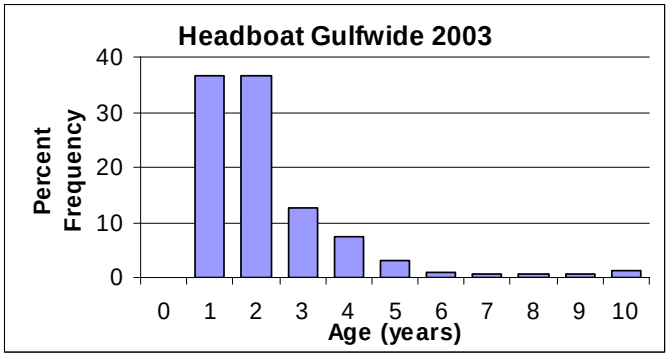

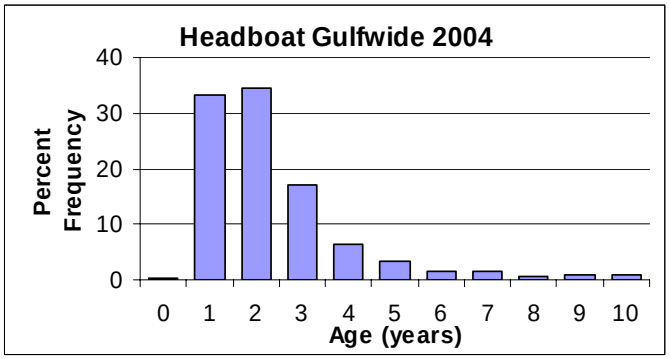

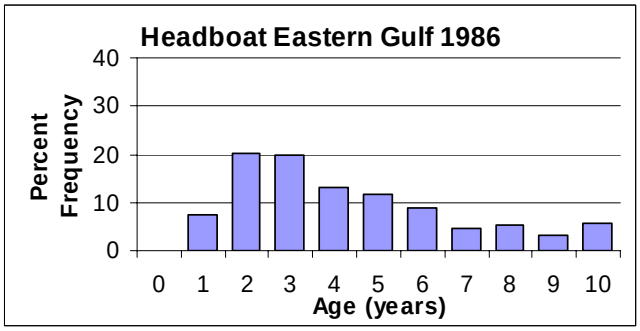

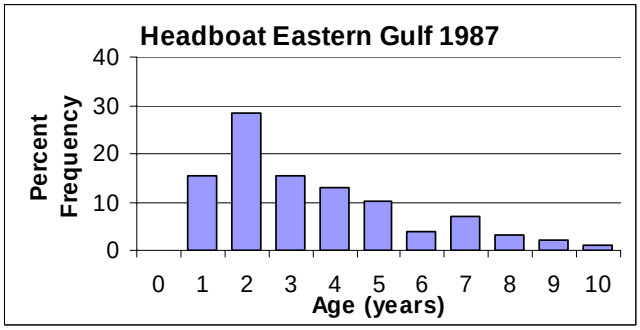

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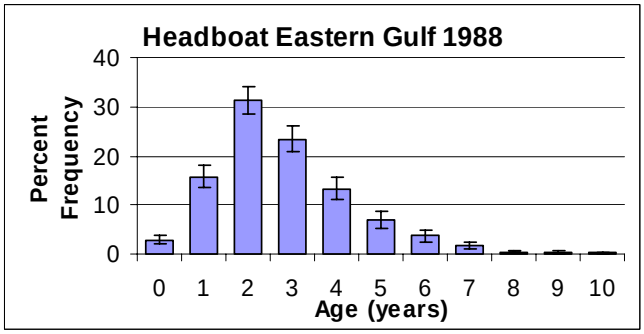

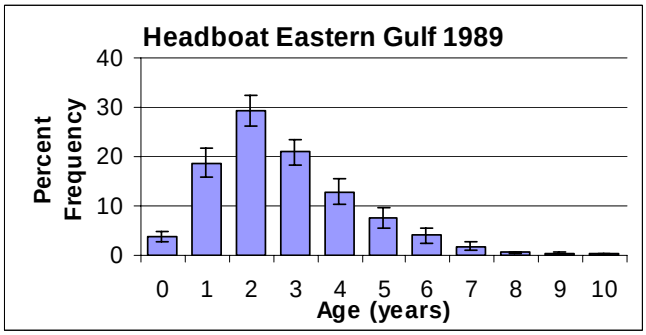

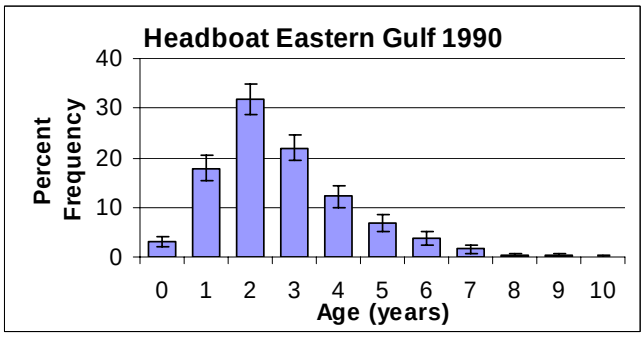

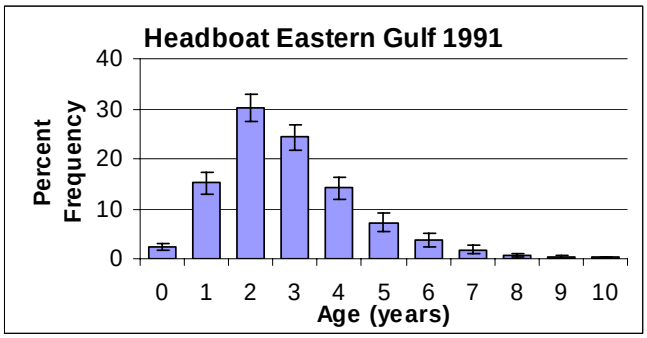

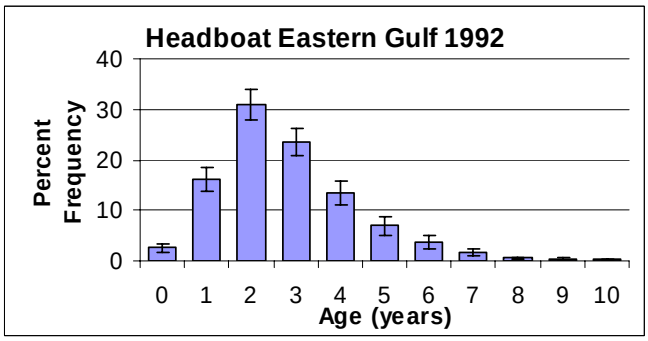

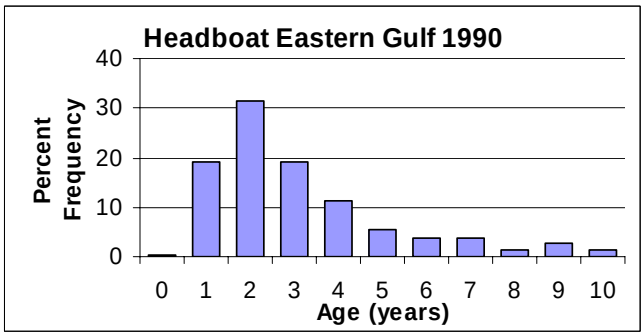

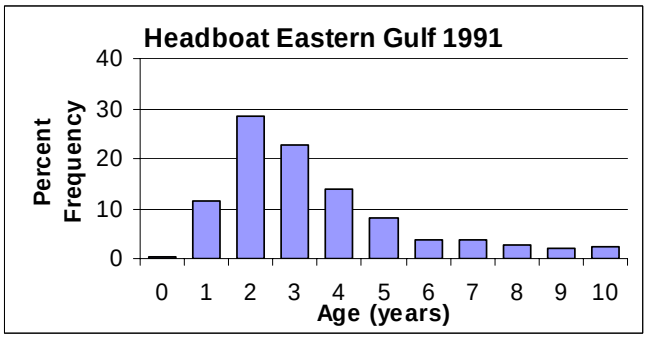

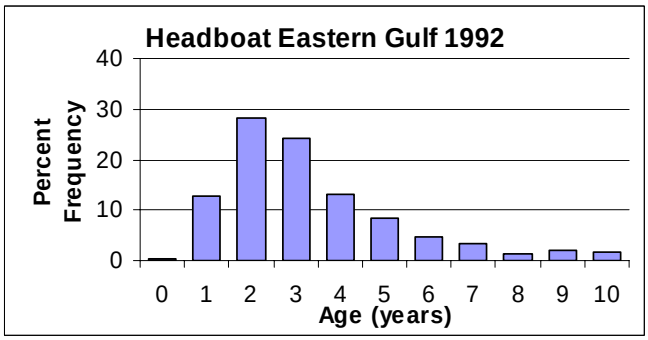

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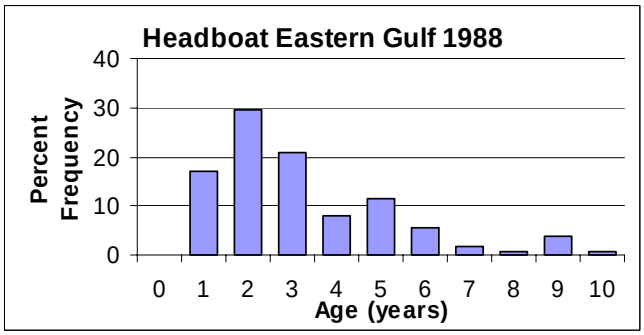

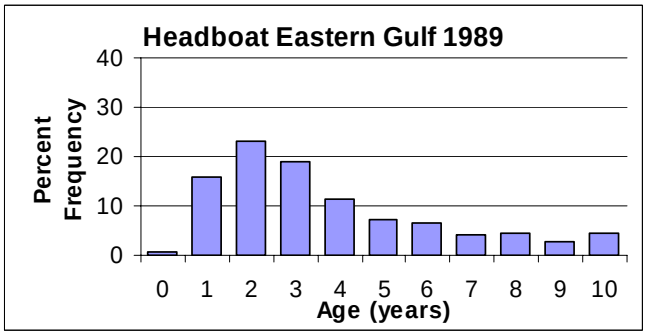

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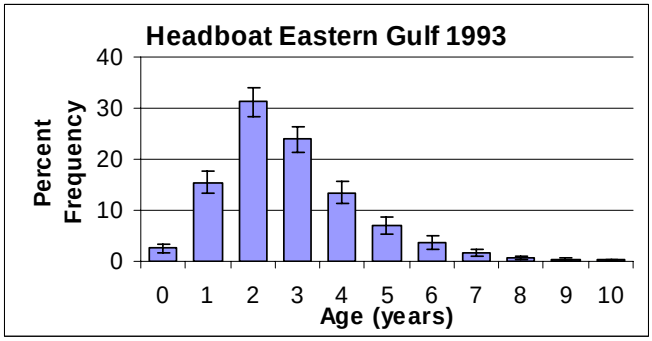

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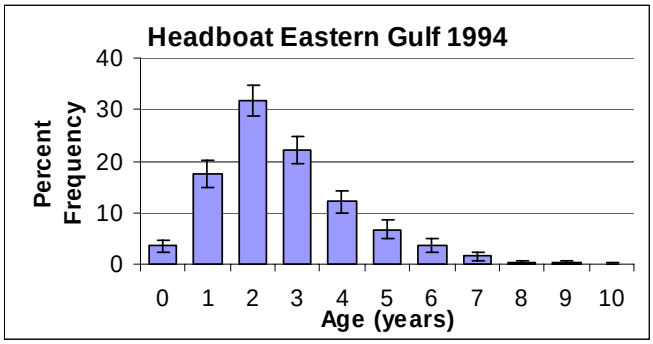

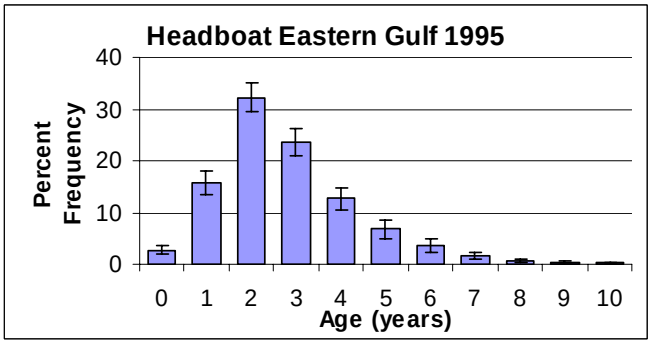

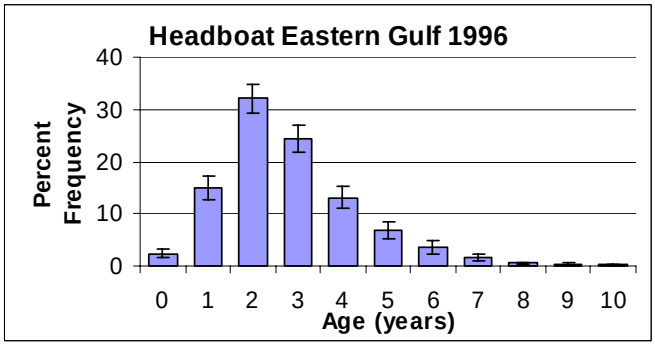

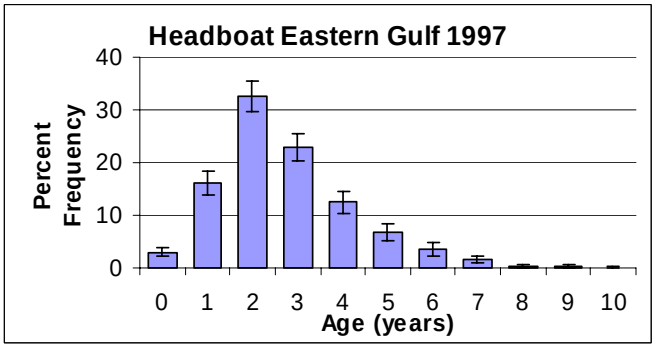

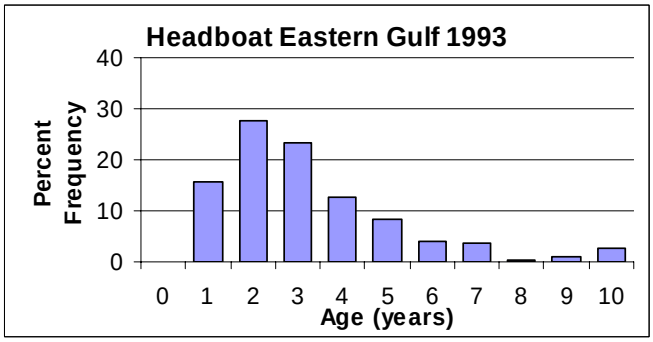

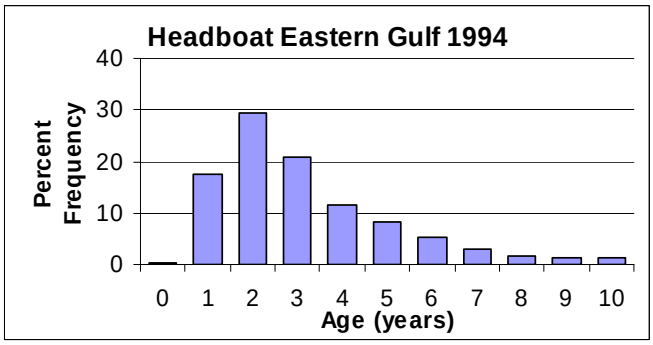

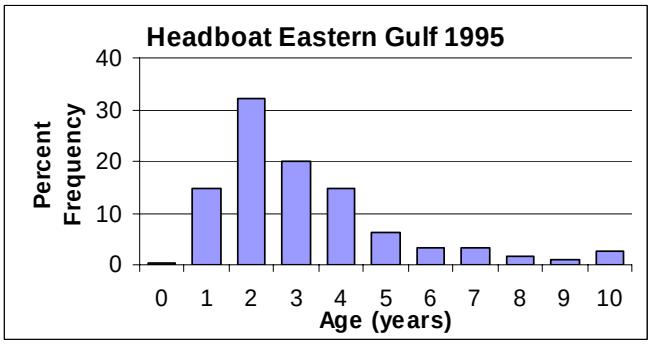

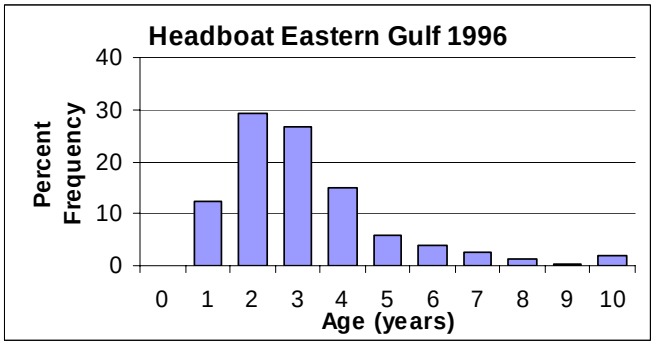

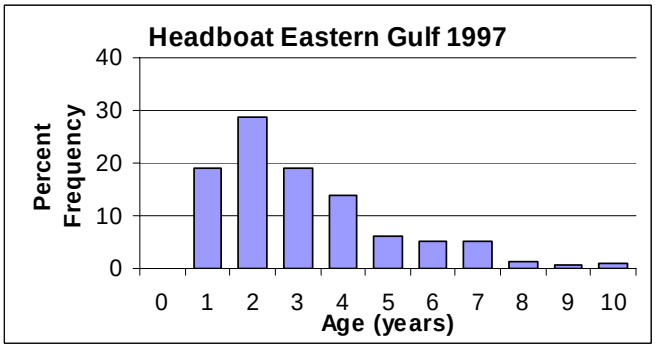

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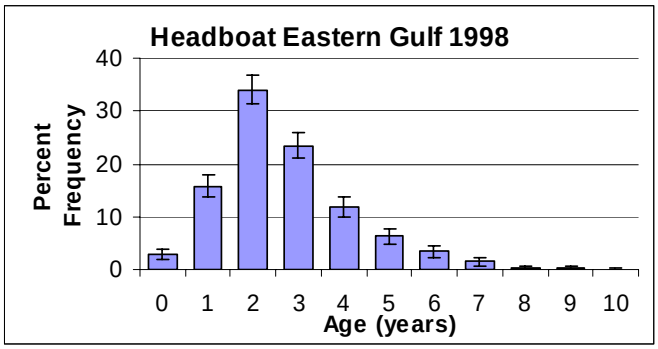

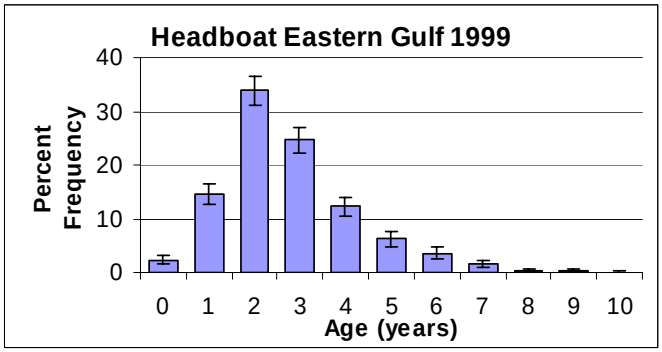

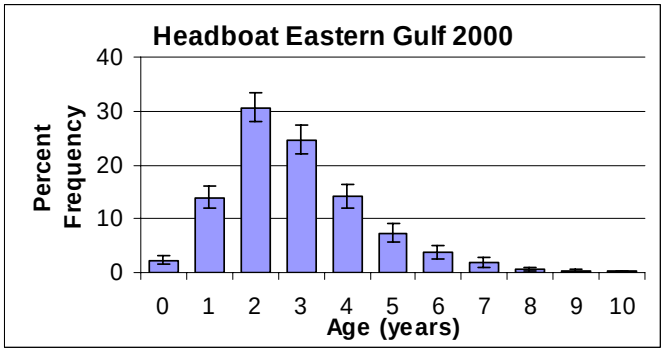

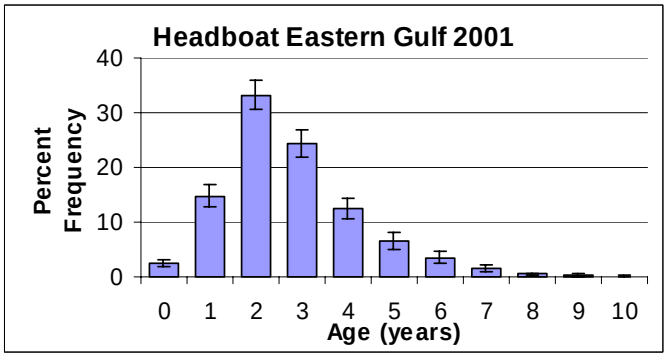

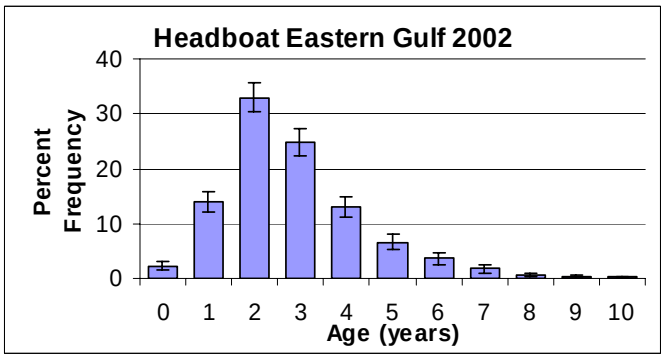

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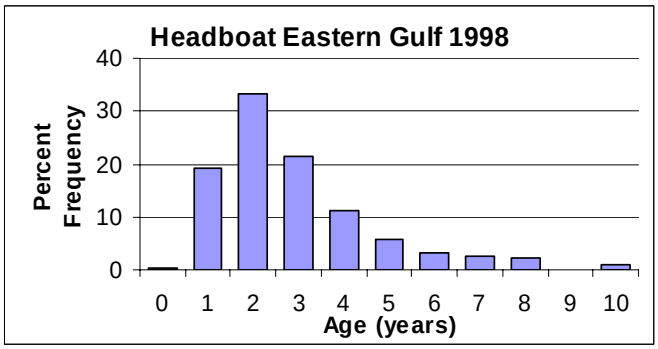

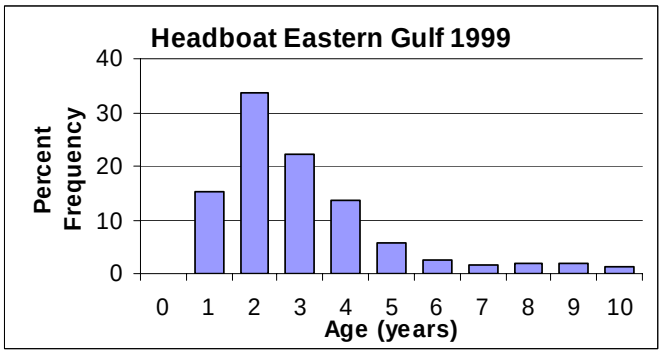

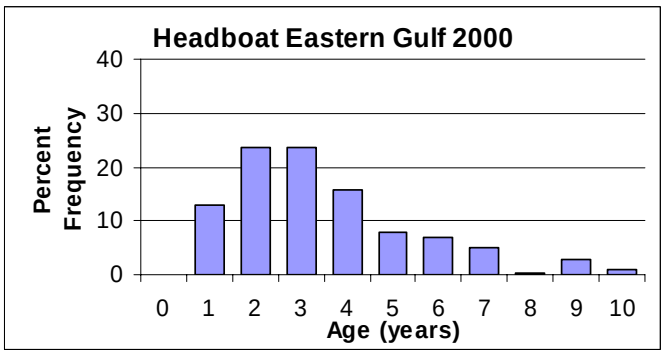

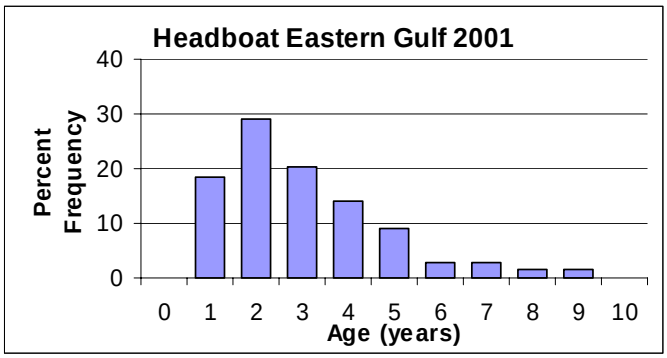

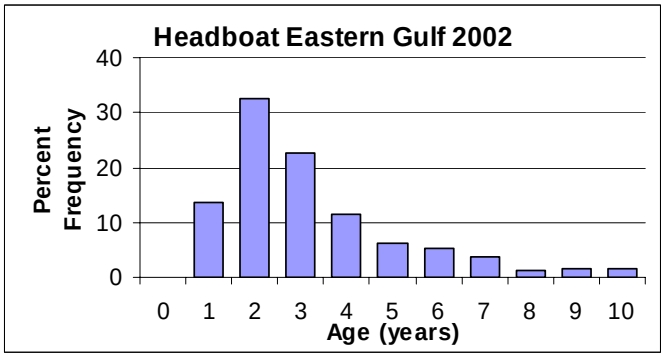

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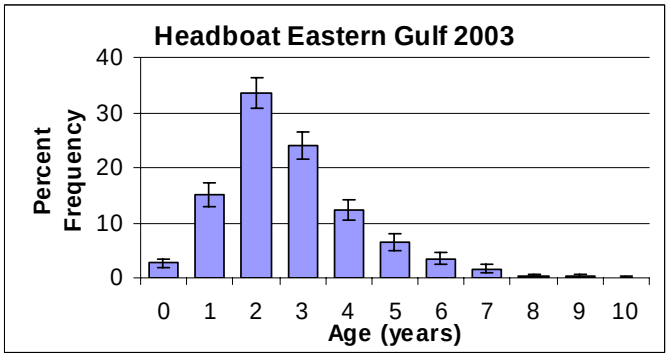

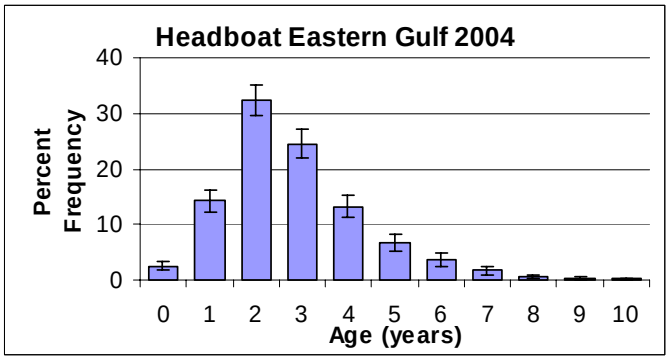

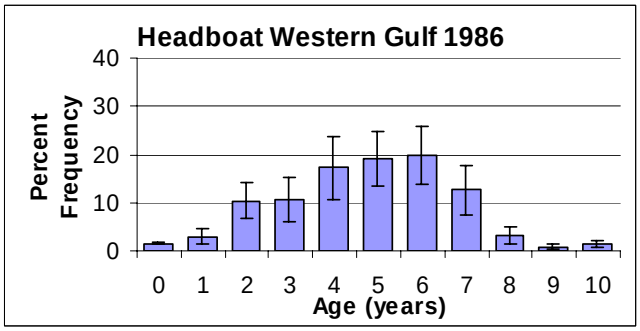

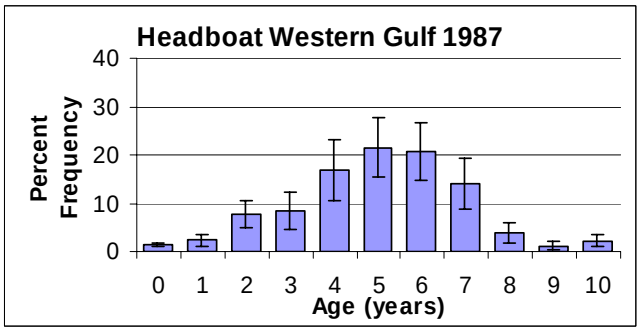

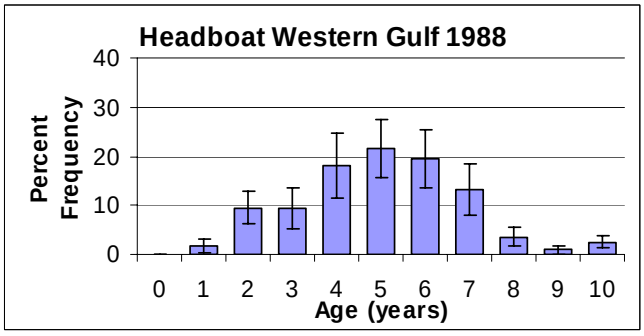

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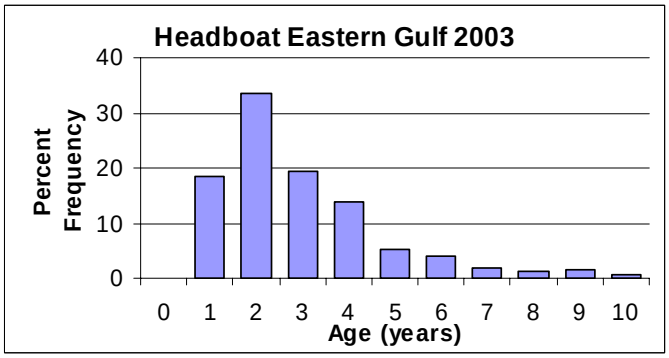

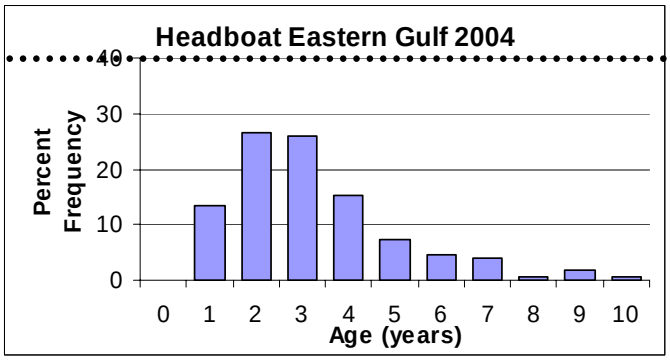

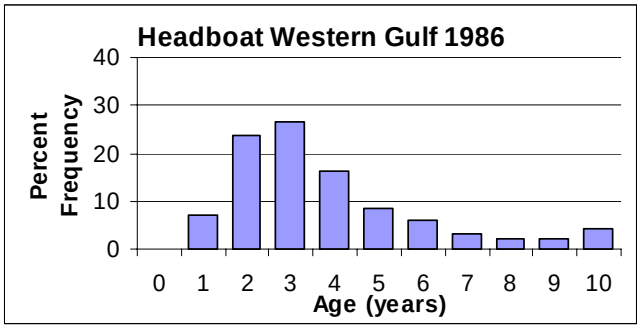

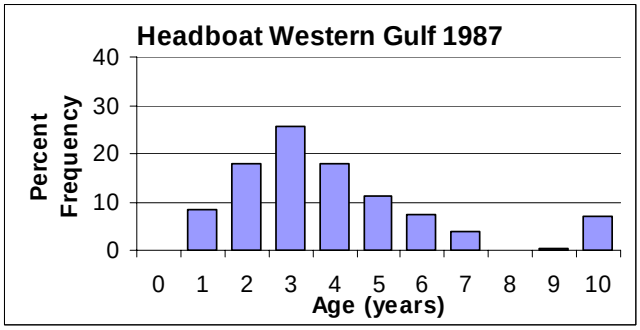

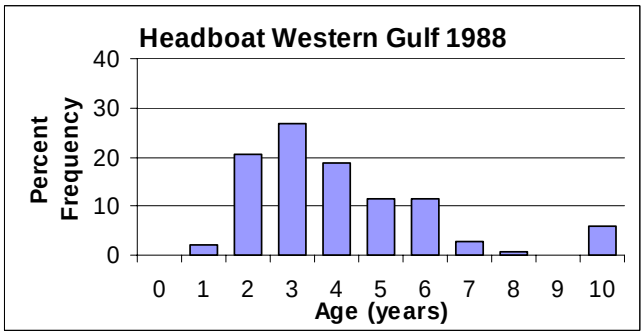

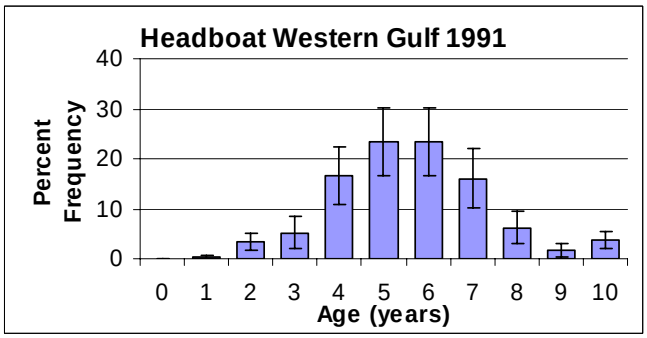

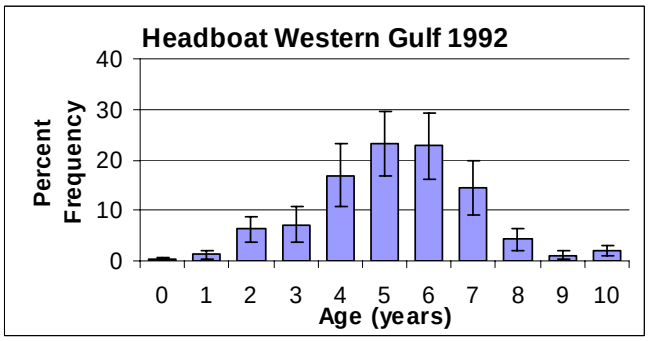

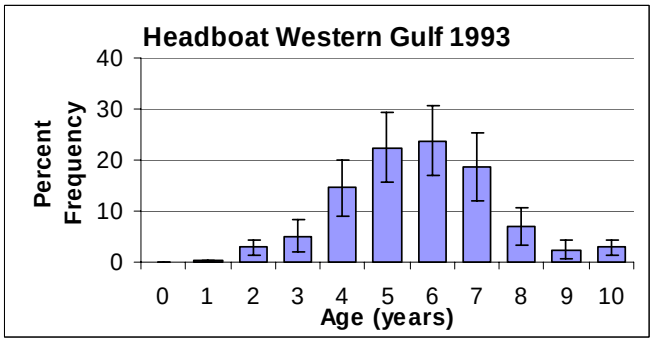

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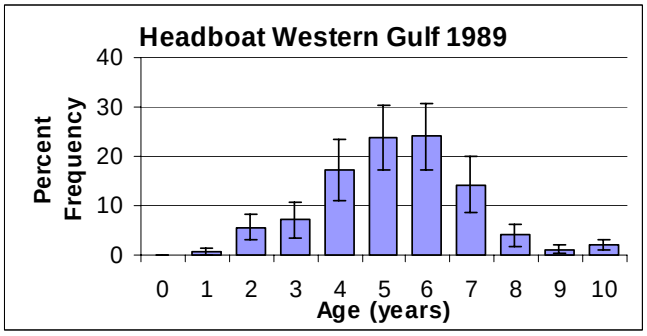

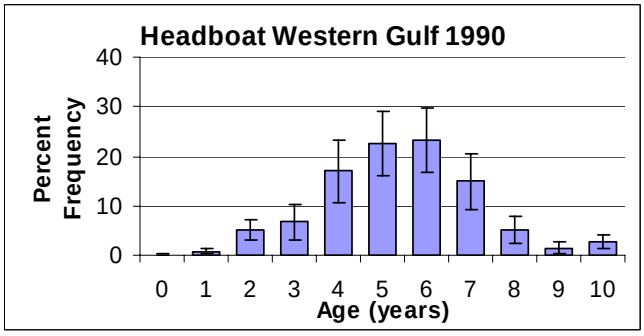

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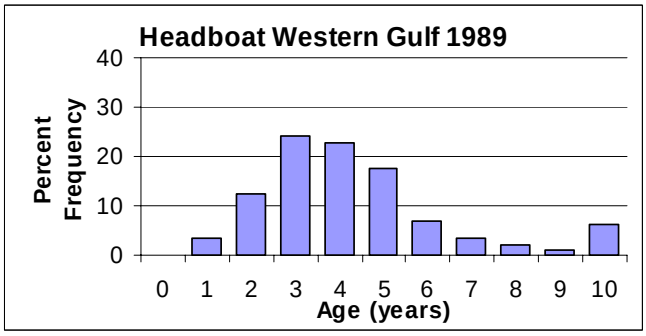

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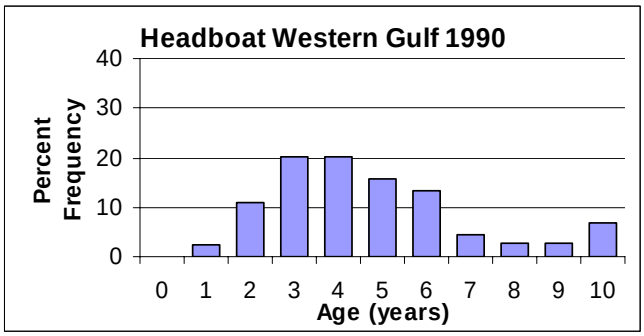

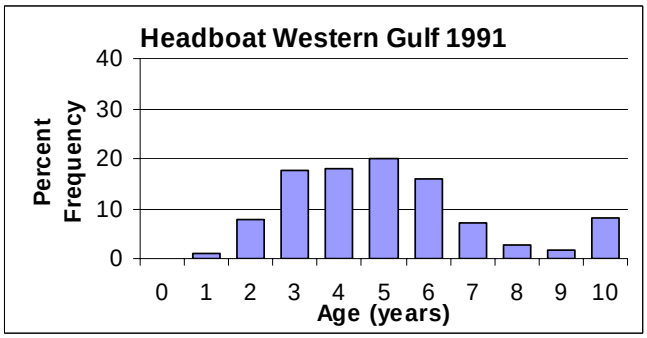

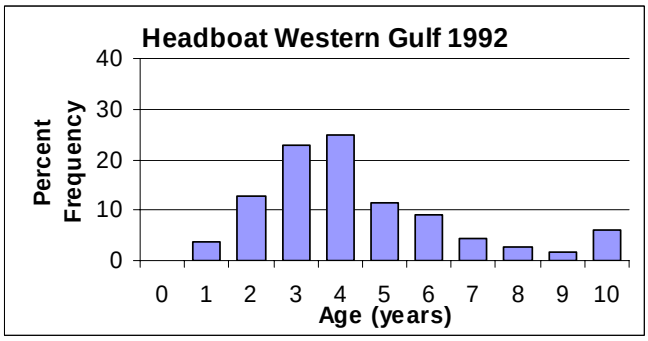

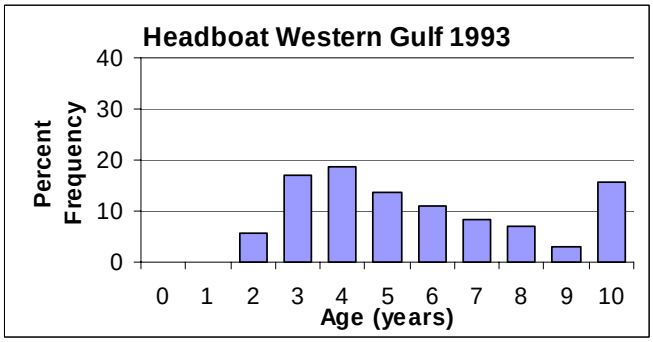

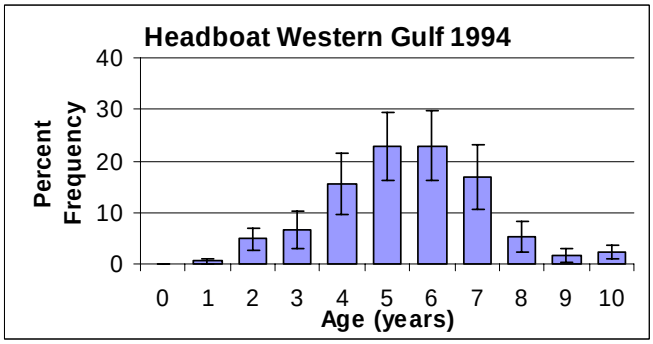

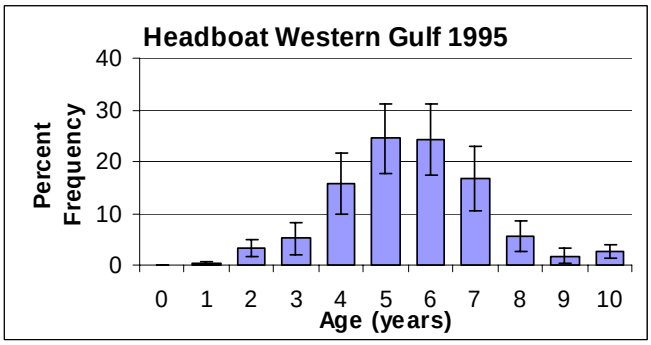

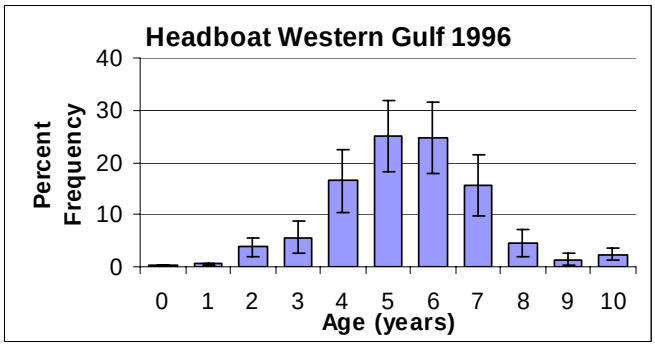

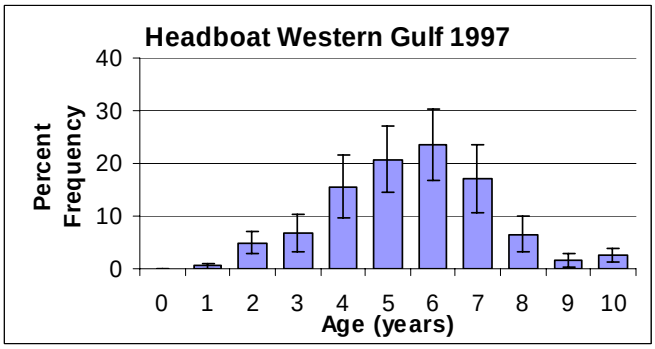

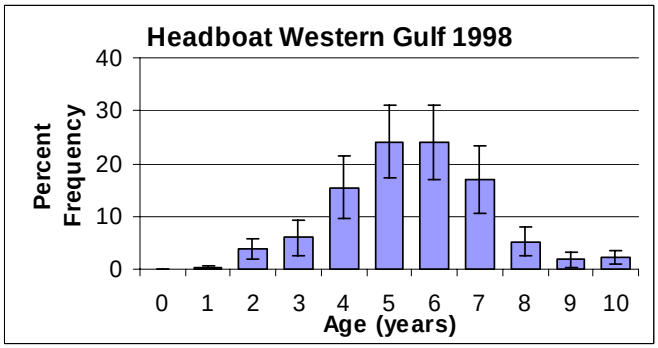

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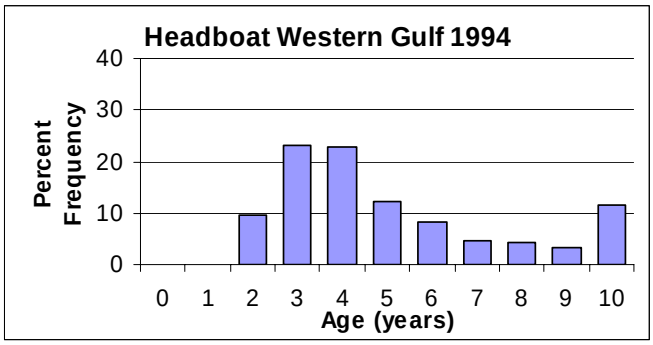

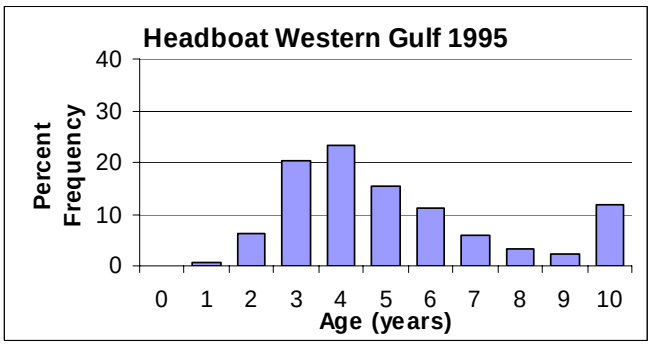

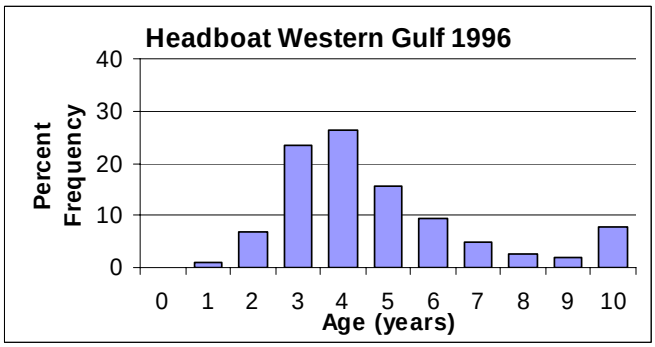

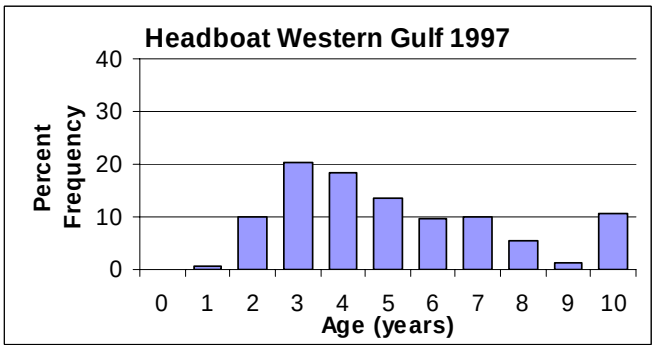

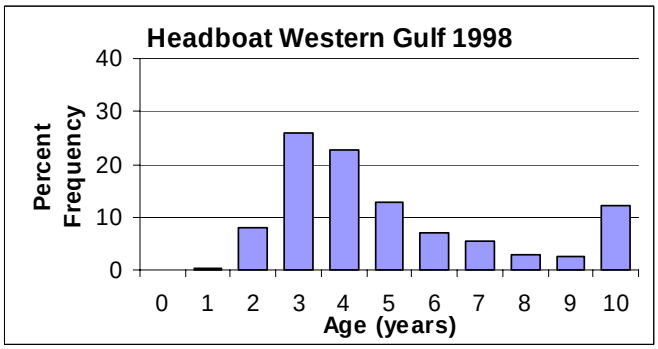

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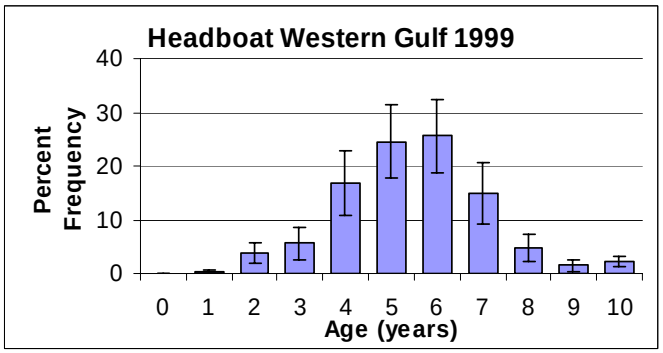

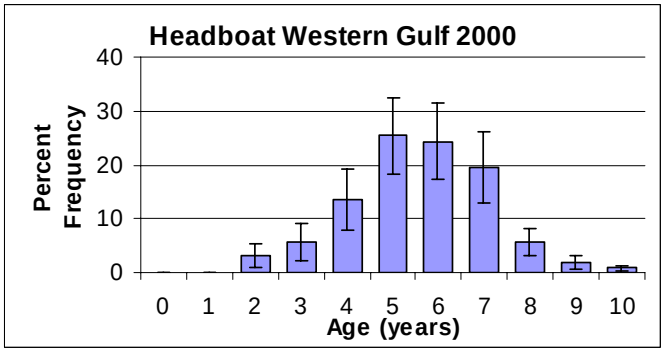

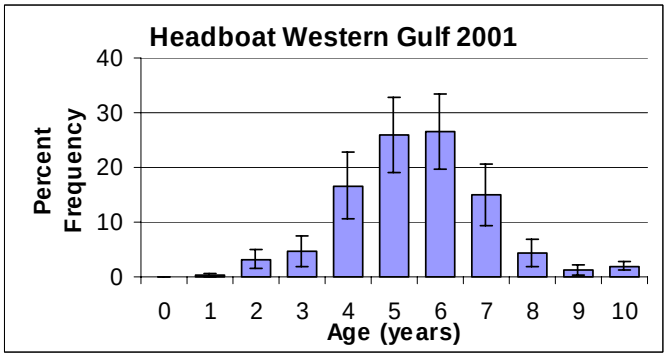

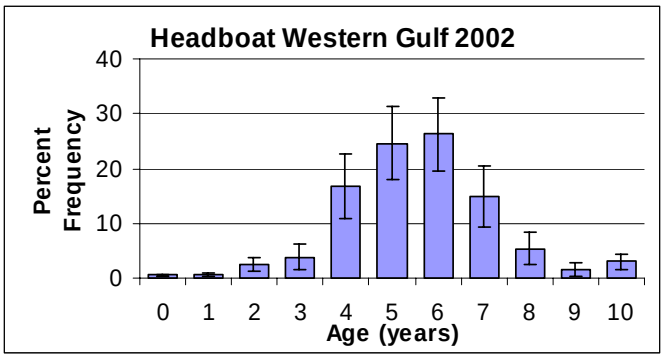

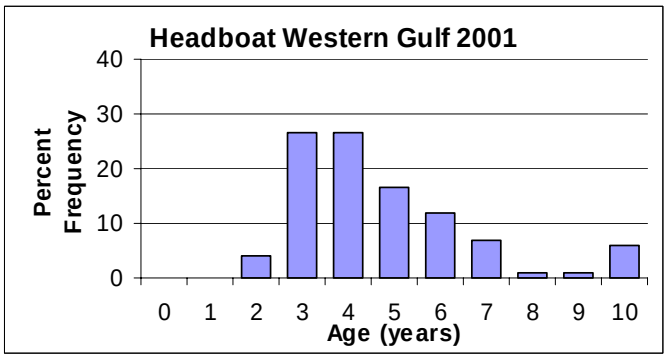

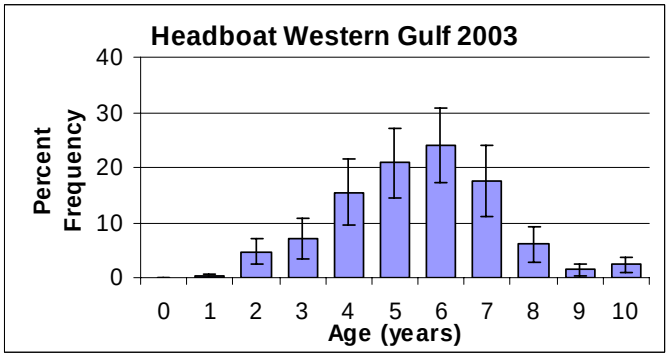

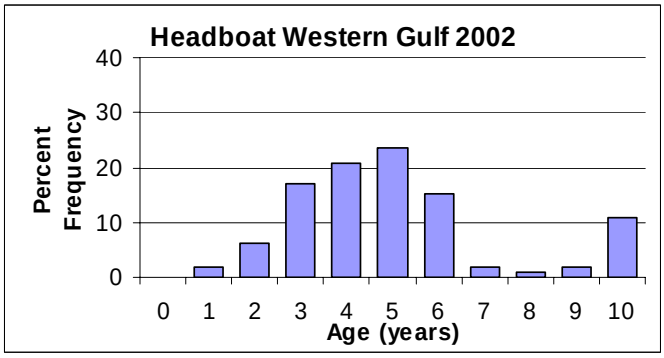

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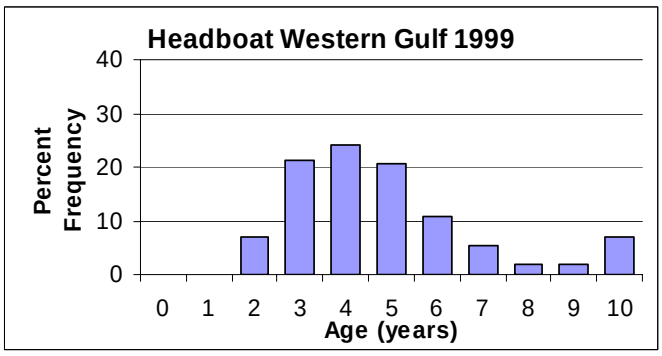

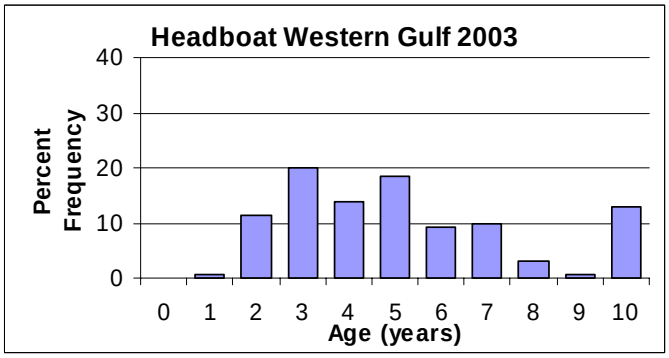

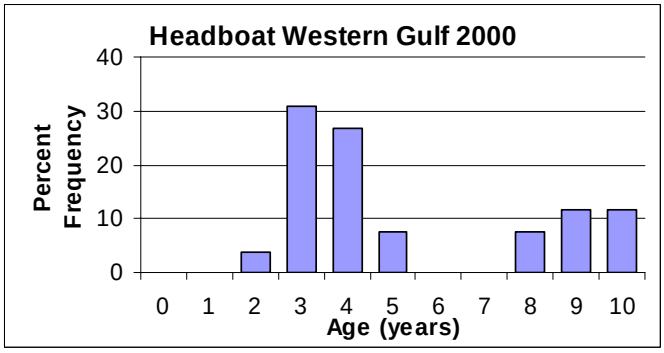

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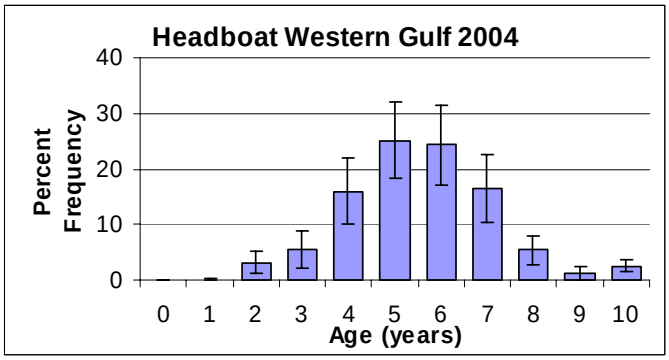

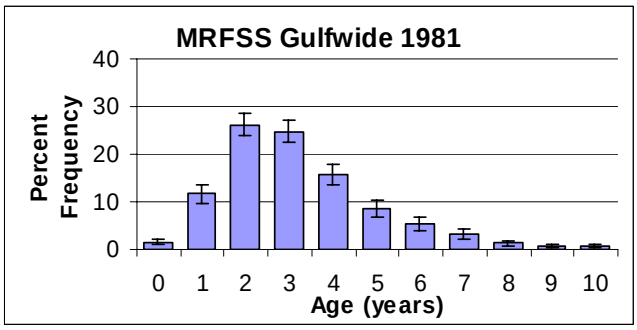

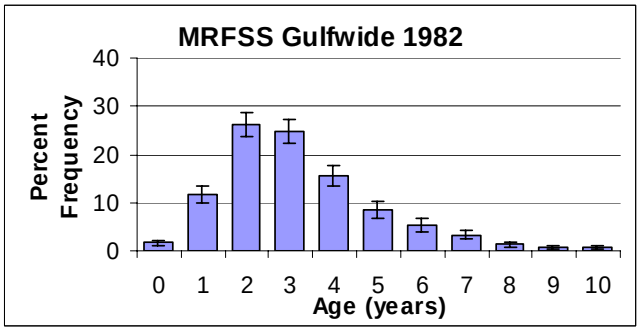

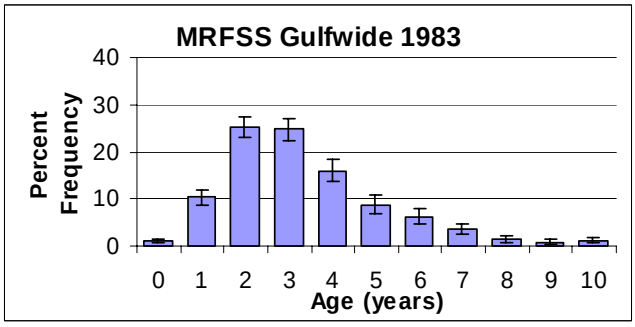

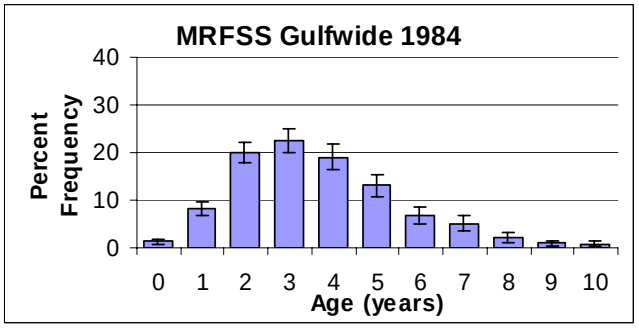

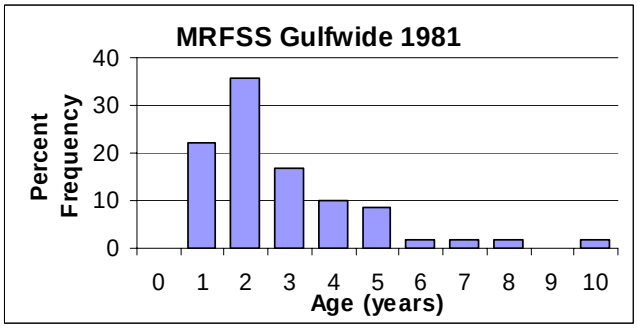

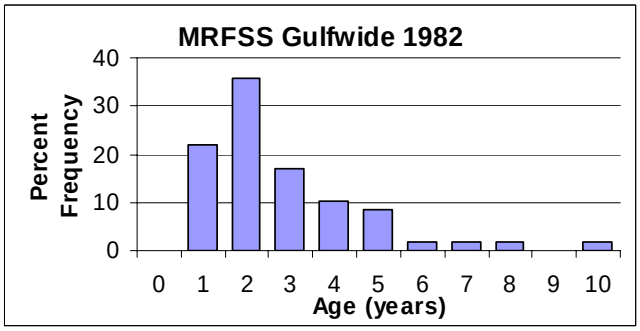

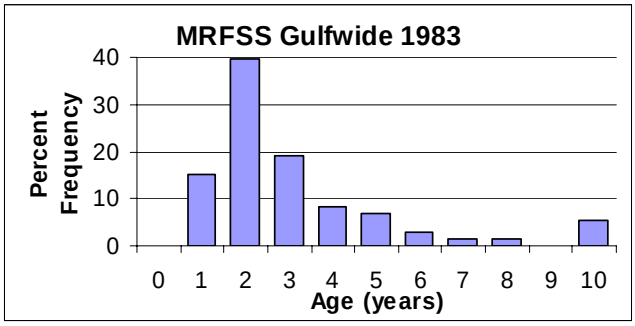

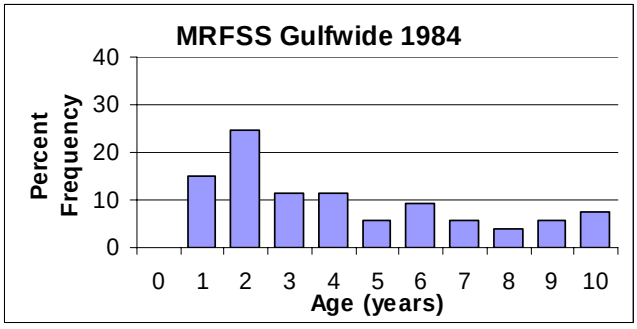

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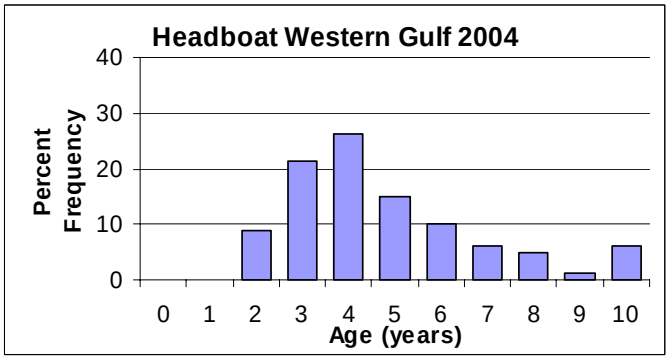

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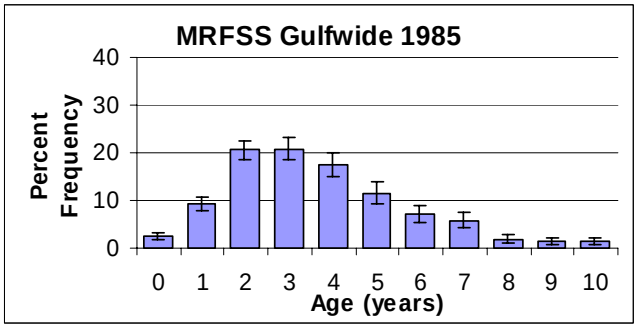

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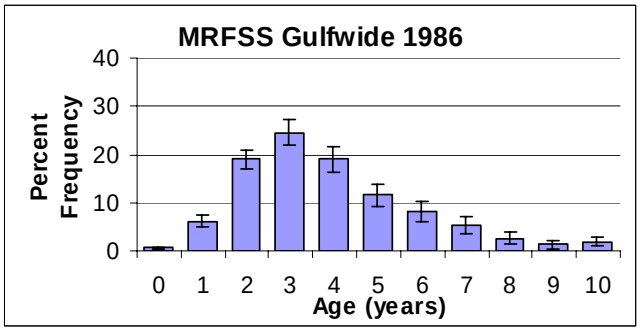

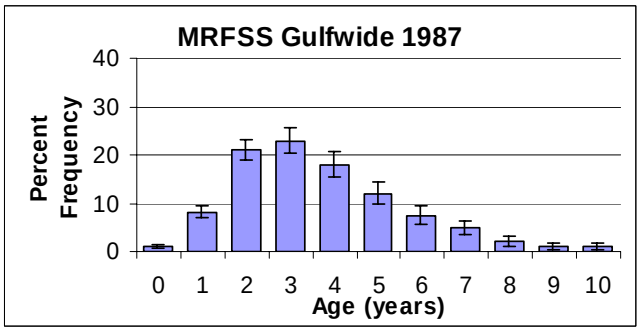

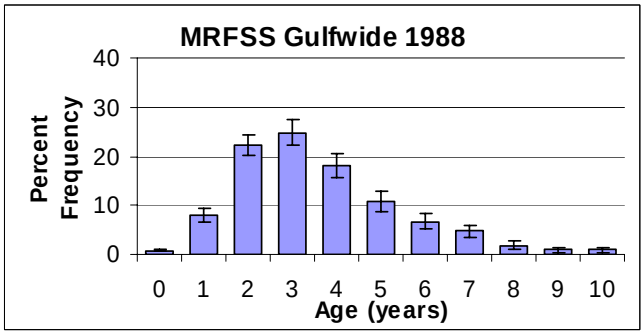

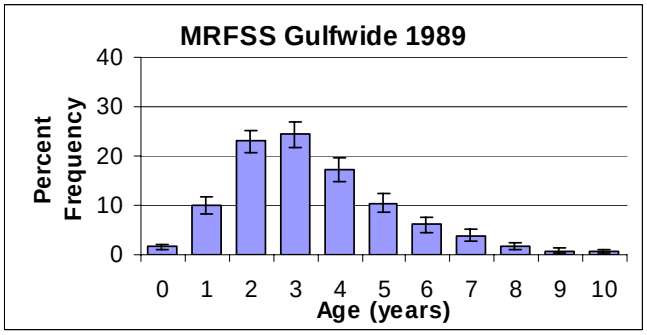

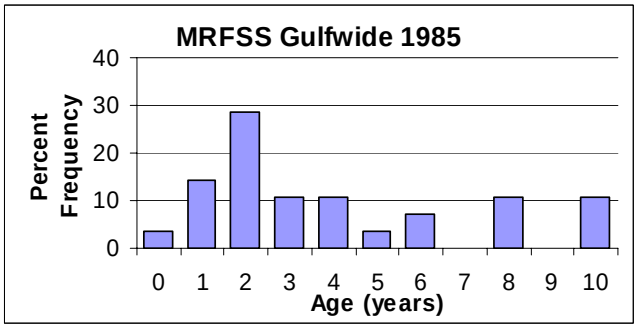

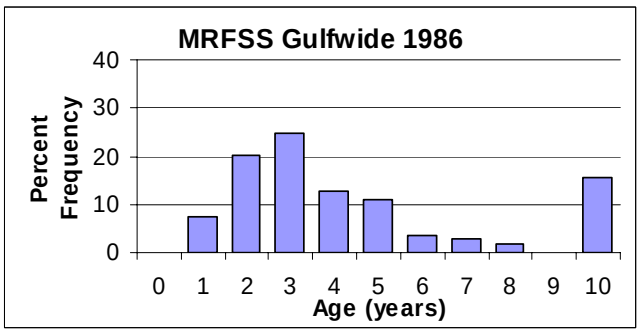

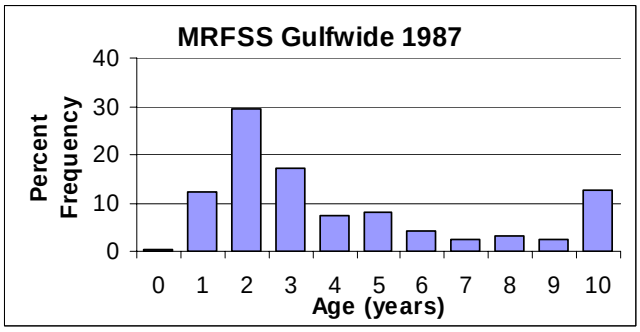

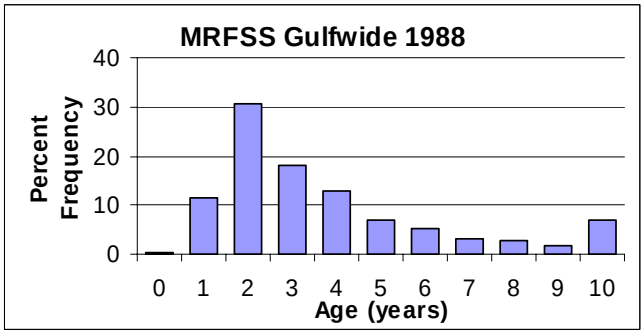

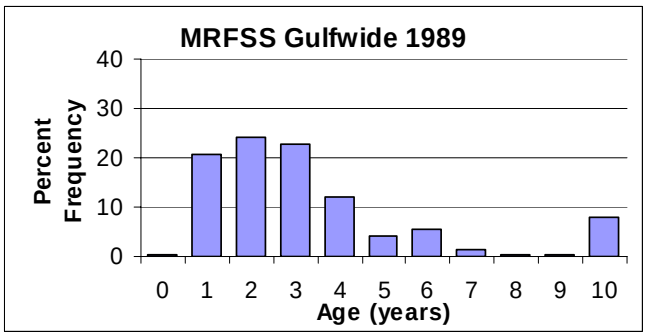

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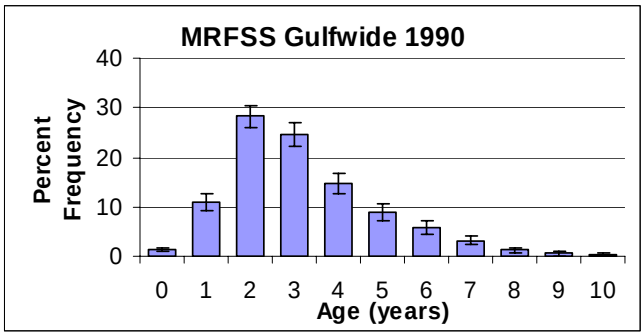

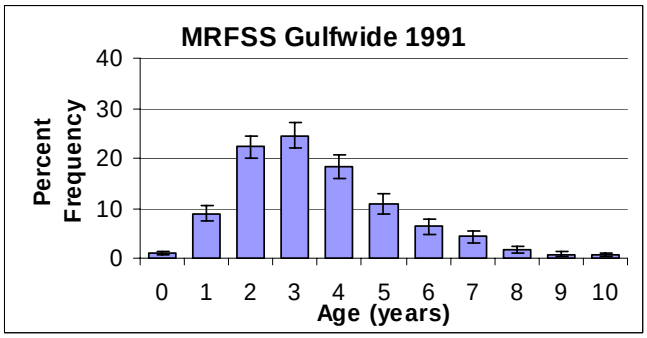

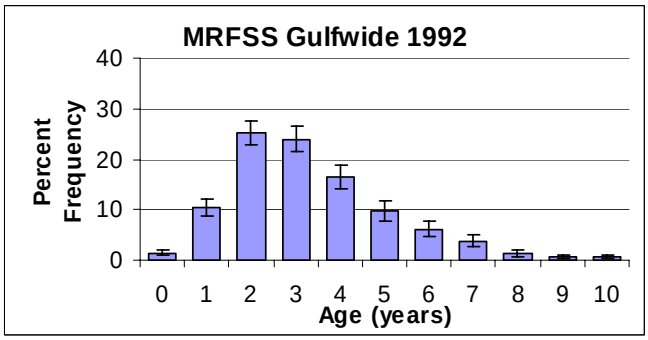

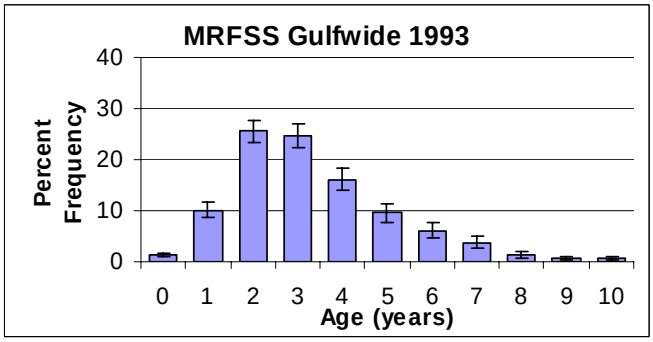

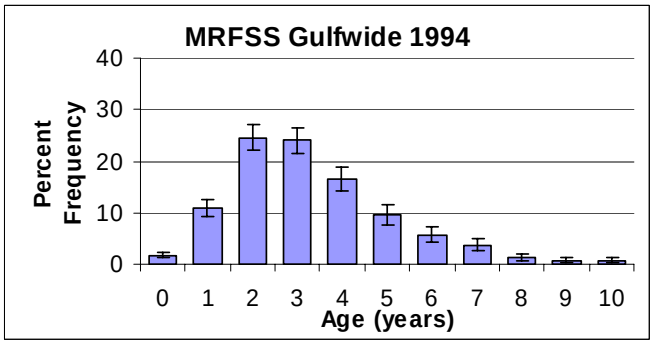

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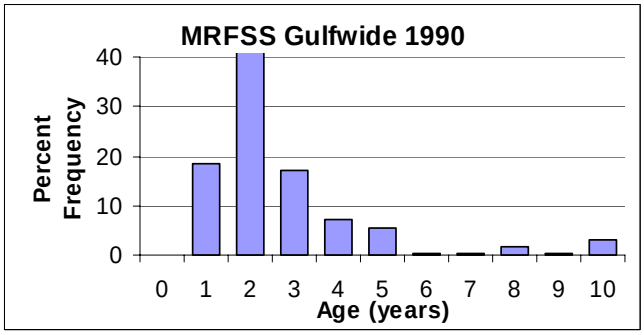

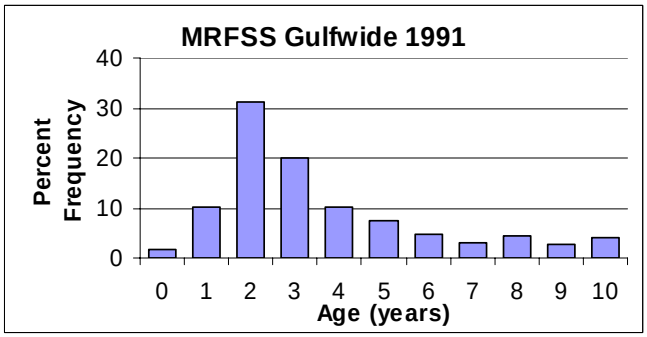

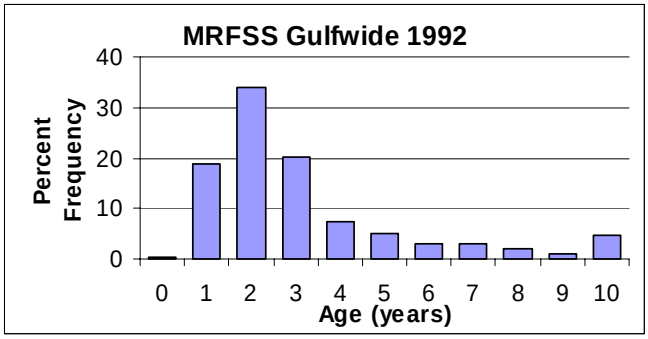

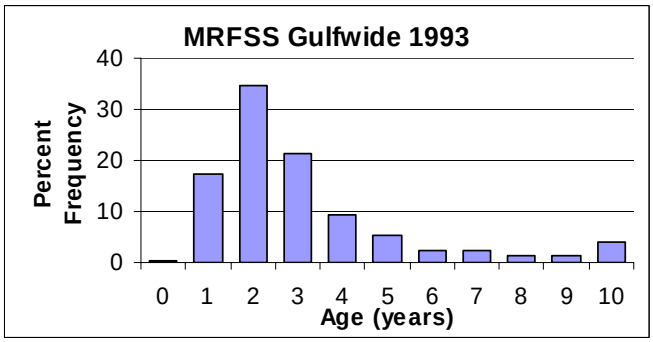

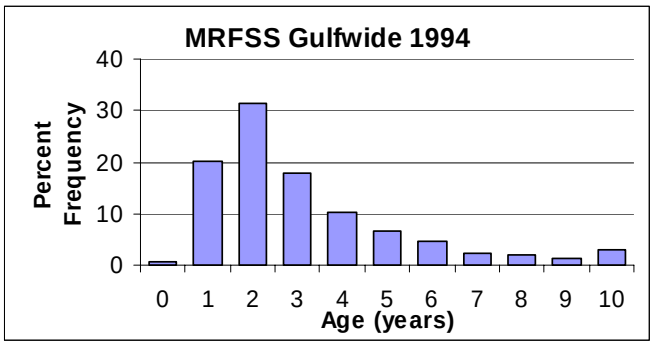

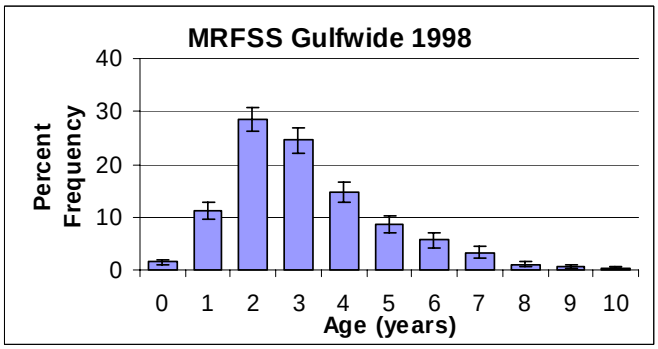

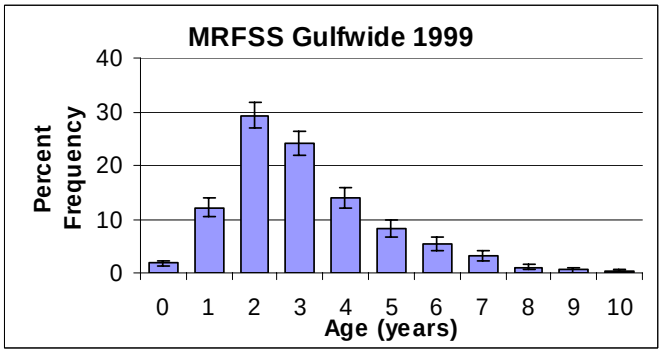

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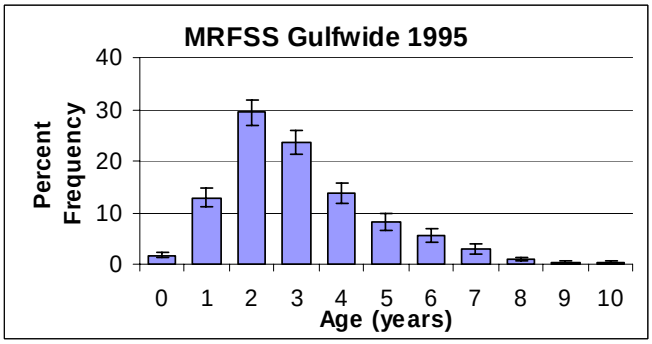

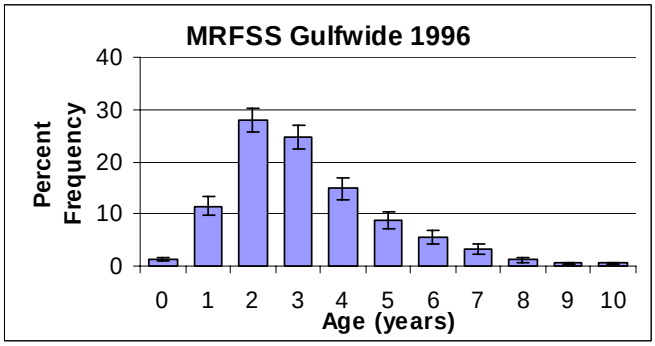

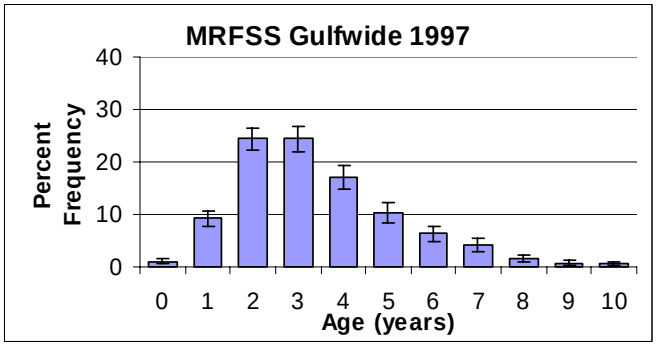

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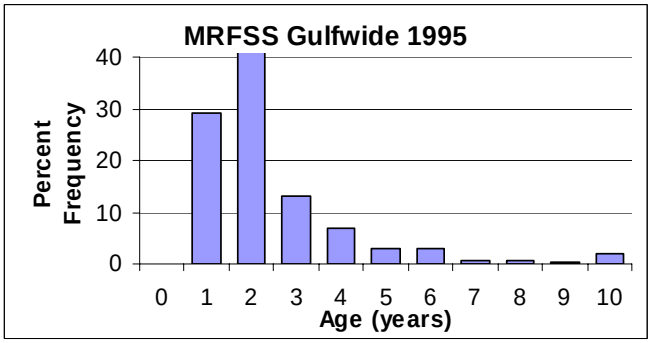

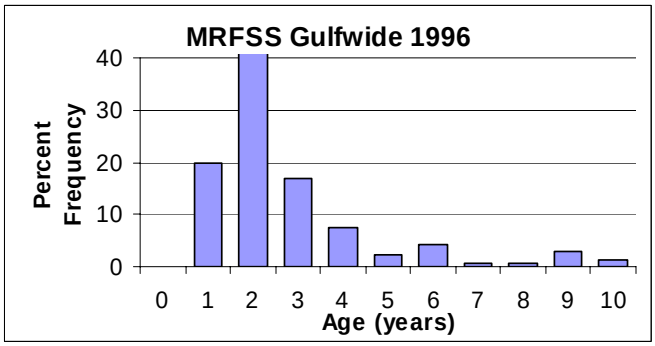

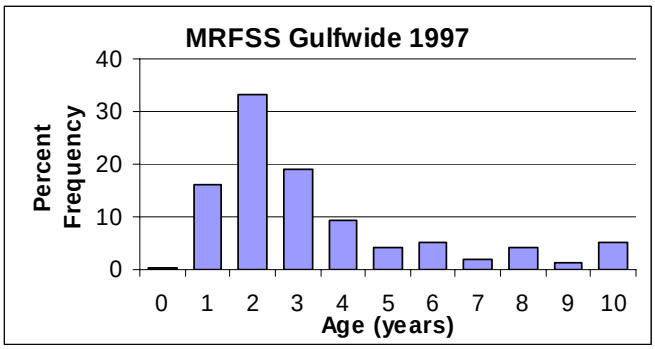

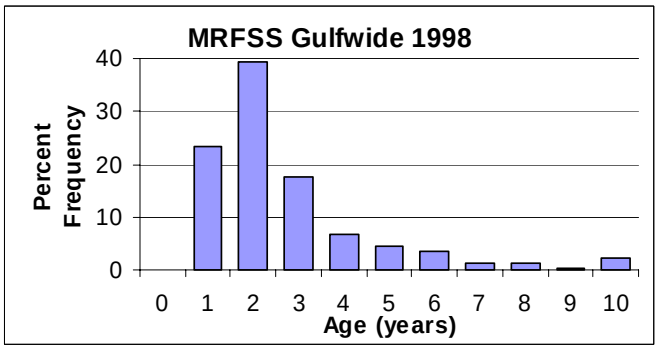

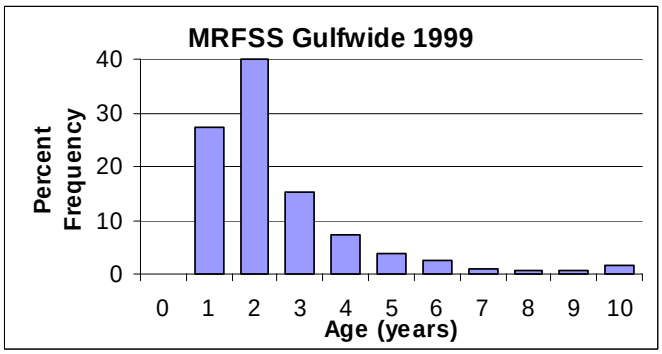

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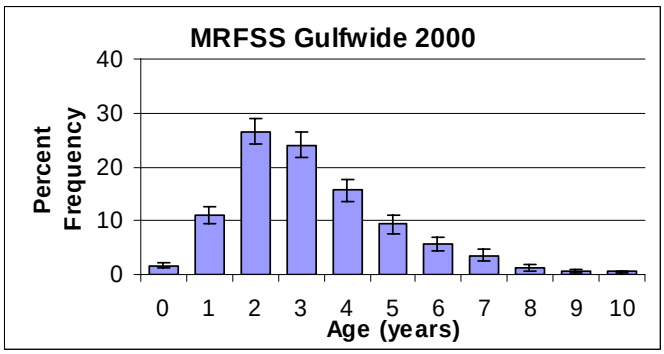

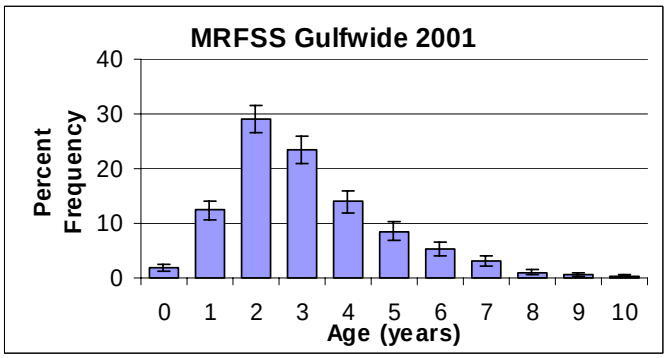

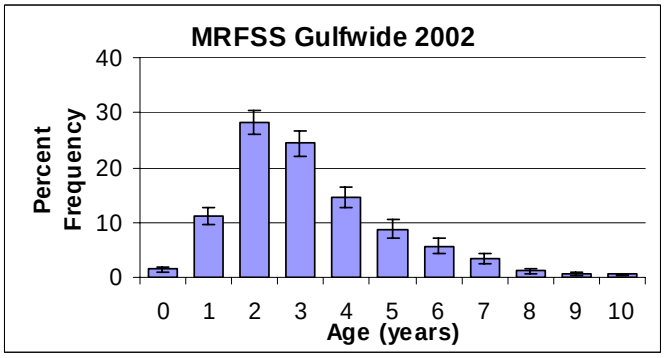

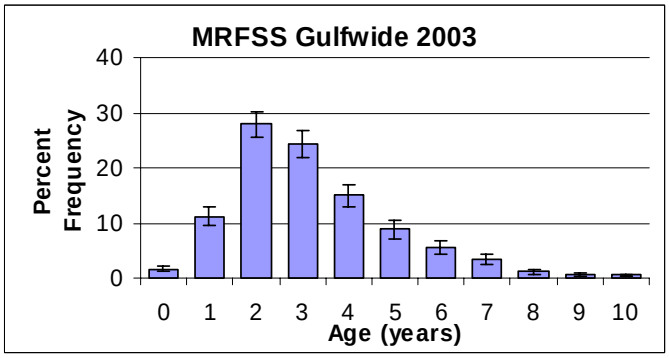

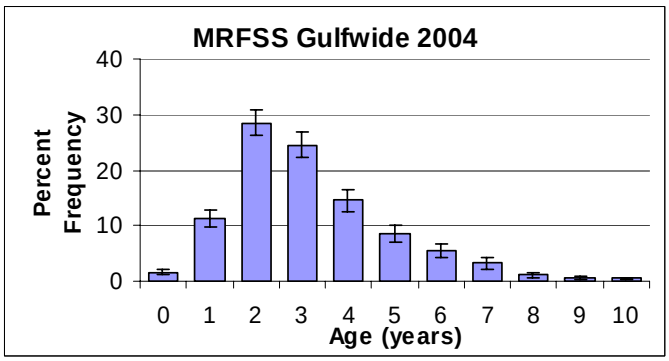

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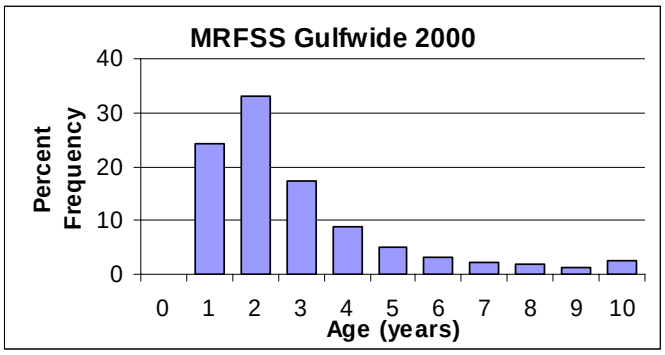

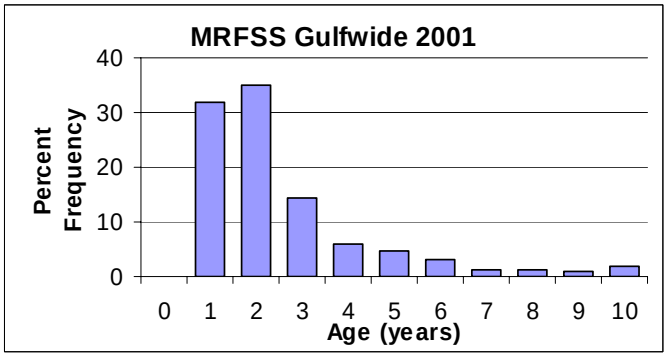

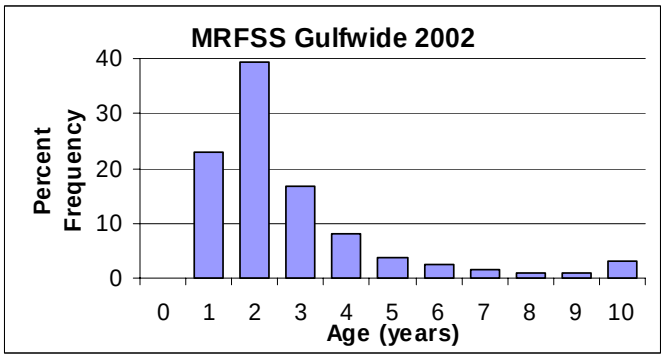

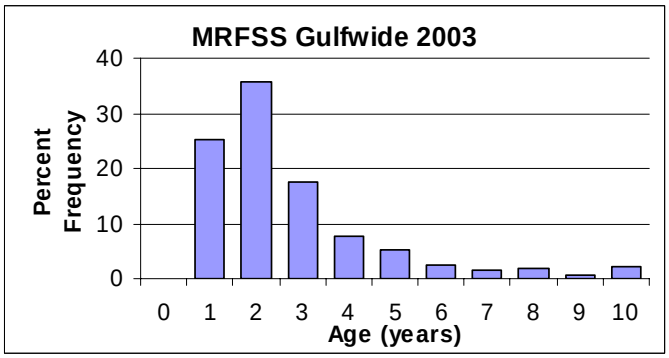

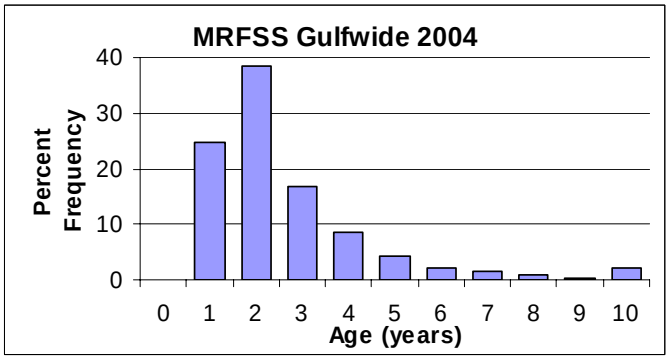

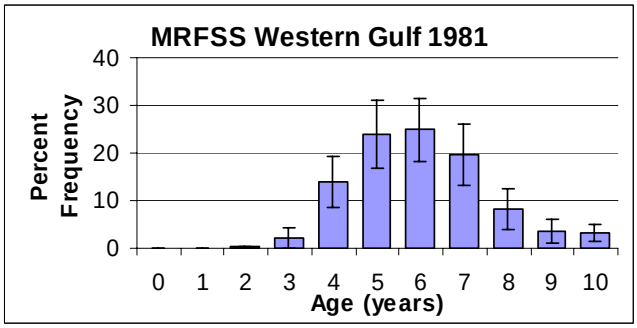

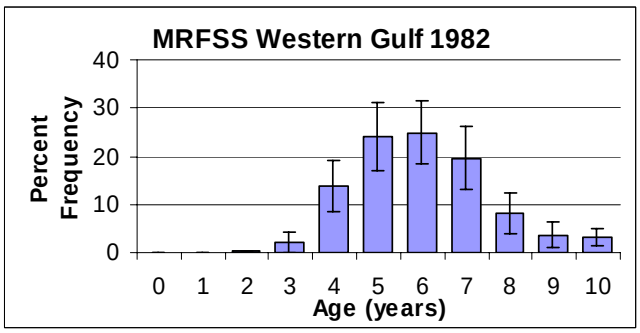

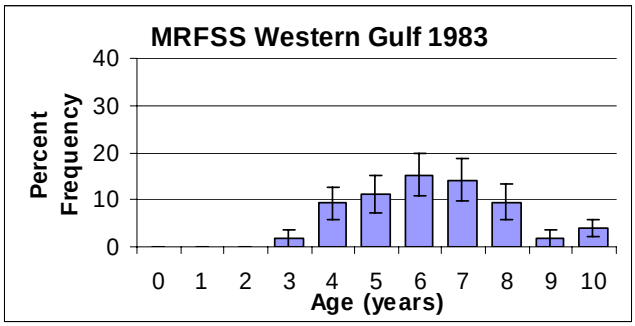

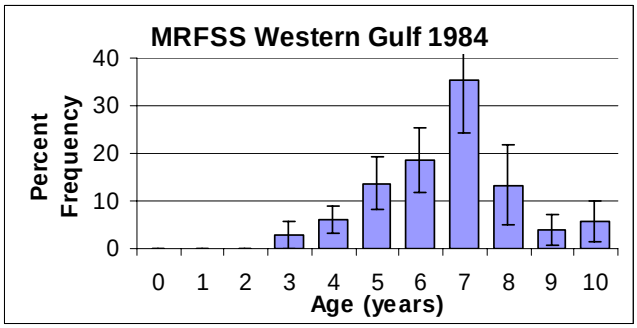

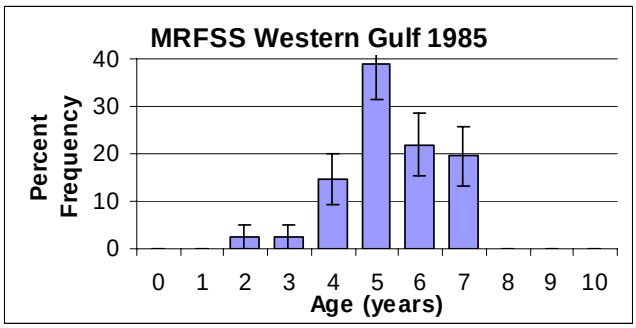

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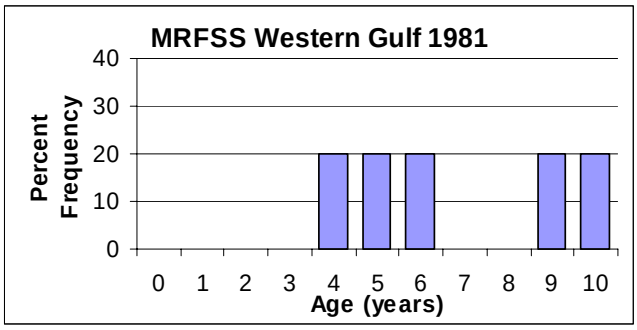

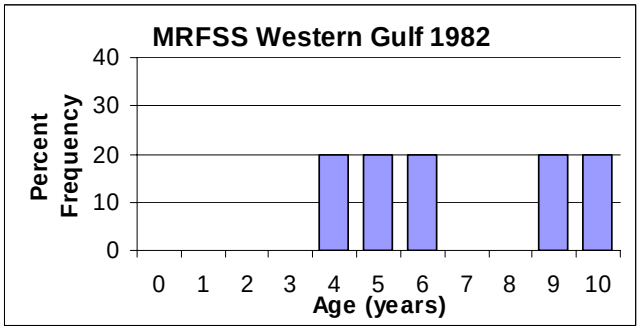

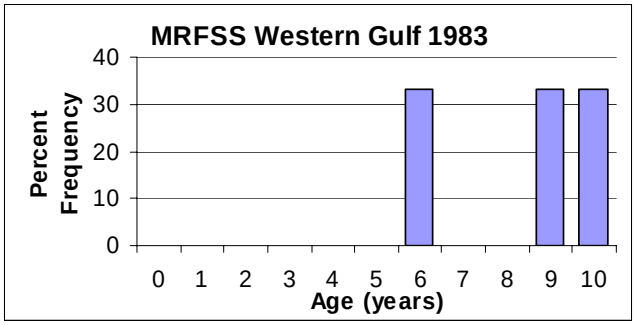

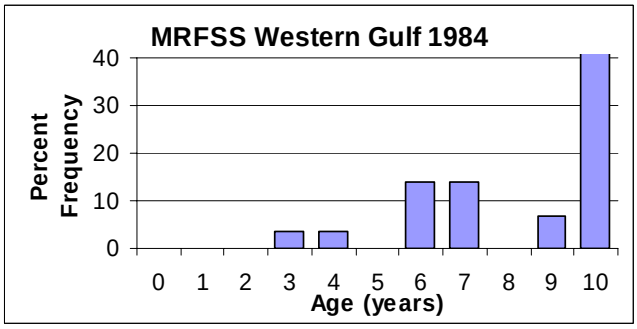

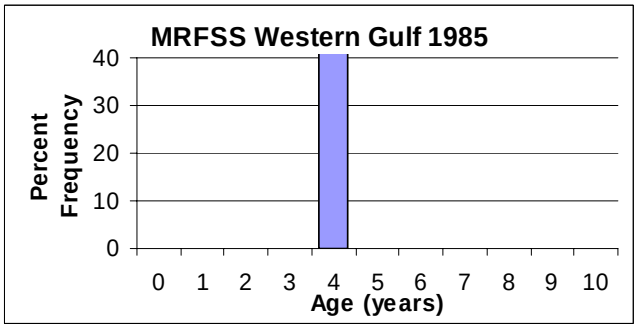

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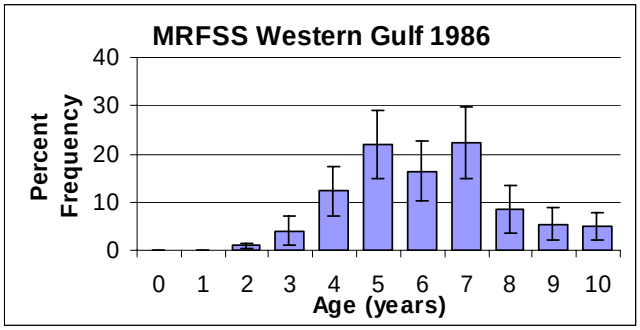

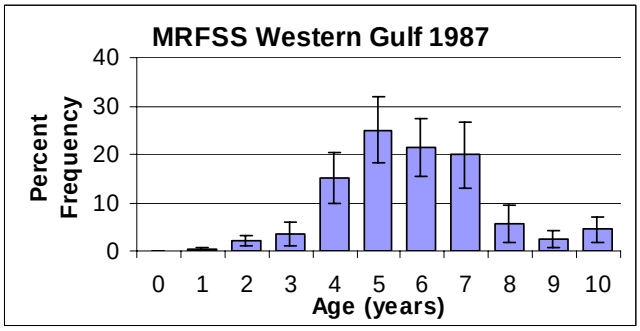

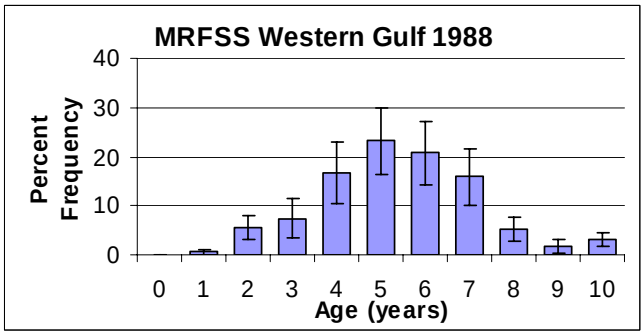

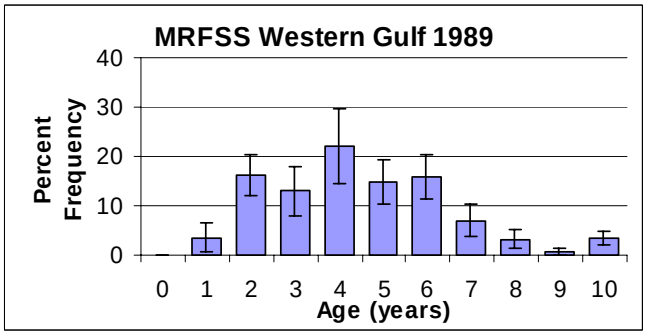

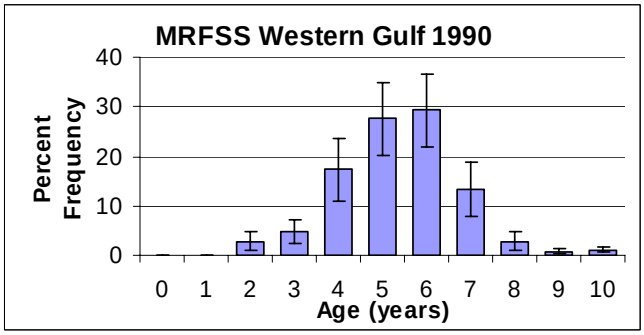

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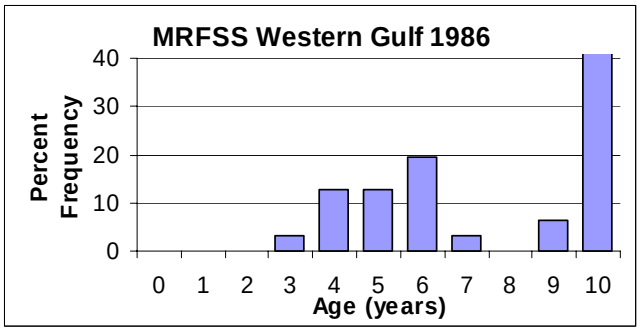

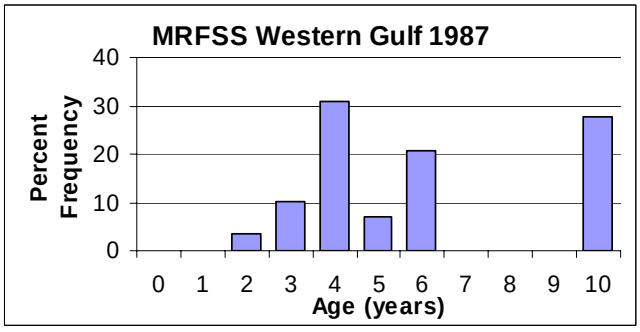

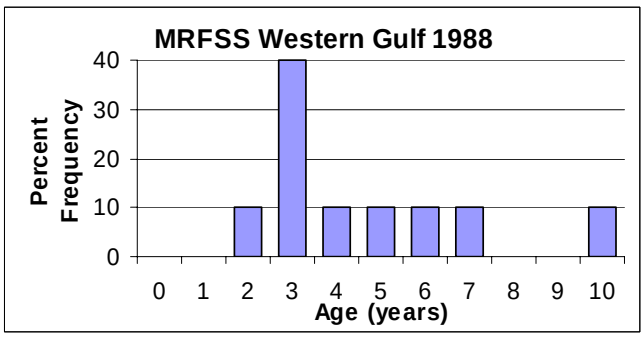

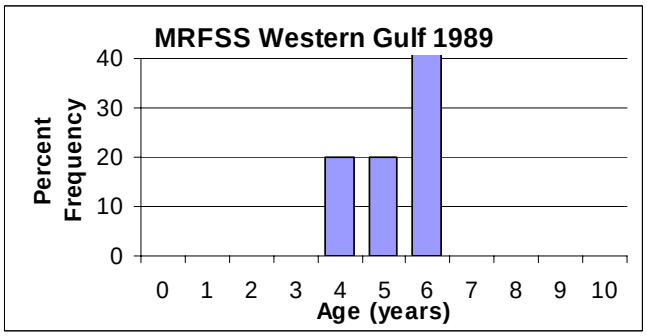

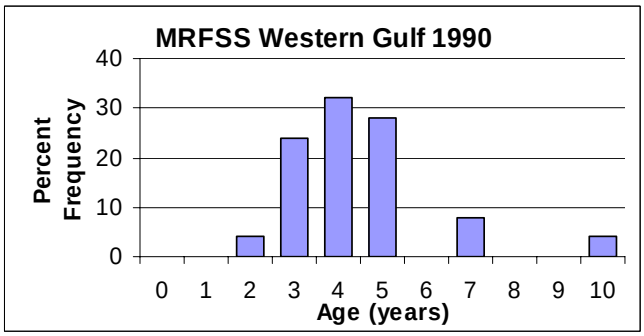

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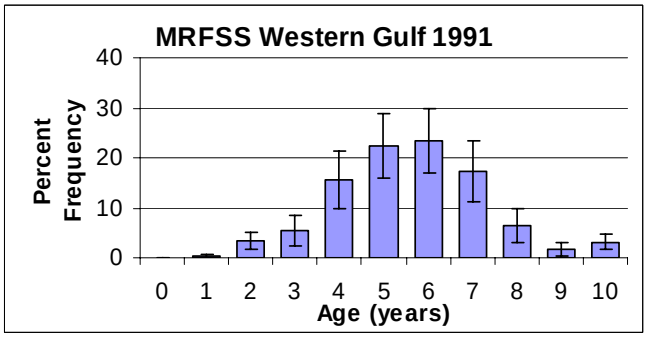

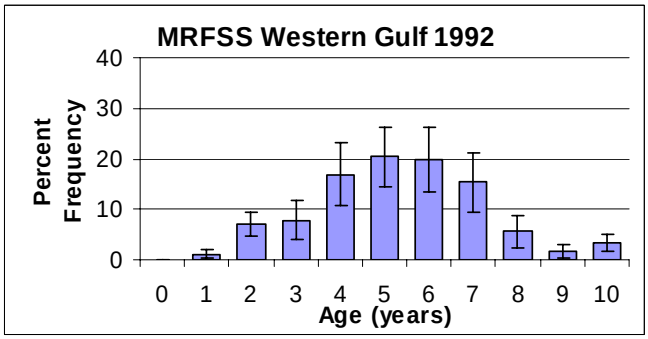

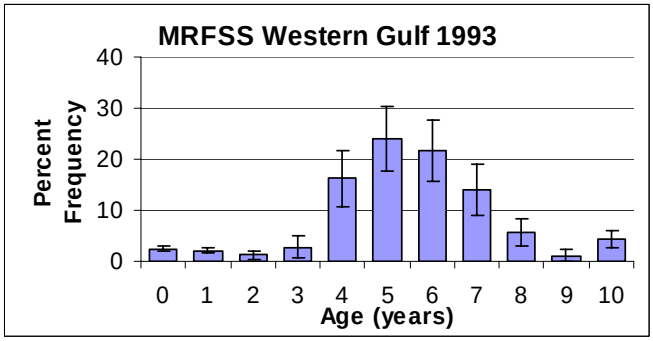

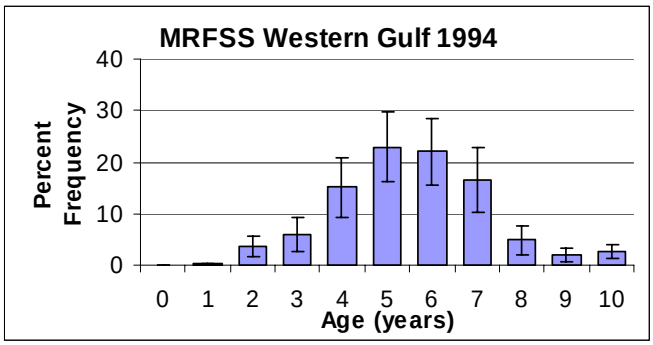

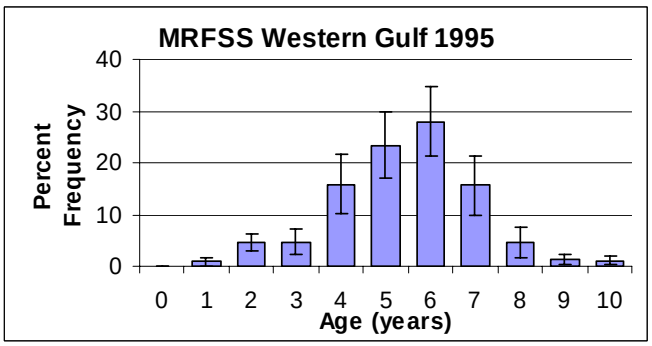

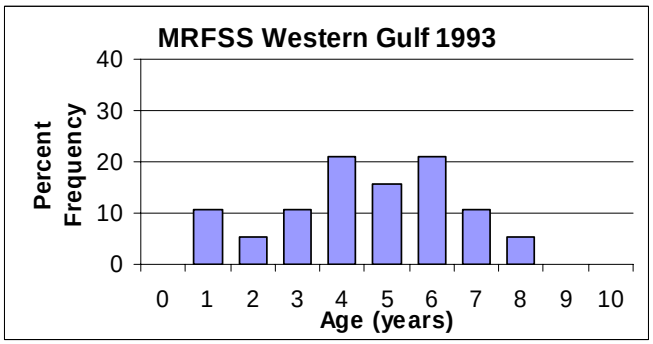

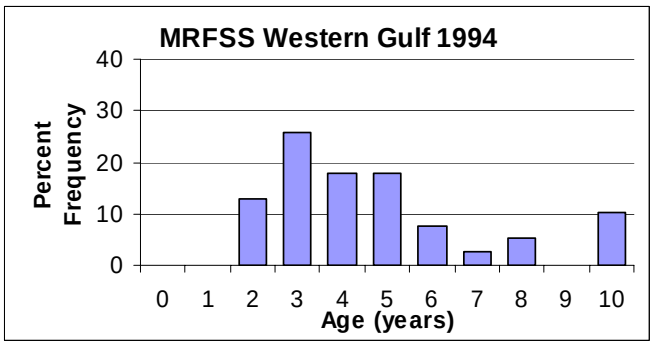

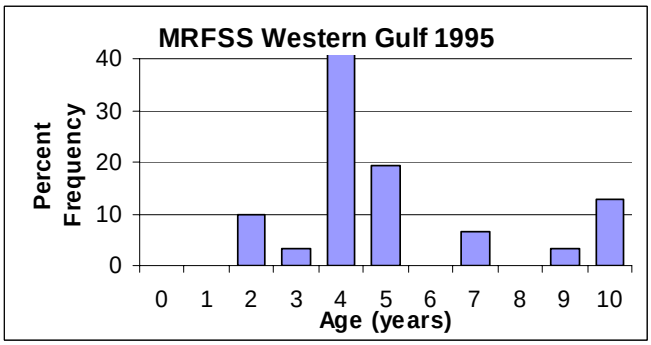

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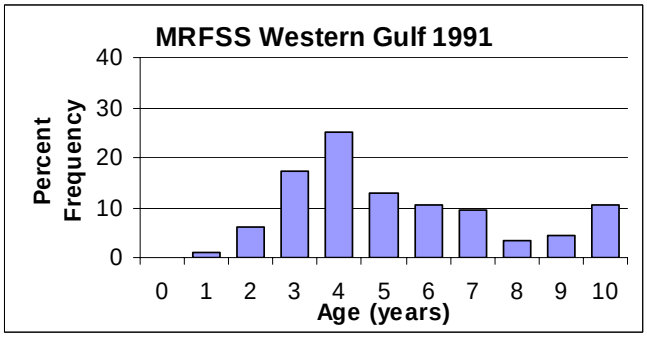

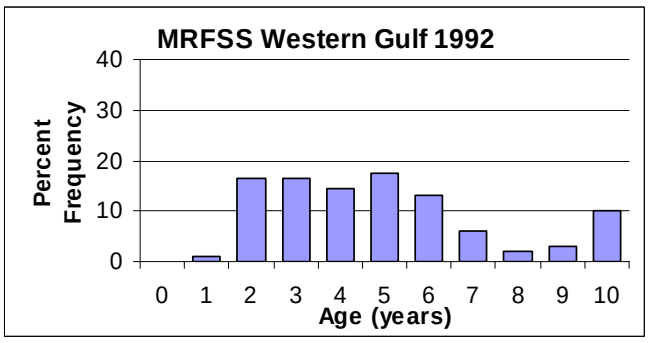

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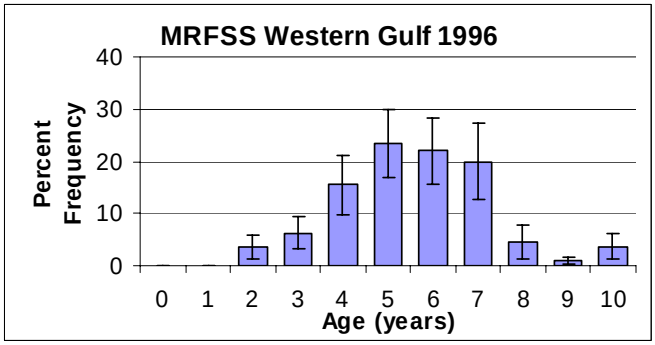

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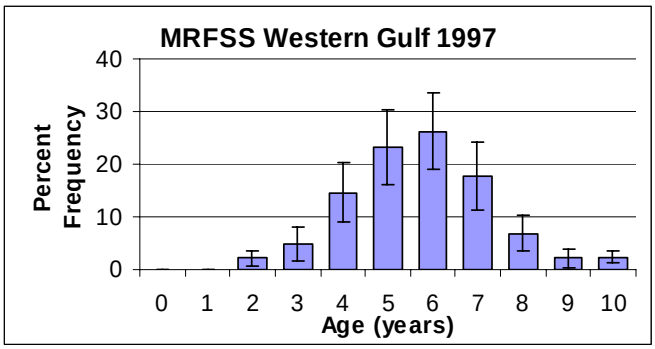

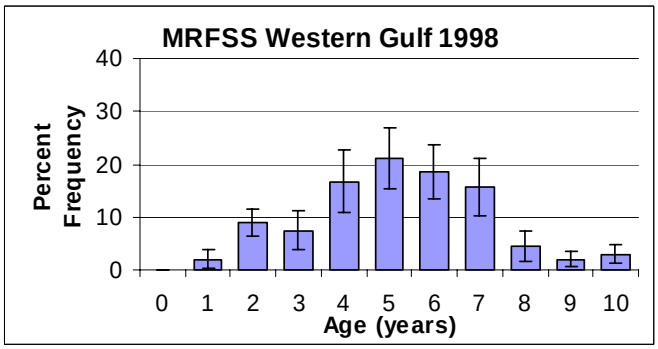

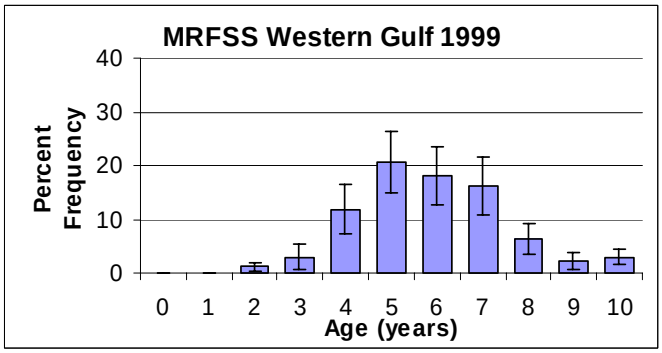

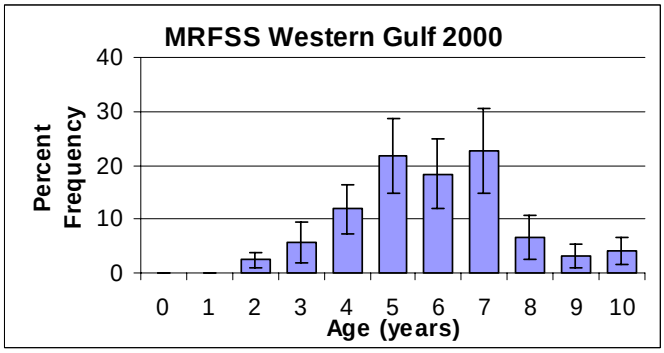

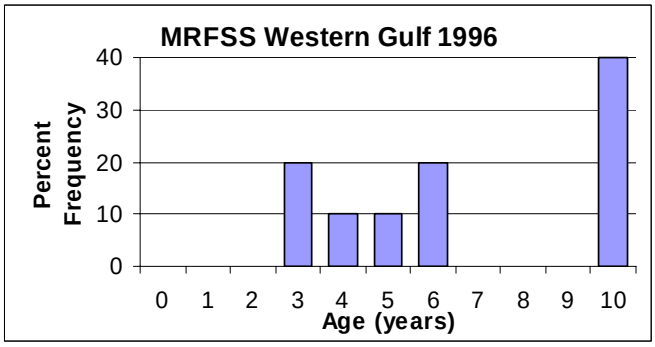

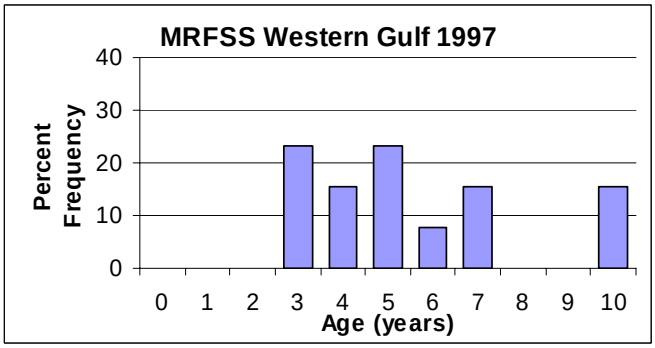

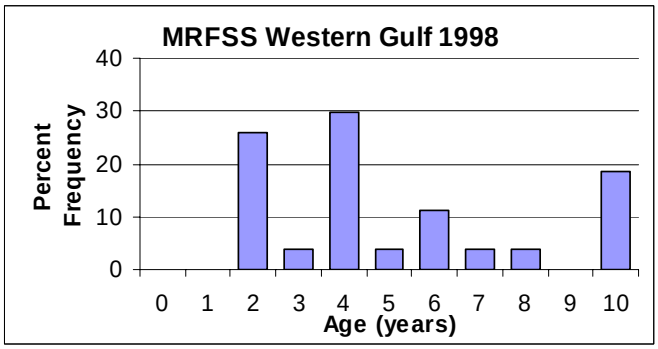

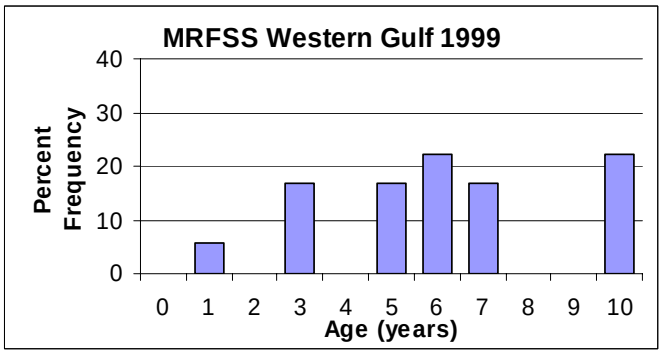

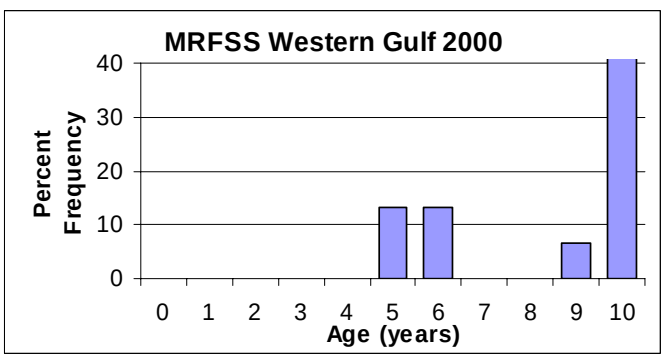

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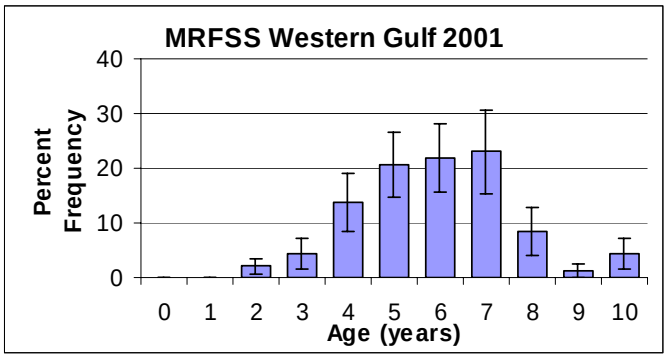

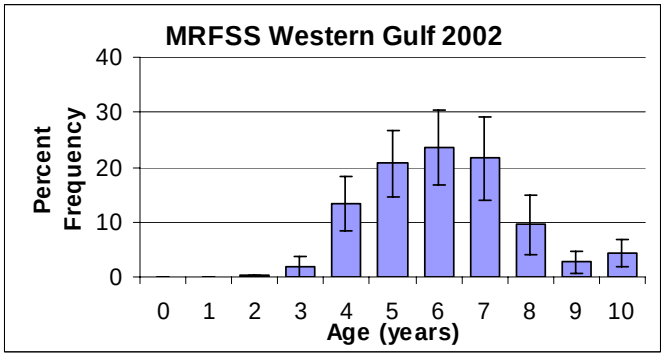

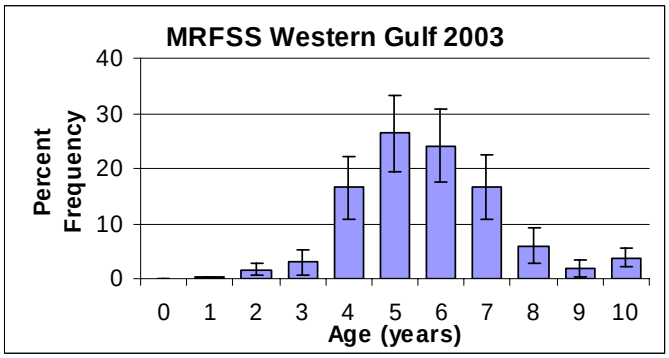

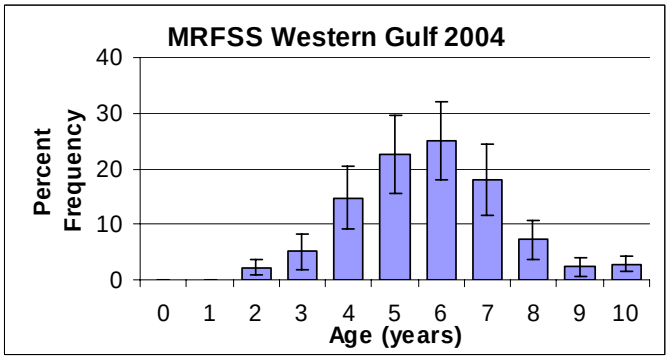

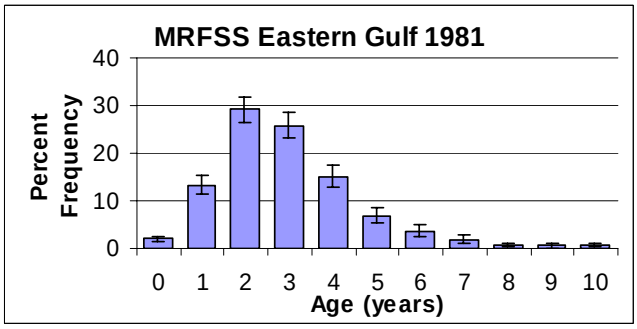

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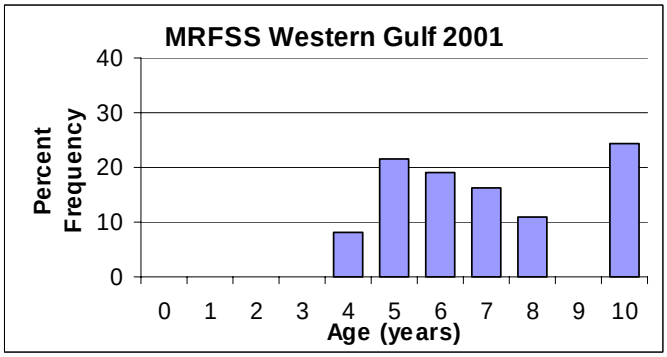

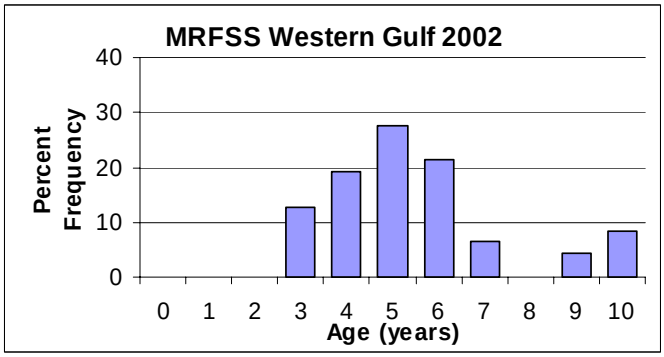

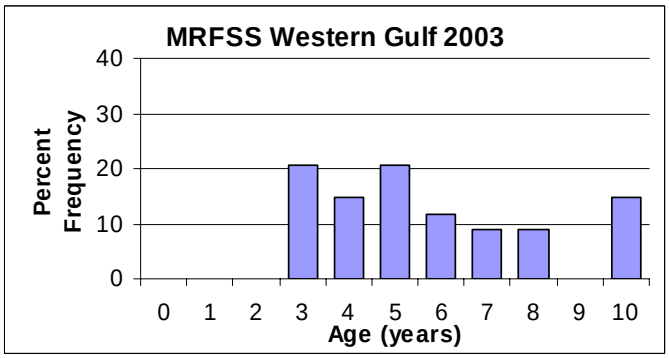

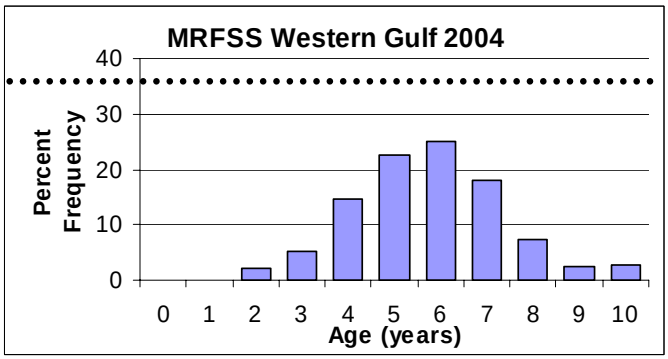

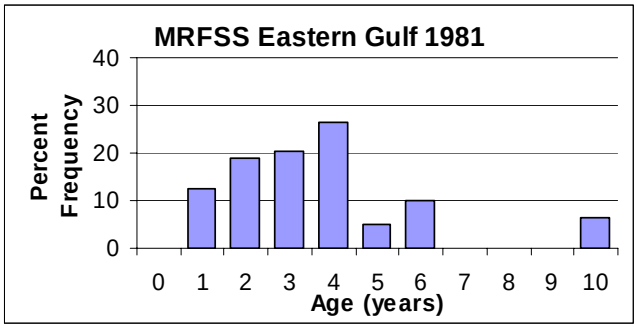

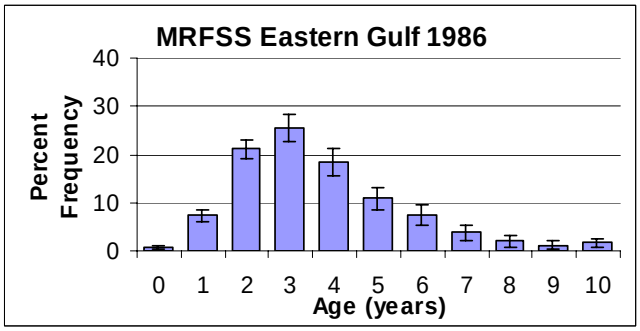

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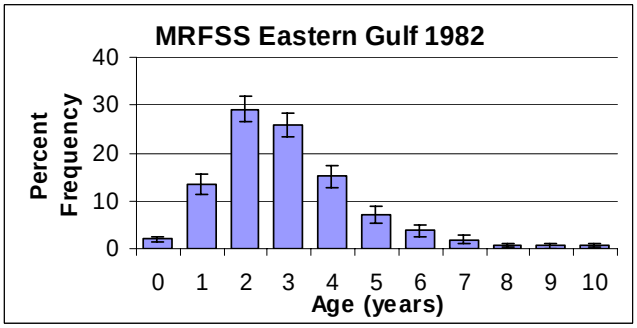

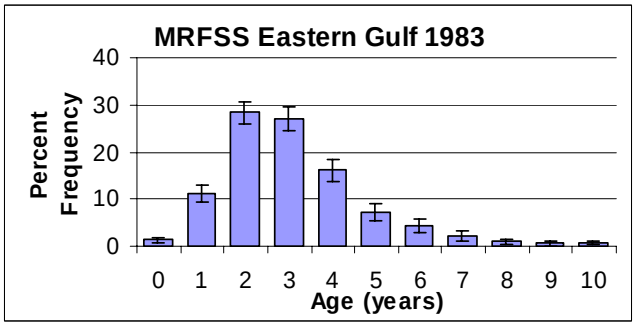

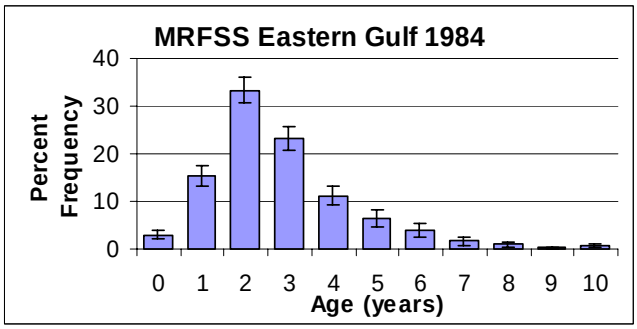

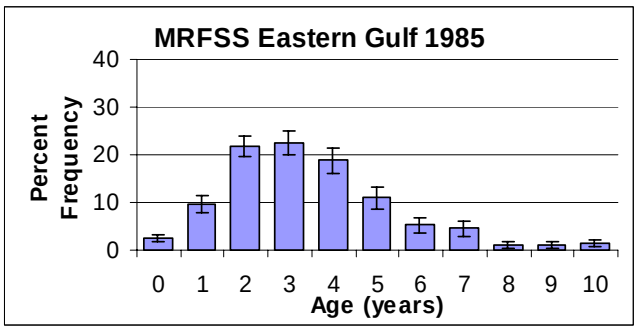

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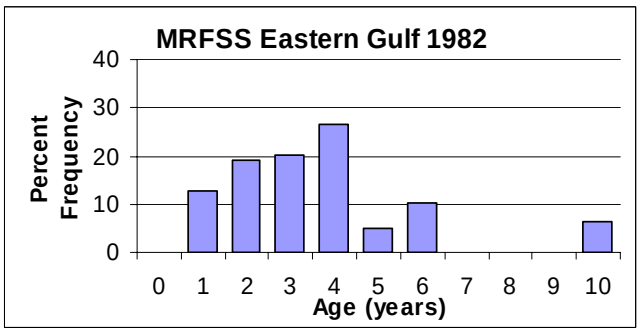

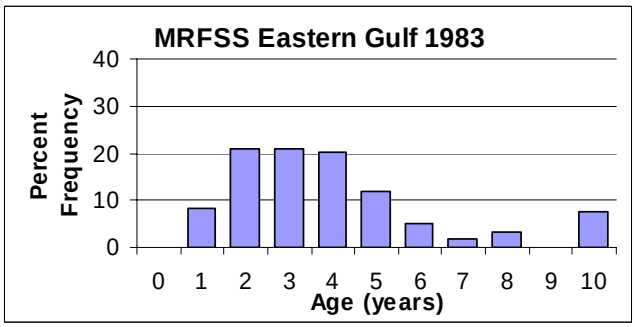

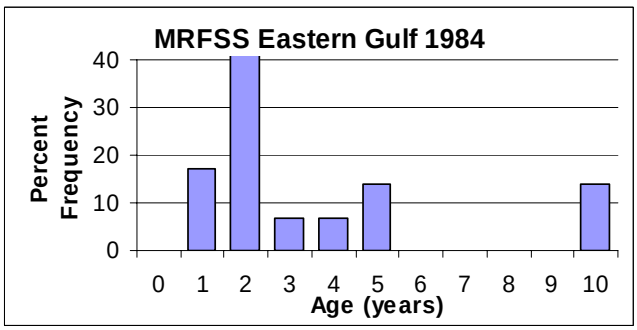

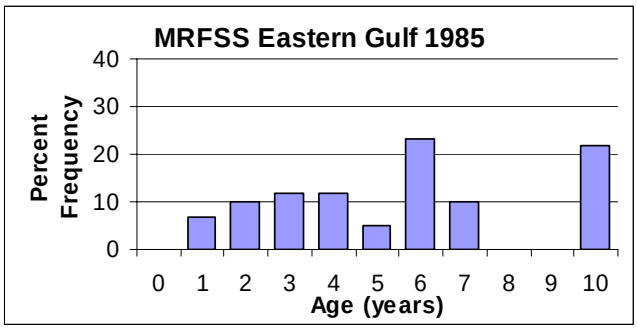

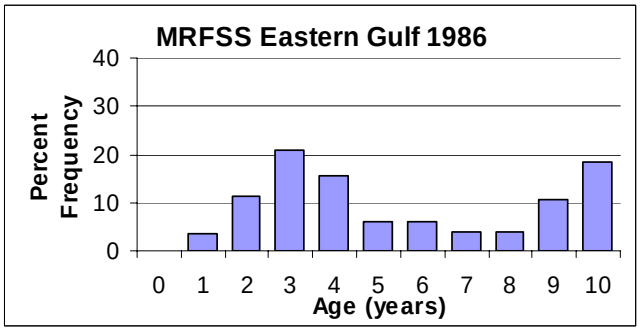

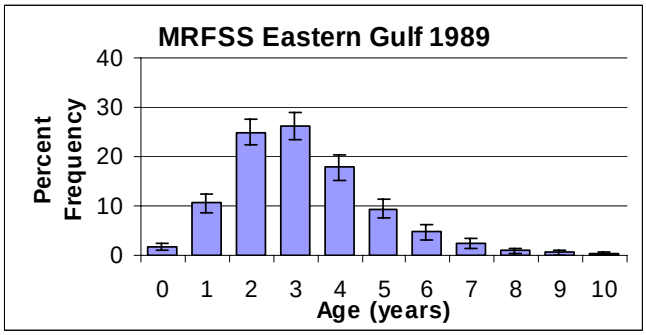

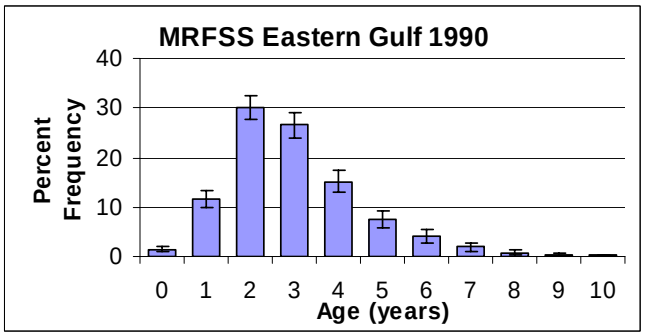

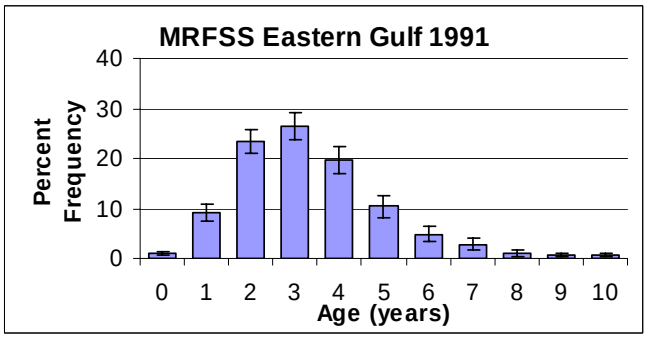

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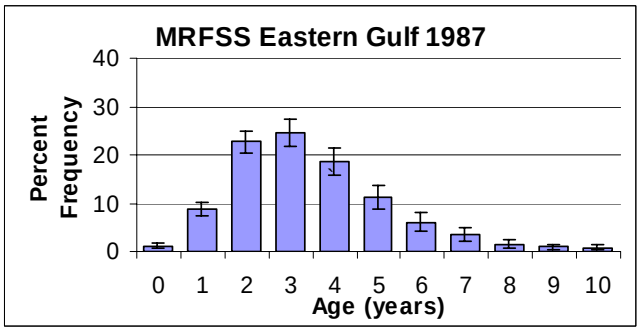

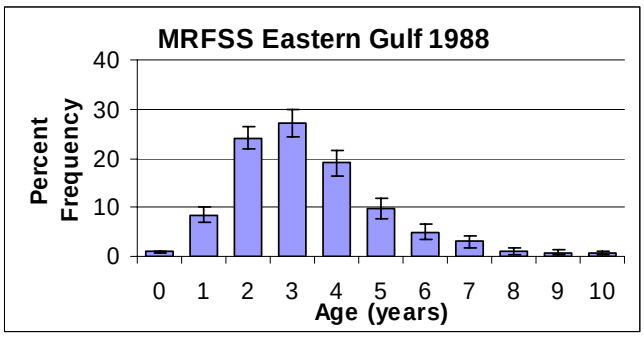

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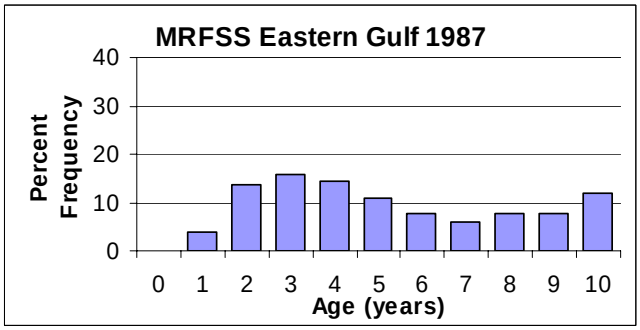

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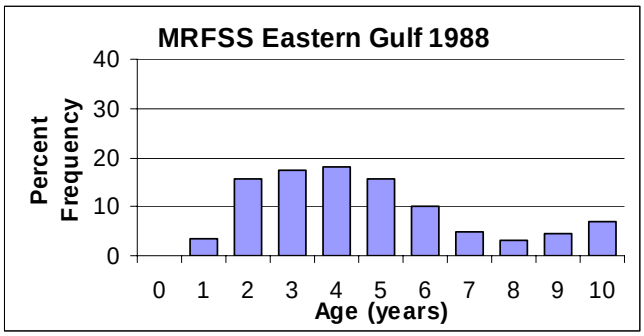

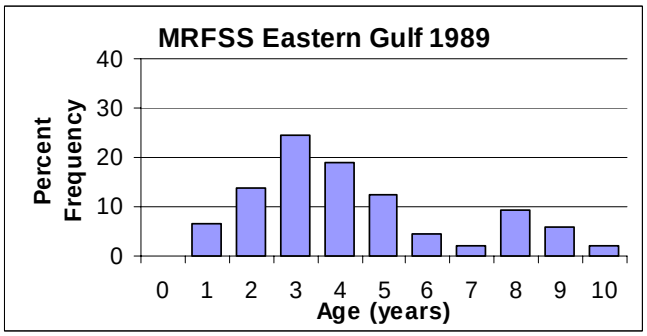

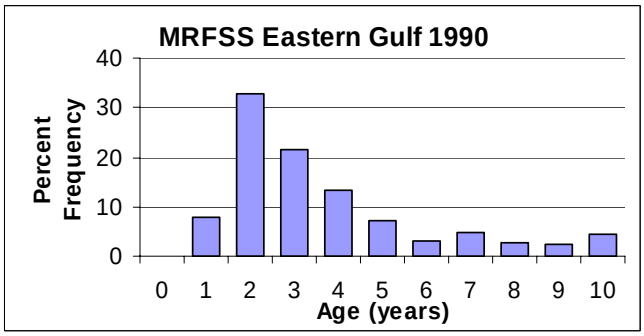

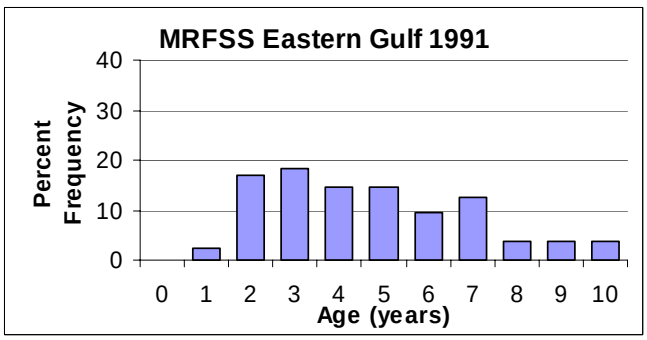

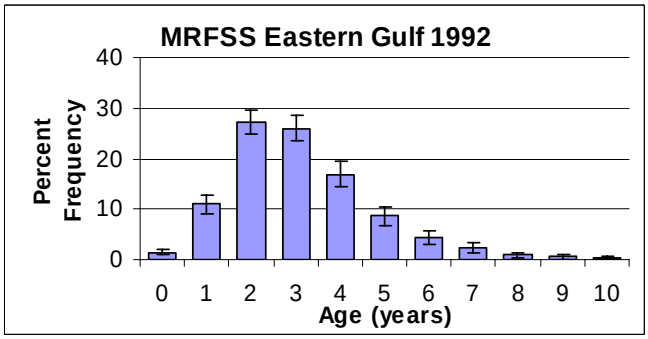

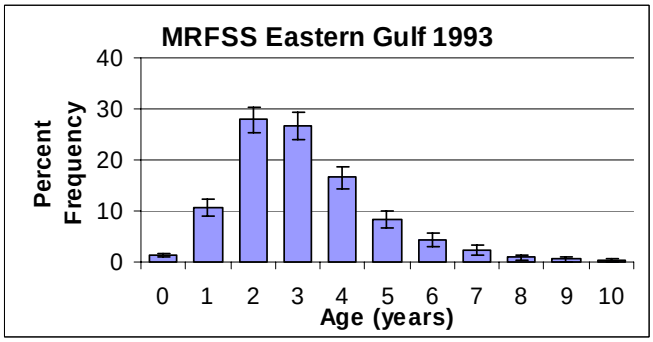

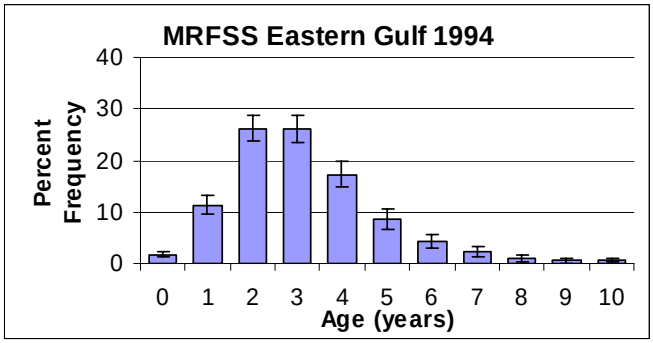

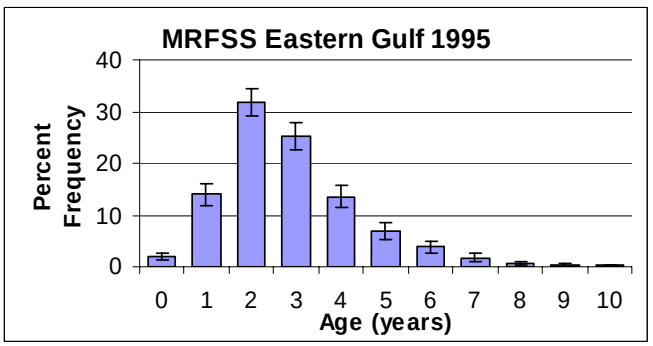

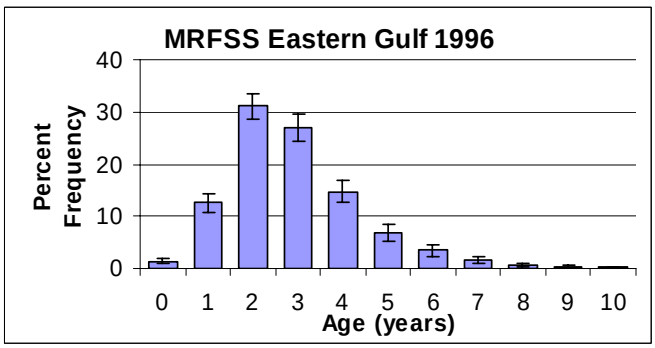

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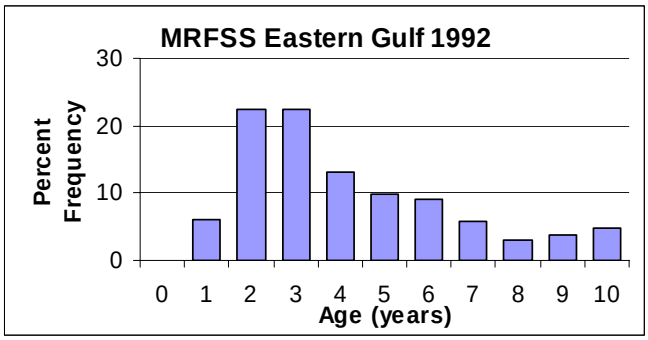

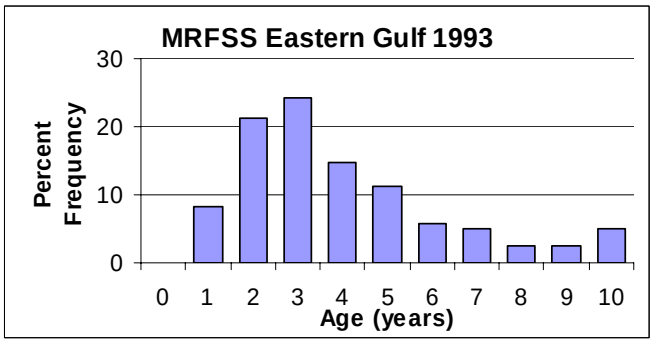

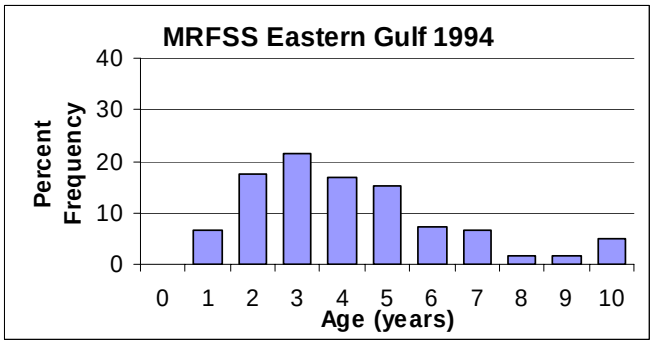

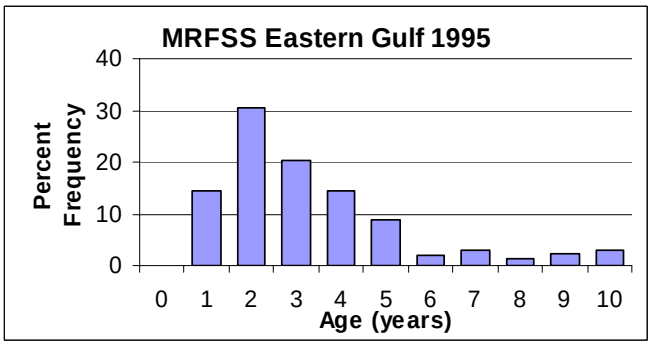

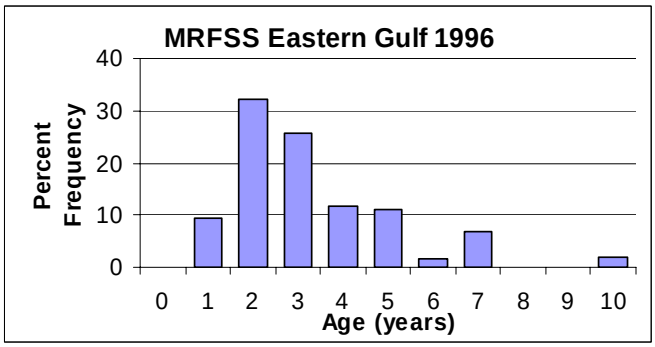

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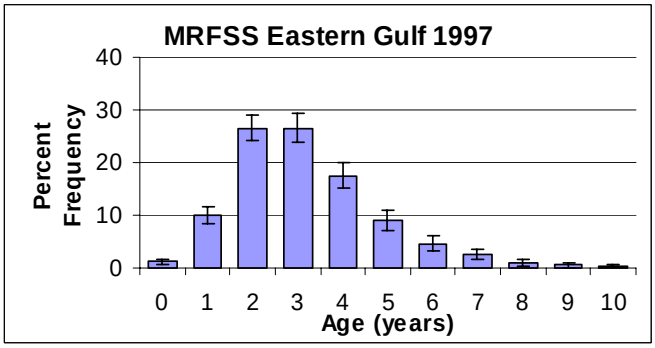

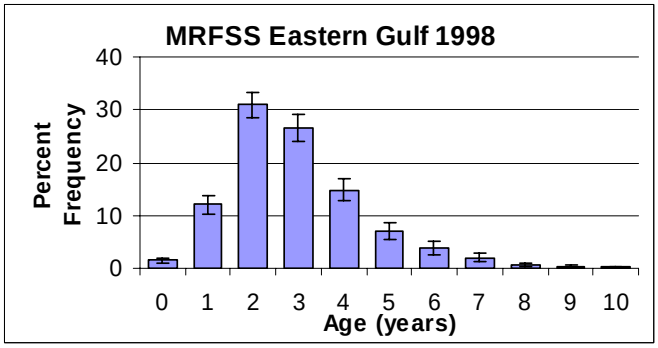

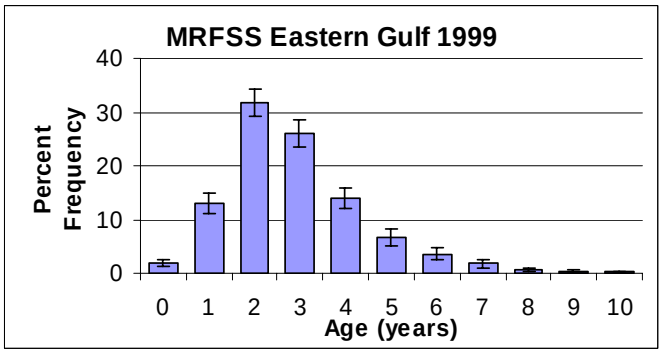

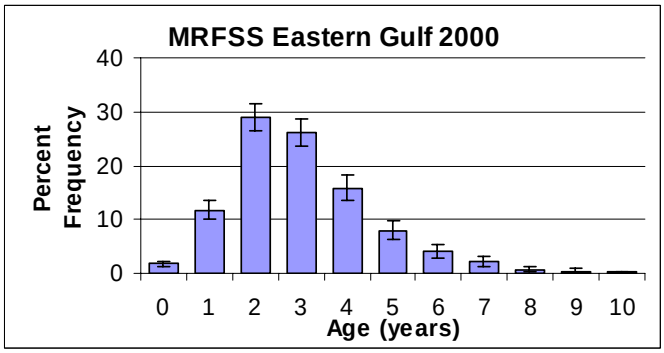

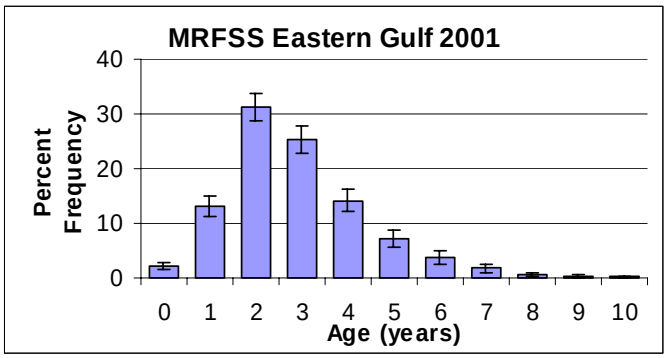

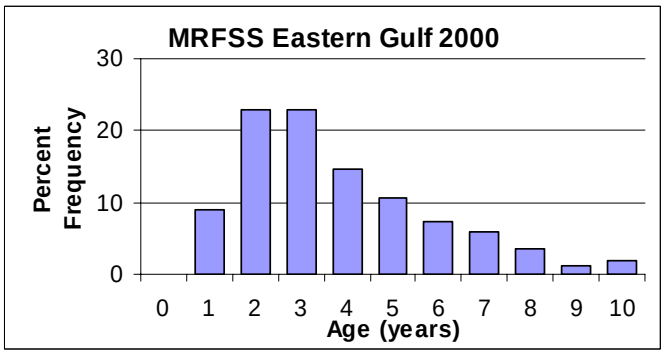

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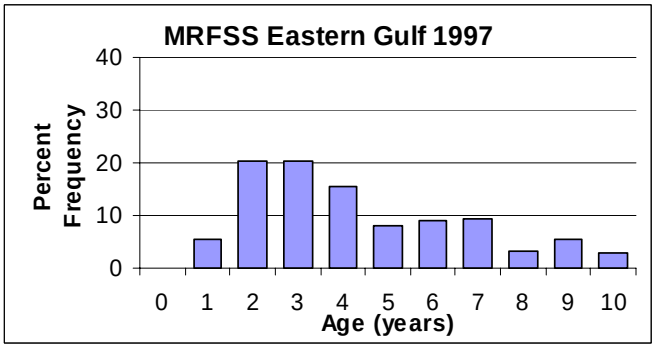

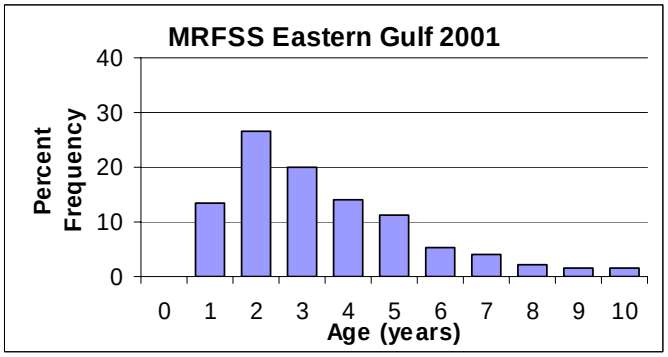

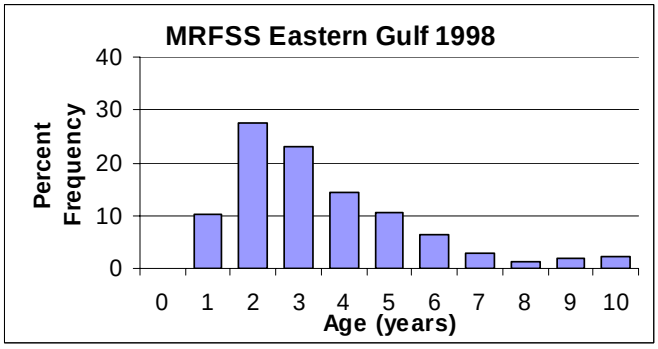

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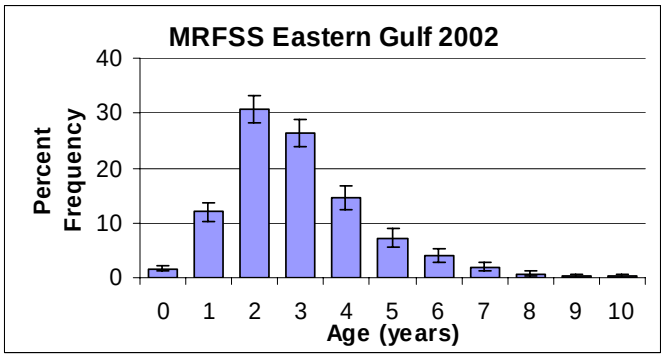

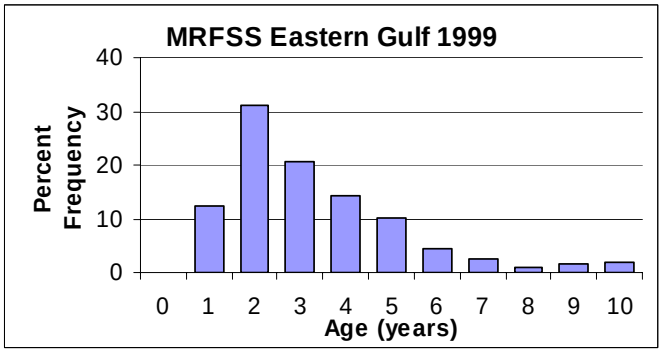

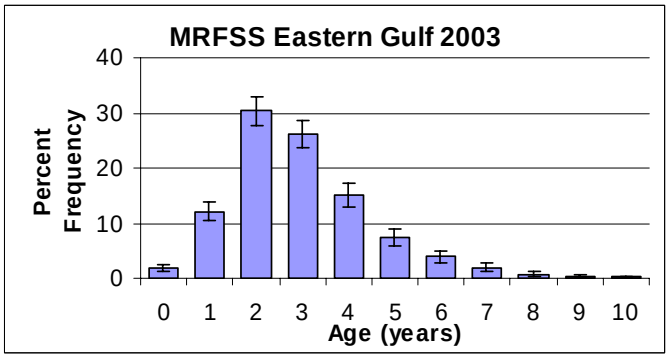

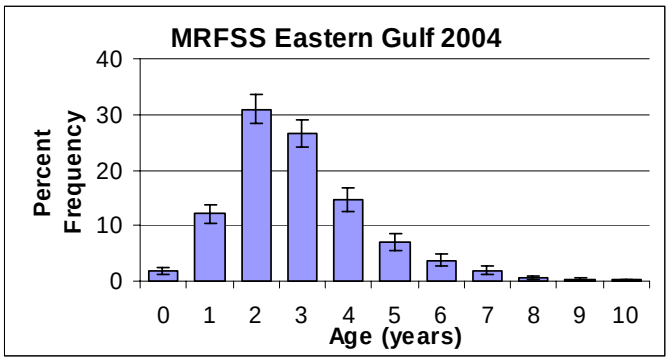

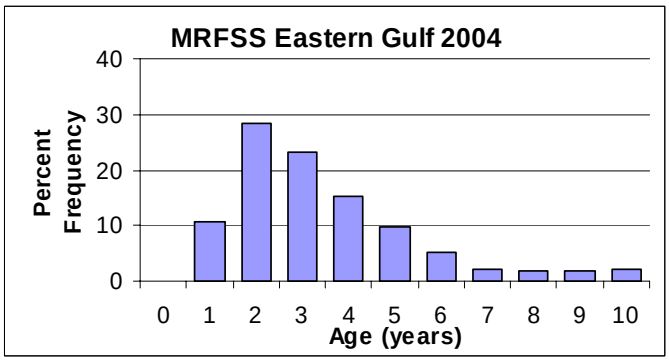

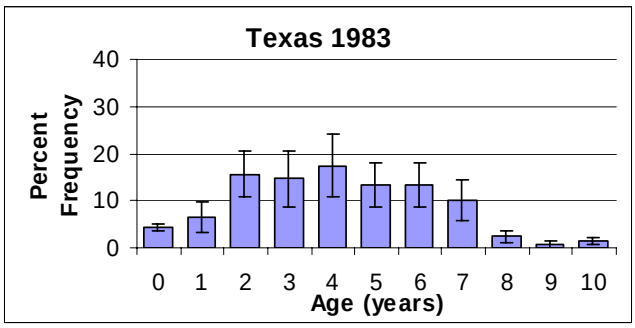

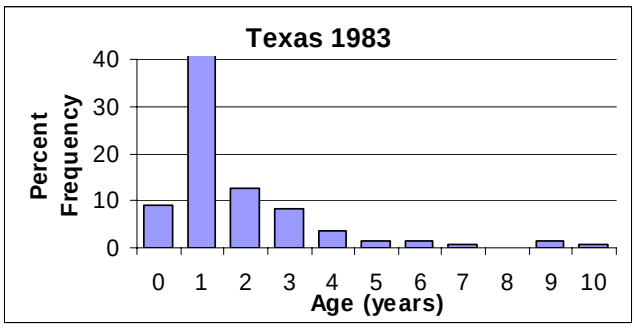

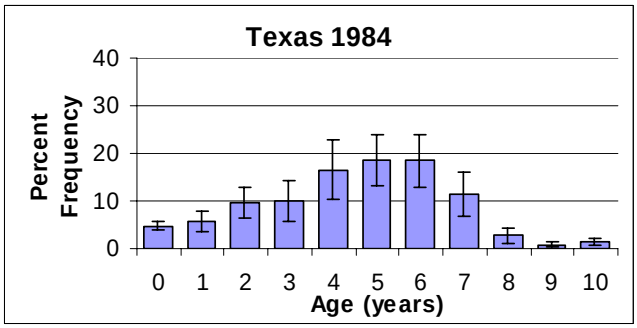

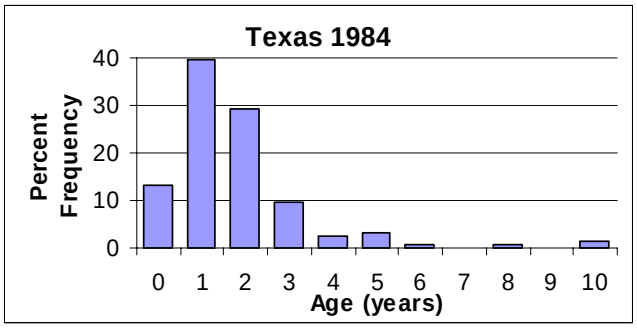

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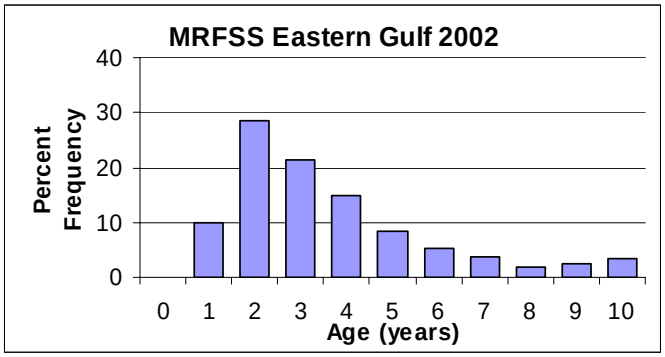

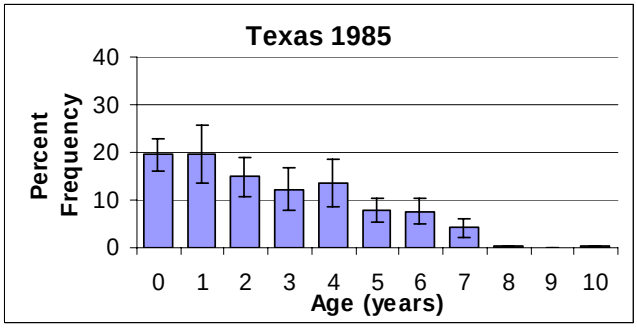

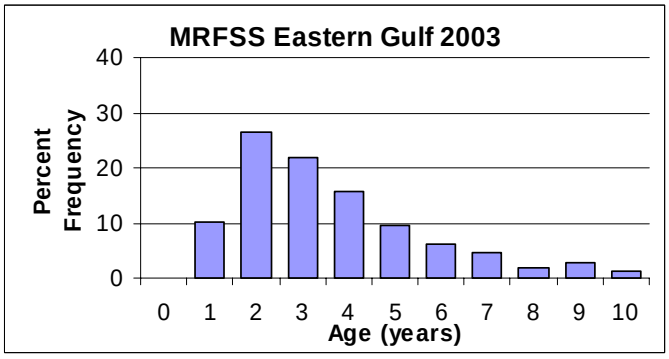

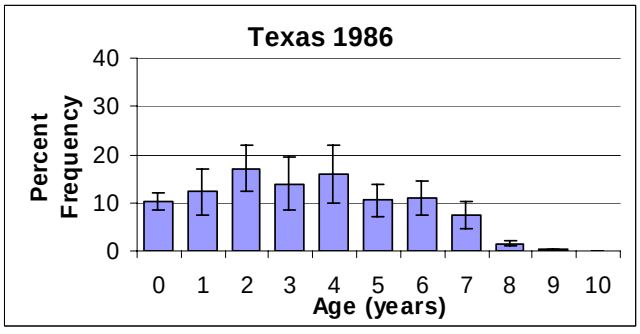

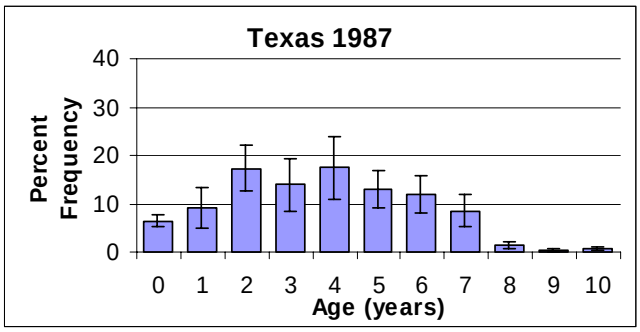

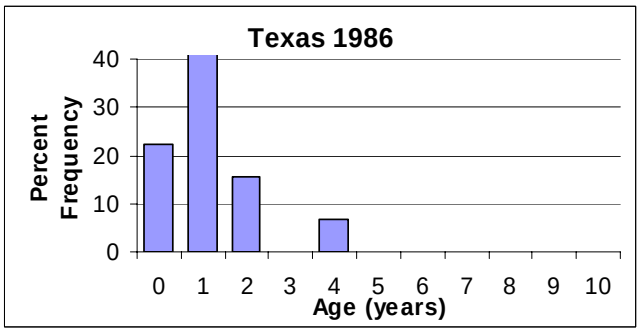

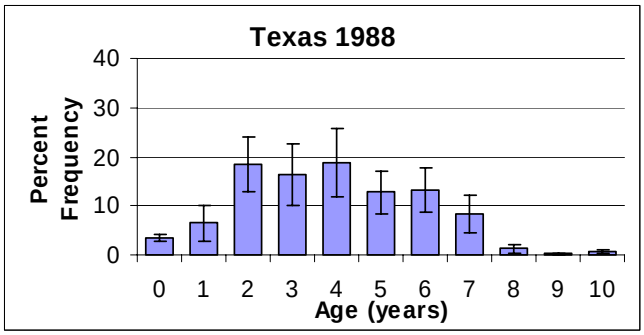

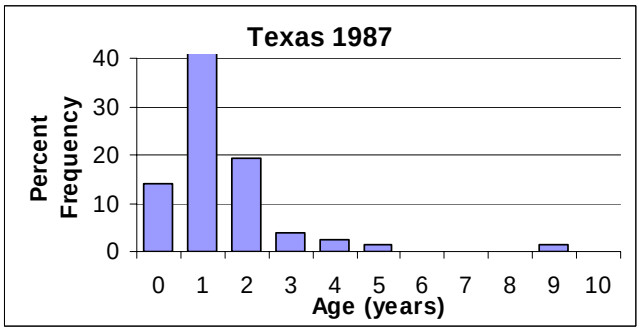

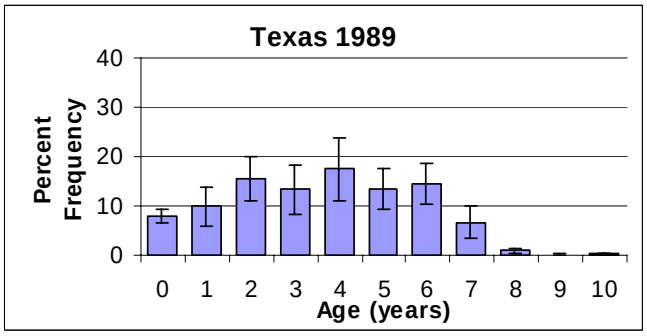

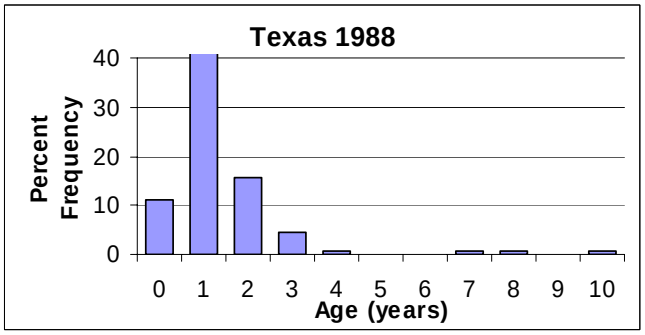

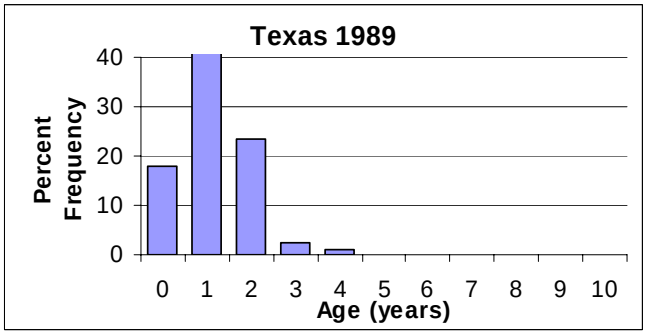

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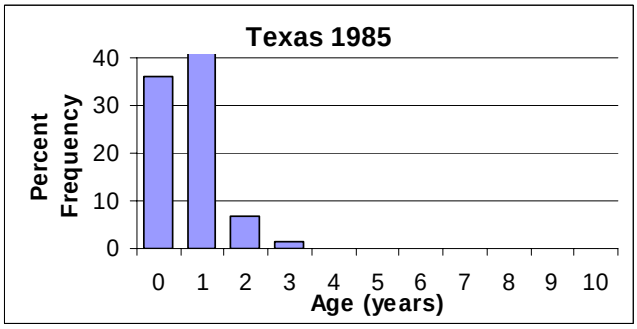

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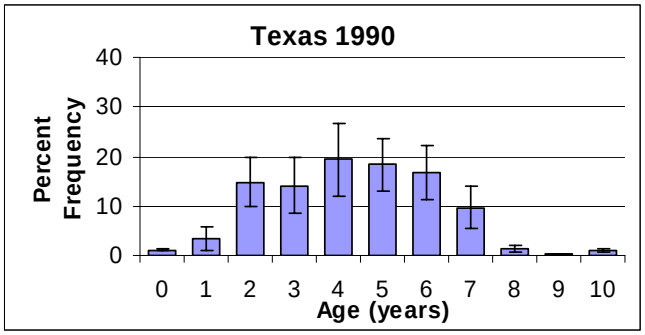

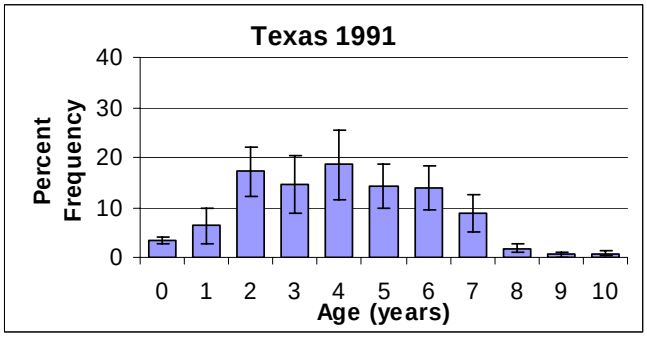

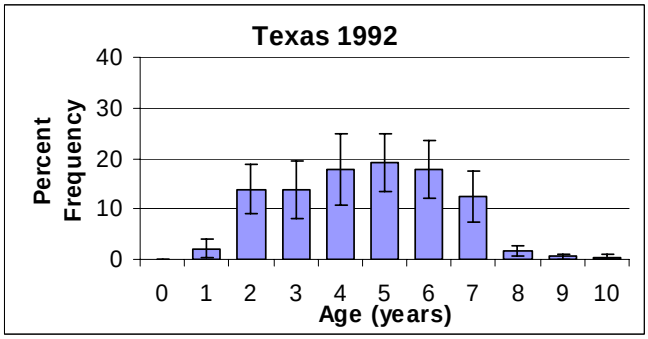

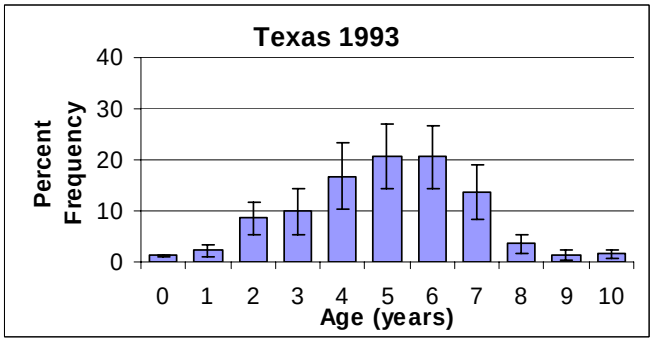

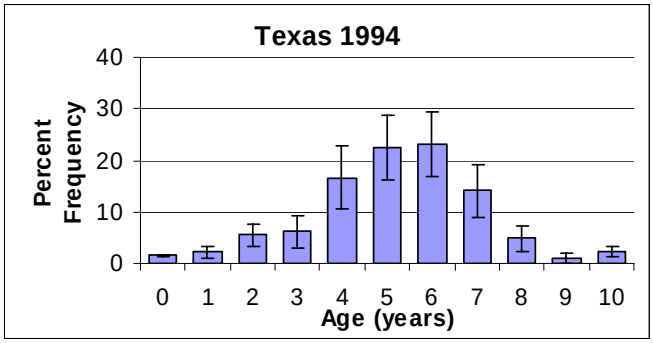

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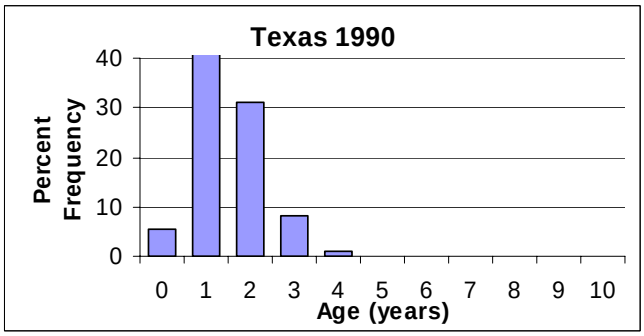

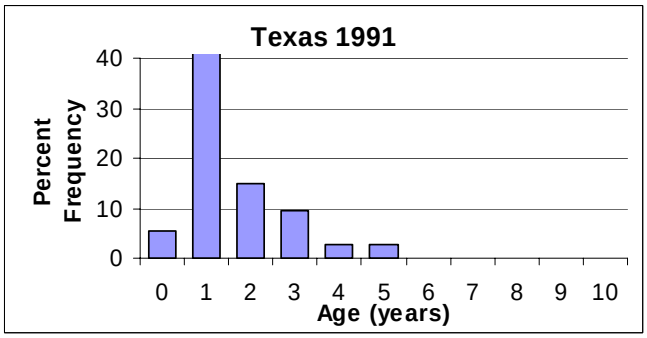

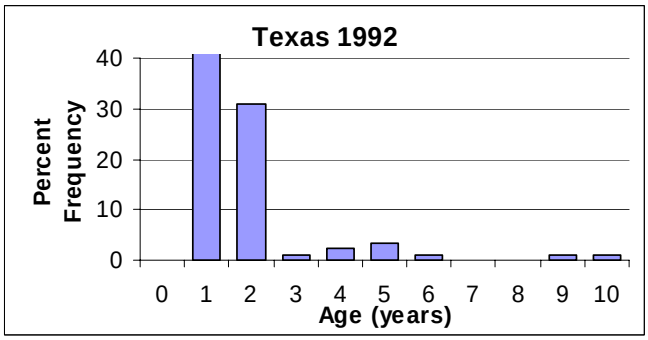

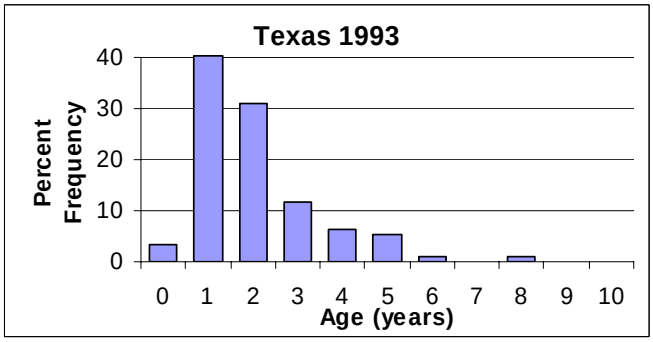

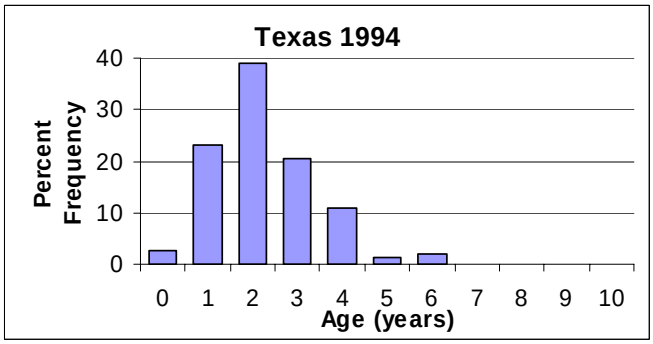

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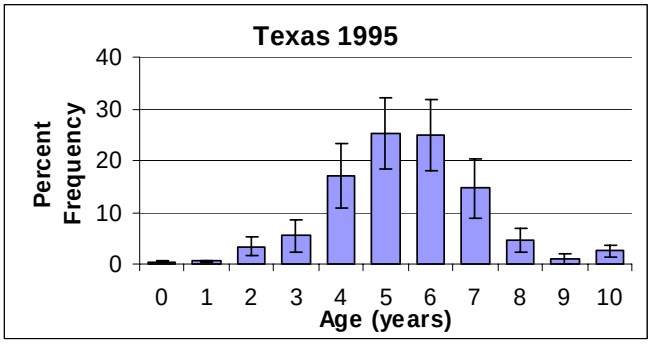

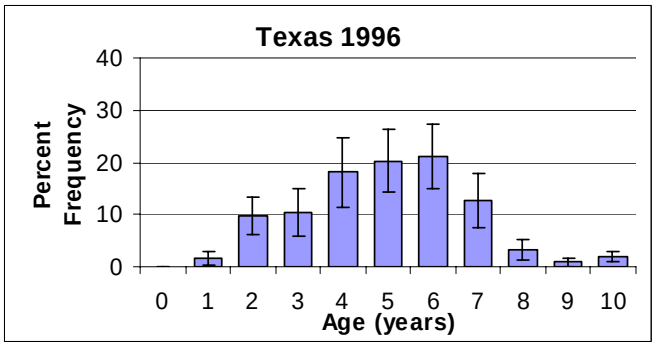

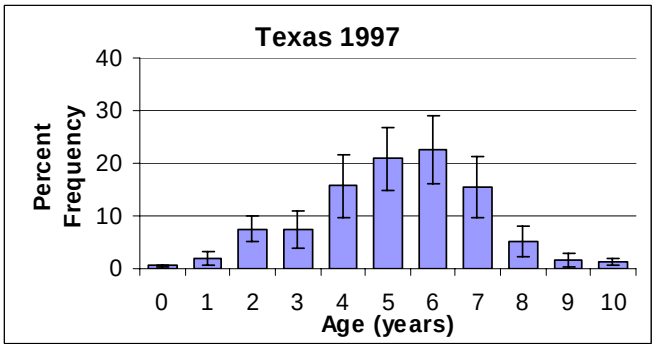

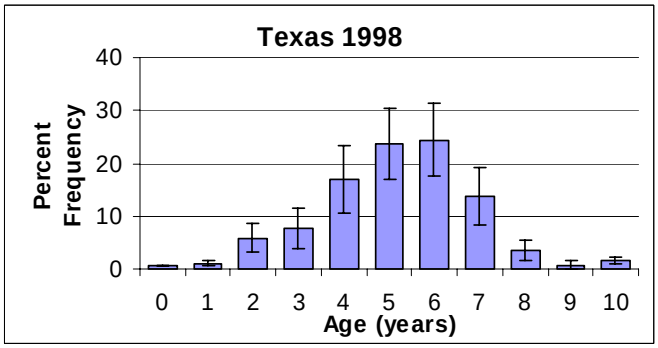

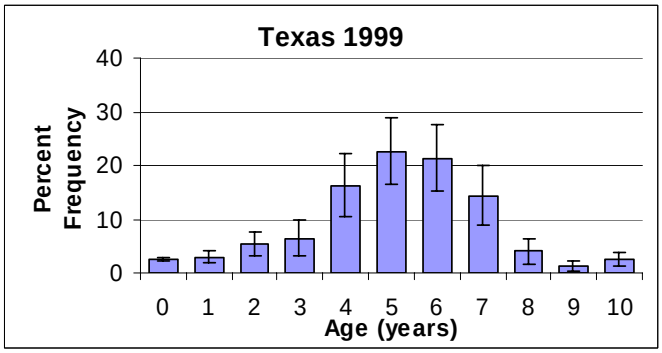

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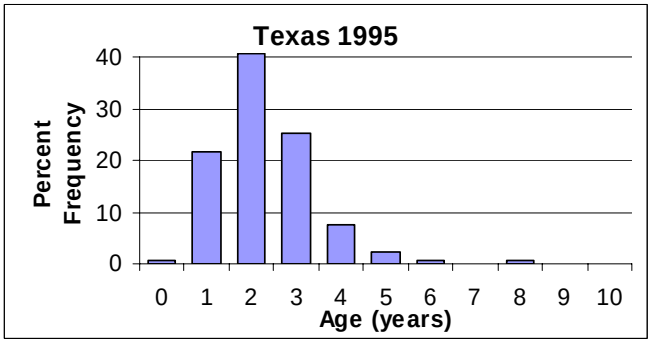

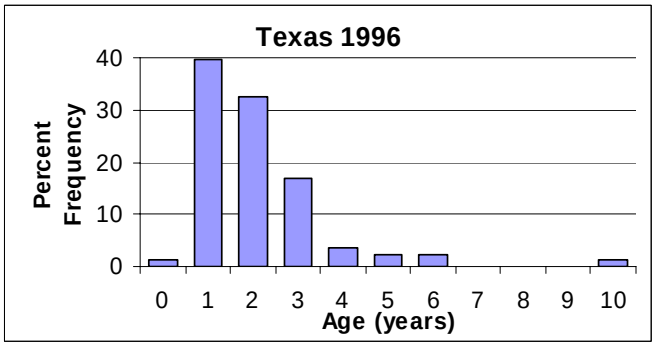

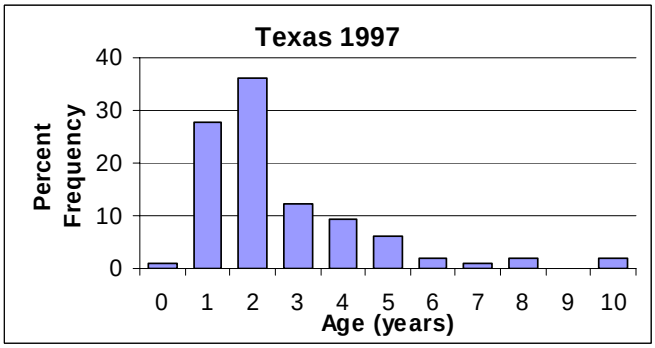

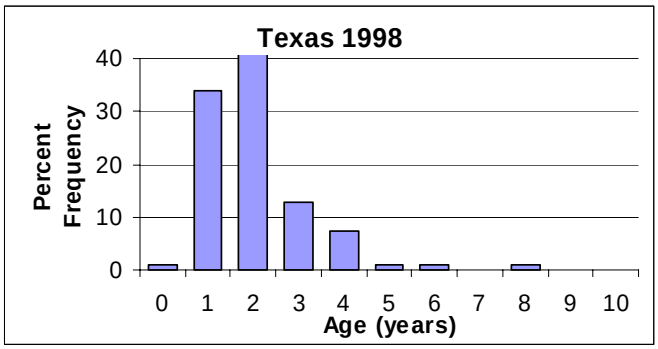

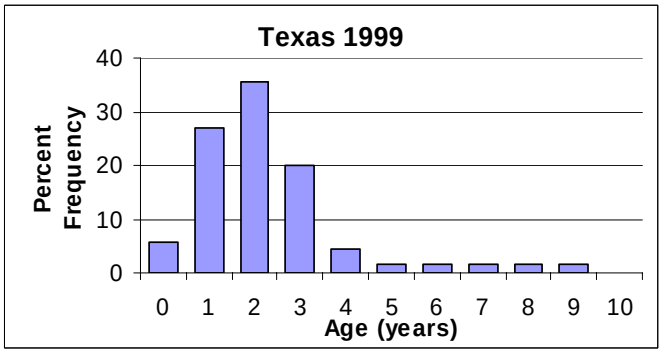

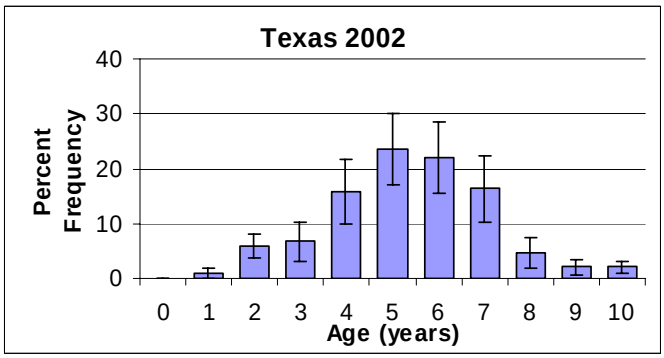

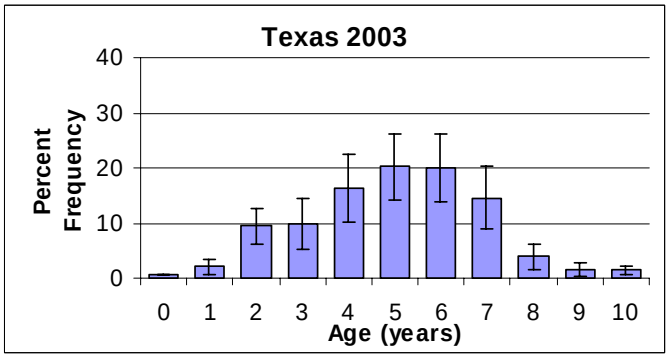

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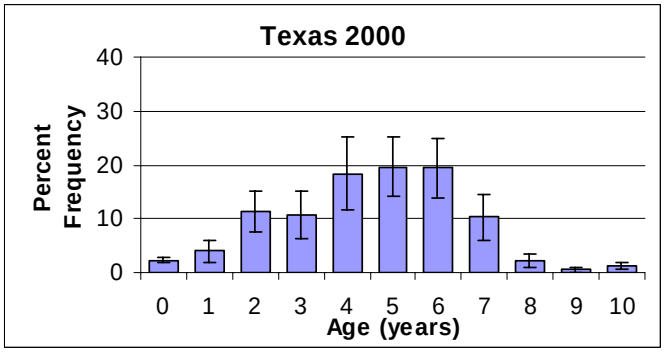

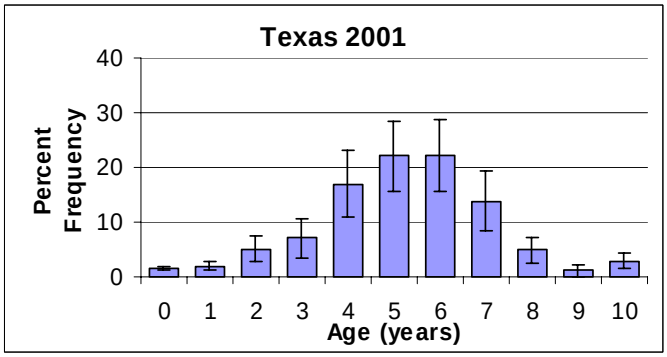

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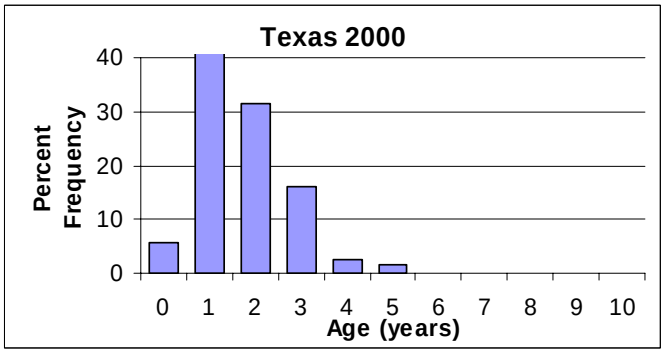
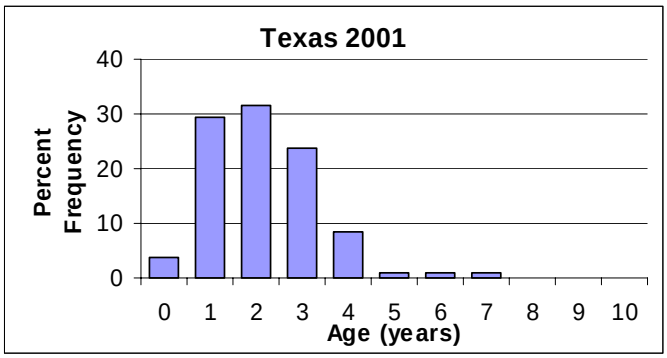
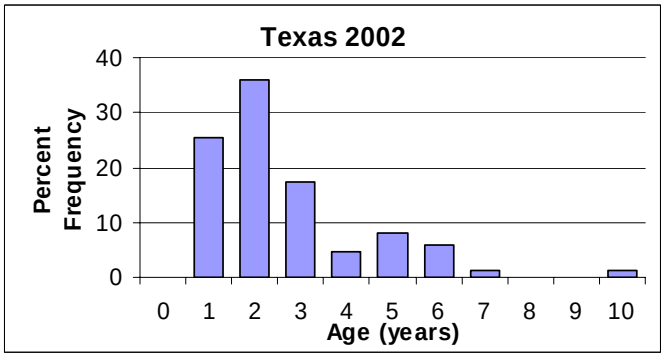



Texas 2001
Percent Frequency
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10
Age (years)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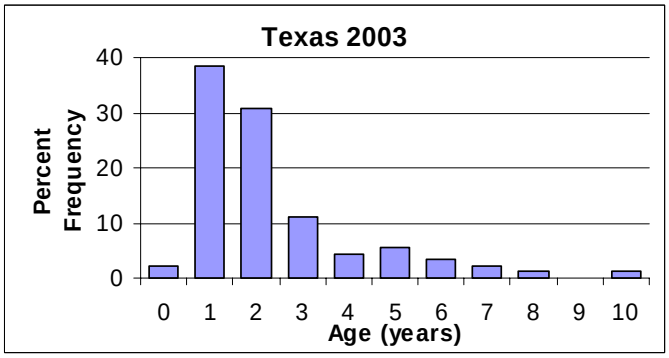
Age (years)


Texas 2003
Percent Frequency
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10
Age (years)