

**BFT-Table 1.** Estimated size, weight and weight at size conversion factors for Atlantic bluefin tuna stocks. Highlighted weight - size functions correspond to the annual equations representing overall mean for the population. Size measures are straight fork length (SFL), curved fork length (CFL), length 1st dorsal spine (LD1), head length straight line from snout to operculum (HeadL), preopercular length straight line from the snout to preoperculum (PreOP). Weight measures are round weight: weight of the whole fish (RWT); gutted weight: weight without guts and gonads (GWT); gutted and gilled: weight without guts, gonads and gills (GGWT); gutted gilled and tailed: weight without guts, gonads, gills and tail (GGTWT); and dressed weight: weight of fish gutted, head and tail off (DWT). All size units are centimeters (cm) and weight in kilograms (kg).

Function relationship by stock unit	X	Y	X range	Y range	n	alpha	beta	r <sup>2</sup>	Residual standard error	Method
<b>West - BFT</b>										
<b>Size conversion factors</b>										
SFL = alpha + beta*CFL	CFL cm	SFL cm	55 - 275	53 - 265	1035	1.85746	0.9606	0.991004	2.564565	Fit Robust Estimate
CFL = alpha + beta*SFL	SFL cm	CFL cm	53 - 265	55 - 274	1035	-0.8319	1.03141	0.991004	2.670115	Fit Robust Estimate
<b>Weight conversion factors</b>										
RWT = alpha + beta*DWT	DWT kg	RWT kg	93 - 637	70 - 514	1960	6.19709	1.23034	0.976003	12.58053	Fit Robust Estimate
DWT = alpha + beta*RWT	RWT kg	DWT kg	70 - 514	93 - 637	1960	0.29114	0.79671	0.976003	10.13543	Fit Robust Estimate
<b>Wgt size relations</b>										
RWT_std = alpha*SFL_std^beta	SFL cm	RWT kg	53 - 353	4 - 637	51204	1.77054E-05	3.001252	na	30.650867	nonlinear fit weight CV RWT
RWT = alpha*CFL^beta	CFL cm	RWT kg	56 - 338	4 - 637	2977	4.94442E-05	2.80941	na	32.624945	nonlinear fit Gauss-Newton
DWT = alpha*CFL^beta	CFL cm	DWT kg	127 - 366	25 - 514	49344	8.31E-06	3.078037	na	24.749856	nonlinear fit Gauss-Newton
GGTWT = alpha*SFL^beta	SFL cm	GGTWT kg	92 - 289	11 - 403	2324	1.27354E-05	3.049098	na	18.241847	nonlinear fit Gauss-Newton

Function relationship by stock unit	X	Y	X range	Y range	n	alpha	beta	r <sup>2</sup>	Residual standard error	Method
<b>East - BFT</b>										
<b>Size conversion factors</b>										
LD1 = alpha + beta*SFL	SFL cm	LD1 cm	56 - 300	17 - 71	636	5.68911	0.25426	0.97762	2.051968	Fit Robust Estimate
CFL = alpha + beta*SFL	SFL cm	CFL cm	78 - 242	84 - 252	222	-1.887	1.05065	0.989565	4.121014	Fit Robust Estimate
SFL = alpha + beta*LD1	LD1 cm	SFL cm	17 - 71	56 - 300	636	-19.733	3.86483	0.97762	8.063375	Fit Robust Estimate
CFL = alpha + beta*LD1	LD1 cm	CFL cm	24 - 71	84 - 283	312	-27.832	4.12726	0.963645	8.838777	Fit Robust Estimate
LD1 = alpha + beta*CFL	CFL cm	LD1 cm	84 - 283	24 - 71	312	7.9182	0.23547	0.963645	2.116302	Fit Robust Estimate
SFL = alpha + beta*CFL	CFL cm	SFL cm	84 - 252	78 - 242	222	2.94574	0.94419	0.989565	3.885642	Fit Robust Estimate
HeadL = alpha + beta*CFL	CFL cm	HeadL cm	84 - 284	22 - 74	306	4.40413	0.22418	0.865423	3.048081	Fit Robust Estimate
PreOP = alpha + beta*CFL	CFL cm	PreOP cm	153 - 284	33 - 74	294	1.09339	0.18922	0.646239	3.099589	Fit Robust Estimate
PreOP = alpha + beta*HeadL	HeadL cm	PreOP cm	38 - 74	33 - 74	294	-2.2179	0.83582	0.782967	2.427795	Fit Robust Estimate
<b>Weight conversion factors</b>										
GWT = alpha + beta*RWT	RWT kg	GWT kg	0.3 - 370	0.3 - 358	236	-0.2169	0.95401	0.999741	1.090203	Fit Robust Estimate
RWT = alpha + beta*GWT	GWT kg	RWT kg	0.3 - 358	0.3 - 370	236	0.23115	1.04789	0.999741	1.140367	Fit Robust Estimate
RWT = beta*GGWT (Mediterraneo)	RWT kg	GGWT kg					1.13			Annon. 1993 *
RWT = beta*GGWT (Atlantic)	RWT kg	GGWT kg					1.16			ICCAT, 1997 **
<b>Wgt size relations</b>										
RWT_std = alpha*SFL_std^beta	SFL cm	RWT kg	27 - 300	0.25 - 513	74272	3.50801E-05	2.878451	na	15.965446	nonlinear fit weight CV RWT
GGTWT = alpha*SFL^beta	SFL cm	GGTWT kg	75 - 281	8 - 362	8034	4.58875E-05	2.807655	na	13.407286	nonlinear fit Gauss-Newton
GGWT = alpha*SFL^beta	SFL cm	GGWT kg	55 - 289	2.8 - 385	3469	0.00010655	2.630105	na	14.248998	nonlinear fit Gauss-Newton
GGWT = alpha*CFL^beta	CFL cm	GGWT kg	94 - 289	10 - 338	4962	2.54806E-05	2.893777	na	15.35662	nonlinear fit Gauss-Newton
GGWT = alpha*LD1^beta	LD1 cm	GGWT kg	29 - 76	20 - 350	2044	0.003845665	2.621073	na	21.819718	nonlinear fit Gauss-Newton
RWT = alpha*LD1^beta	LD1 cm	RWT kg	17 - 79	3 - 425	2796	0.001120971	2.917953	na	20.019236	nonlinear fit Gauss-Newton

\* Anon. (1993) Report of the Second GFCM/ICCAT Expert Consultation on Stocks of Large Pelagic Fishes in the Mediterranean Sea. Collect Vol Sci Pap ICCAT 40 (1): 11–111.

\*\* ICCAT (1997) Estimates of unreported Atlantic bluefin tuna catches. Collect Vol Sci Pap ICCAT 46: 159–160.

**BFT-Table 2.** Estimated coefficients alpha and beta of the monthly weight-size relationship for Atlantic bluefin tuna stock units. All functions correspond to straight fork length (SFL) cm and round weight (RWT) kg.

West - BFT			East - BFT		
Month	alpha	beta	Month	alpha	beta
Jan	1.77054E-05	2.997890751	Jan	3.50801E-05	2.87767028
Feb	1.77054E-05	3.002926875	Feb	3.50801E-05	2.875859708
Mar	1.77054E-05	3.008338232	Mar	3.50801E-05	2.875496669
Apr	1.77054E-05	3.016185296	Apr	3.50801E-05	2.879610235
May	1.77054E-05	2.998831057	May	3.50801E-05	2.886913883
Jun	1.77054E-05	2.98858373	Jun	3.50801E-05	2.883091788
Jul	1.77054E-05	2.992473629	Jul	3.50801E-05	2.871533069
Aug	1.77054E-05	2.998237612	Aug	3.50801E-05	2.872001949
Sep	1.77054E-05	3.001723945	Sep	3.50801E-05	2.87577309
Oct	1.77054E-05	3.007748588	Oct	3.50801E-05	2.876331652
Nov	1.77054E-05	3.004938062	Nov	3.50801E-05	2.877162829
Dec	1.77054E-05	2.99596985	Dec	3.50801E-05	2.87529487

### Reference

Rodriguez-Marin E, Ortiz M, Ortiz de Urbina J.M., Quelle P, Walter J, Abid N, *et al.* (2015) Atlantic bluefin tuna (*Thunnus thynnus*) Biometrics and Condition. PLoS ONE 10(10): e0141478.doi:10.1371/journal.pone.0141478