

Herring (*Clupea harengus*) in Subarea 4 and divisions 3.a and 7.d, autumn spawners (North Sea, Skagerrak and Kattegat, eastern English Channel)

#### ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches in 2020 should be no more than 431 062 tonnes, which includes 418 649 tonnes for the A-fleet.

#### Stock development over time

Spawning-stock biomass (SSB) fluctuated between 1.5 and 2.7 million tonnes between 1998 and 2018, and in all years it was above MSY B<sub>trigger</sub>. Fishing mortality (F) has been below F<sub>MSY</sub> since 1996. Recruitment (R) has been relatively low since 2002, with very low recruitment in 2015 and 2017.

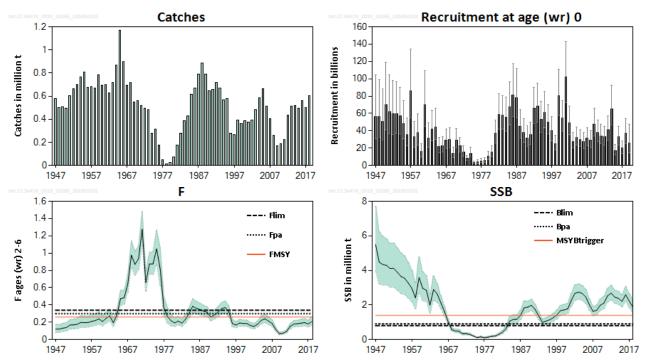


Figure 1 Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Summary of the stock assessment; 95% confidence intervals are shown for SSB, F, and recruitment.

### Stock and exploitation status

ICES assesses that fishing pressure on the stock is below  $F_{MSY}$ ,  $F_{PA}$ , and  $F_{lim}$ ; and that the spawning stock size is above MSY  $B_{trigger}$ ,  $B_{pa}$ , and  $B_{lim}$ .

**Table 1** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. State of the stock and fishery relative to reference points.

pomitor											
		Fishing pressure					Stock size				
		2016	2017		2018			2016	2017		2018
Maximum sustainable yield	F <sub>MSY</sub>	•	•	0	Appropriate		MSY B <sub>trigger</sub>	•	•	0	Above trigger
Precautionary approach	F <sub>pa</sub> ,F <sub>lim</sub>	•	•	0	Harvested sustainably		B <sub>pa</sub> ,B <sub>lim</sub>	•	•	0	Full reproductive capacity
Management plan	F <sub>MGT</sub>	-	_	–	Not applicable		B <sub>MGT</sub>	_	_	_	Not applicable

### **Catch scenarios**

**Table 2** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. The basis for the catch scenarios. All weights are in tonnes and recruitment is in thousands.

Variable	Value	Notes
F <sub>ages (wr) 2-6</sub> (2019)	0.194	Based on catch 2019
SSB (2019)	1 528 855	Calculated based on catch constraint (in tonnes)
R <sub>age (wr) 0</sub> (2019)	26 191 234	Estimated by assessment model (in thousands)
R <sub>age (wr) 0</sub> (2020)	33 943 979	Weighted mean over 2009–2018 (in thousands)
Total catch (2010)	412 462	Agreed catches, including a 48% transfer (14 076 t) of C-fleet TAC to the A-fleet in
Total catch (2019)	412 462	the North Sea (in tonnes)

**Table 3** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. The intermediate year (2019) assumptions. Weights are in tonnes.

	F by fleet and total						NSAS catches by fleet				
F <sub>ages</sub> (wr) 2–6 A-fleet	F <sub>ages</sub> (wr) 0–1 B-fleet	F <sub>ages</sub> (wr) 0–1 C-fleet	F <sub>ages</sub> (wr) 0–1 D-fleet	F <sub>ages</sub> (wr) 2–6	F <sub>ages</sub> (wr) 0–1	Catches A-fleet	Catches B-fleet	Catches C-fleet	Catches D-fleet	SSB 2019	
0.193	0.046	0.002	0.002	0.194	0.052	39 7648	11 324	2 886	604	1 528 855	

**Table 4** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Annual catch scenarios. All weights are in tonnes.

		F va	alues by	fleet an	d total			NSAS catch	es by fleet				Bioma	ass*		
Basis	A-fleet F <sub>ages (wr) 2-6</sub>	B-fleet F <sub>ages (wr) 0-1</sub> ^^^^	C-fleet F <sub>ages (wr) 0-1</sub>	D-fleet F <sub>ages (wr) 0-1</sub>	Fages (wr) 2–6	Fages (wr) 0–1	A-fleet	B-fleet	C-fleet#	D-fleet#	Total stock catch	SSB 2020	SSB 2021 **	%SSB change ***	A-fleet **** %TAC change	% Advice change ^
MSY approach^^	0.24	0.046	0	0	0.24	0.048	418649	12413	0	0	431062	1286788	1167712	-15.8	8.7	38.4
Other scenarios																
F = F <sub>MSY</sub>	0.26	0.046	0	0	0.26	0.048	448772	12412	0	0	461185	1266292	1135230	-17.2	16.6	48.0
F = 0	0	0	0	0	0	0	0	0	0	0	0	1558516	1699799	1.9	-100.0	-100.0
No change in A-fleet TAC	0.22	0.046	0	0	0.22	0.047	385008	12414	0	0	397422	1309518	1204811	-14.3	0.0	27.6
A-fleet TAC reduction of																
15%	0.179	0.046	0	0	0.179	0.047	327257	12415	0	0	339672	1348146	1270564	-11.8	-15.0	9.0
A-fleet TAC increase of																
15%	0.26	0.046	0	0	0.26	0.048	442759	12412	0	0	455172	1270395	1141659	-16.9	15.0	46.1
$F = F_{2019}$	0.194	0.046	0	0	0.194	0.047	351394	12415	0	0	363809	1332061	1242761	-12.9	-8.7	16.8
F <sub>pa</sub>	0.30	0.046	0	0	0.30	0.048	503560	12411	0	0	515971	1228661	1077894	-19.6	30.8	65.6
F <sub>lim</sub>	0.34	0.046	0	0	0.34	0.048	555312	12409	0	0	567721	1192695	1025745	-22.0	44.2	82.2
$SSB_{2020} = B_{pa}$	0.75	0.046	0	0	0.75	0.050	957157	12395	0	0	969552	899590	679381	-41.2	148.6	211.2
$SSB_{2020} = B_{lim}$	0.95	0.046	0	0	0.95	0.051	1087848	12388	0	0	1100237	799618	585305	-47.7	182.6	253.1
SSB <sub>2020</sub> = MSY B <sub>trigger</sub>	0.131	0.046	0	0	0.132	0.047	249400	12417	0	0	261817	1399457	1363458	-8.5	-35.2	-16.0
MSY approach with C-																
and D-fleets catches and																
C-fleet TAC transfer##	0.25	0.046	0.002	0.002	0.25	0.052	429474	12392	2886	604	445357	1286867	1165739	-15.8	11.5	42.9
MSY approach with C-																
and D-fleets catches and																
no C-fleet TAC transfer###	0.24	0.046	0.003	0.002	0.24	0.053	415398	12388	5550	604	433940	1286942	1164080	-15.8	7.9	39.3

<sup>\*</sup> For autumn-spawning stocks, the SSB is determined at spawning time and is influenced by fisheries between 1 January and spawning.

<sup>\*\*</sup> Assuming same catch scenario in 2020 as in 2019.

<sup>\*\*\*</sup> SSB (2020) relative to SSB (2019).

<sup>\*\*\*\*</sup> A-fleet catches (2020) relative to TAC 2019 for the A-fleet (385 008 tonnes).

<sup>^</sup> Advice value 2020 relative to advice value 2019, using catches for all fleets.

<sup>^^</sup> Following the MSY advice rule  $F_{MSY} \times SSB_{2020}/MSY B_{trigger}$  (ICES, 2016).

<sup>^^^</sup> Status quo fishing mortality for the B-fleet for all catch options.

<sup>#</sup> The catch for C- and D-fleets are set to zero because of the zero catch advice given for 2020 for the western Baltic spring-spawning herring stock.

<sup>##</sup> Following the MSY advice rule FMSY × SSB2020/MSY Btrigger (ICES, 2016), assuming same catches as in 2019 for the C- and D-fleet and a 48% C-fleet TAC transfer to the A-fleet.

<sup>###</sup> Following the MSY advice rule F<sub>MSY</sub> × SSB<sub>2020</sub>/MSY B<sub>trigger</sub> (ICES, 2016), assuming same catches as in 2019 for the C- and D-fleet and no C-fleet TAC transfer to the A-fleet.

The advice has increased by 38.4% because the updated assessment revised the estimates of stock size upwards. The fishing pressure on this stock is calculated over ages 2–6. In recent years, however, relative fishing pressure on older ages (7+) is higher and the proportion of older fish in the catches is increased; this is expected to result in higher catches in 2020.

#### Basis of the advice

**Table 5** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. The basis of the advice.

Advice basis	ICES MSY approach.
	ICES has provided advice on the long-term management strategies of North Sea herring based on a joint
Management plan	request from the European Union and Norway (ICES, 2019c). Until such time as one of the options is agreed by
	both parties, ICES will continue to provide advice based on the MSY approach.

#### Quality of the assessment

The SSB has been estimated to be at a higher level for a number of years compared to the previous assessment (e.g. 16% higher for 2017). The 2019 assessment was particularly sensitive to the inclusion of the 2018 data from the herring acoustic survey (HERAS). The quality of the survey was evaluated and considered appropriate. The observed revision in the assessment cannot be fully explained but will require further scientific investigation.

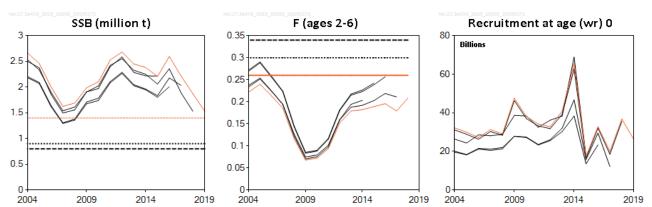


Figure 2 Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Historical assessment results. Final-year recruitment estimates included.

## Issues relevant for the advice

Although the advice for 2020 is for an increase in catch, a reduction in stock size is expected in the coming years. This is because there is a lack of strong incoming year classes, as well as a reduction in the contribution of the strong 2013 year class to the stock. The SSB in 2020 is expected to be below MSY B<sub>trigger</sub>, as a consequence of fishing at F<sub>MSY</sub>.

The fishing mortality on the oldest ages (7, 8+), are outside the age range in the reference fishing mortality ( $F_{ages (wr) 2-6}$ ). Fishing mortality on the older ages is estimated to be around 0.6, and their contribution to the predicted catch is expected to increase from 13% in 2019 to 30% in 2020. As a result, the catch advice for 2020 is substantially higher (38.4%) compared to the advice for 2019.

The recent management strategy evaluations (MSE) found that the ICES MSY advice rule with current  $F_{MSY}$  and MSY  $B_{trigger}$  was found not to be precautionary (probability of SSB <  $B_{lim}$  higher than 5%) under the assumptions of those simulations (ICES, 2019c). This can be explained by technical differences in the evaluation approach use for the MSE compared to the standard approach to estimate MSY reference points. Further investigation is now required to establish if the current reference points need to be re-defined. In the interim ICES will continue to use the current reference points for advice.

EU and Norway set the 2019 A-fleet TAC based on F<sub>MSY</sub>. To date, no management strategy has been agreed upon and the A-fleet advice for 2020 is based on the ICES MSY approach. For the B-fleet, fishing mortality is assumed to be *status quo* (0.046). The C-fleet and D-fleet catches are set to zero, which is consistent with the zero catch advised for WBSS.

NSAS herring has several spawning components, including the Downs herring that spawns in divisions 4.c and 7.d. These components are fished on individual spawning grounds and in a mixed-component fishery in the central and northern North Sea. Only the Downs component is caught in the southern North Sea. To help protect these components, sub-TACs have been set for divisions 4.c and 7.d, as well as for the remainder of the area. Such measures should be continued, in order to give continued protection to the different components. To ensure the maximum productivity of the stock, all populations within the stock should be protected under a long-term management strategy.

Catch scenarios in Table 4 by stock and area for North Sea Autumn Spawners (NSAS) and Western Baltic Spring Spawners (WBSS; ICES, 2019a) are based on fleet-wise predictions for five fleets (A, B, C, D, and F). The catch scenarios for the five fleets are interlinked and are, therefore, calculated simultaneously. This is to ensure that options are consistent among stocks and areas. For technical details see ICES (2019a).

When addressing NSAS options, the catch of NSAS by the A-, B-, C-, and D-fleets in Subarea 4 and divisions 3.a and 7.d have to be considered all at once. For the A-, C-, and D-fleets it is expected that a yearly varying portion of the catch consists of NSAS. The A-fleet catches almost exclusively NSAS herring in Subarea 4 and Division 7.d. The B-, C- and D-fleets in Division 3.a catch a mixture of WBSS and NSAS. The ICES advice is zero catch for WBSS; this implies that if the TAC for Division 3.a is set to zero in 2020, the catches of NSAS by the C- and D-fleets would also be zero.

Setting any TAC in Division 3.a and allowing for a transfer of catches from Division 3.a into the North Sea will result in an increased catch and fishing mortality of NSAS herring.

Catches of WBSS are expected to occur in the herring fishery in the eastern part of Division 4.a. Without additional area and seasonal restrictions on the herring fishery in the North Sea in 2020, the catch of WBSS in the North Sea will likely be of a similar magnitude (~ 2164 t in 2018).

According to a safety clause in the EU–Norway TAC-setting procedure for herring in Division 3.a, the method should not be applied to calculate the advised catch for the C-fleet as there are serious concerns about the status of the WBSS stock.

Activities that have a negative impact on the spawning habitat of herring should not occur, unless the effects of these activities have been assessed and shown not to be detrimental (ICES, 2003; 2015b).

#### **Reference points**

**Table 6** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Reference points, values, and their technical basis. Weights in tonnes.

Framework ^	Reference point	Value	Technical basis	Source
Tranicwork	MSY B <sub>trigger</sub>	1 400 000	5th percentile of B <sub>FMSY</sub>	ICES (2018b)
MSY approach	F <sub>MSY</sub>	0.26	Stochastic simulations with a segmented regression and Ricker stock–recruitment curve from the short time-series (2002–2016).	ICES (2018b)
	B <sub>lim</sub>	800 000	Breakpoint in the segmented regression of the stock–recruitment time-series (1947–2016).	ICES (2018b)
Drocoutionary	B <sub>pa</sub>	900 000	$B_{pa} = B_{lim} \times exp(1.645 \times \sigma)$ with $\sigma \approx 0.10$ , based on the average CV from the terminal assessment year.	ICES (2018b)
Precautionary approach	F <sub>lim</sub>	0.34	$F_{P50\%}$ leading to 50% probability of SSB > $B_{lim}$ with a segmented regression and Ricker stock–recruitment curve (2002–2016).	ICES (2018b)
	F <sub>pa</sub>	0.30	$F_{pa} = F_{lim} \times exp(-1.645 \times \sigma)$ with $\sigma \approx 0.08$ , based on the average <i>CV</i> from the terminal assessment year.	ICES (2018b)

### Basis of the assessment

**Table 7** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Basis of the assessment and advice.

ICES stock data category	1 ( <u>ICES, 2018c</u> ).
Assessment type	Age-based analytical assessment, SAM (ICES, 2019b) that uses catches in the model and in the forecast.
Input data	Commercial catches and five survey indices (IBTS Q1 1-ringer, IBTSO, LAI as SSB index, HERAS 1-8 ringers, IBTS Q3 0-5-ringers); annual maturity data from HERAS survey, natural mortalities from SMS North Sea multispecies model.
Discards	Discarding is considered to be negligible.
Indicators	None.
Other information	This stock was benchmarked in 2018 (ICES, 2018a). Reference points ( $B_{lim}$ , $F_{lim}$ , $F_{pa}$ , $F_{MSY}$ , and MSY $B_{trigger}$ ) were updated (ICES, 2018b).
Working group	Herring Assessment Working Group for the Area South of 62°N (HAWG)

# Information from stakeholders

The 48% TAC transfer from Division 3.a to the North Sea in 2019, assumed for the human consumption fishery on herring in the catch forecast, was based on information provided by the Pelagic Advisory Council (AC).

# History of the advice, catch, and management

**Table 8** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. ICES advice, TACs, official landings and ICES catch estimates. All weights are in tonnes.

Year	ICES advice	Predicted catch corresponding to advice	Agreed TAC*	B-fleet###	ICES landings in 4, 7.d #	ICES catch in 4, 7.d##	ICES catch of autumn spawners in 3.a, 4, 7.d
1987	TAC	610 000	600 000		625 000	625 000	792 000
1988	TAC	515 000	530 000		710 000	710 000	888 000
1989	TAC	514 000	514 000		669 000	717 000	787 000
1990	TAC	403 000	415 000		523 000	578 000	646 000
1991	TAC	423 000	420 000		537 000	588 000	657 000
1992	TAC	406 000	430 000		518 000	572 000	716 000
1993	No increase in yield at F > 0.3	340 000	430 000		495 000	540 000	671 000
1994	No increase in yield at F > 0.3	346 000	440 000		463 000	498 000	571 000
1995	Long-term gains expected at lower F	429 000	440 000		510 000	516 000	579 000
1996	50% reduction of agreed TAC**	156 000	156 000***	44 000	207 000	233 000	275 000
1997	F = 0.2	159 000	159 000	24 000	175 000	238 000	264 000
1998	F(adult) = 0.2, F(juv)< 0.1	254 000	254 000	22 000	268 000	338 000	392 000
1999	F(adult) = 0.2, F(juv)< 0.1	265 000	265 000	30 000	290 000	333 000	363 000
2000	F(adult) = 0.2, F(juv)< 0.1	265 000	265 000	36 000	284 000	346 000	388 000
2001	F(adult) = 0.2, F(juv)< 0.1	See scenarios	265 000	36 000	296 000	323 000	363 000
2002	F(adult) = 0.2, F(juv)< 0.1	See scenarios	265 000	36 000	304 000	353 000	372 000
2003	F(adult) = 0.25, F(juv) = 0.12	See scenarios	400 000	52 000	414 000	450 000	48 0000
2004	F(adult) = 0.25, F(juv) = 0.1	See scenarios	460 000	38 000	484 000	550 000	567 000
2005	F(adult) = 0.25, F(juv) = 0.1	See scenarios	535 000	50 000	568 000	639 000	664 000

Year	ICES advice	Predicted catch corresponding to advice	Agreed TAC*	B-fleet###	ICES landings in 4, 7.d #	ICES catch in 4, 7.d##	ICES catch of autumn spawners in 3.a, 4, 7.d
2006	F(adult) = 0.25, F(juv) = 0.12	See scenarios	455 000	43 000	490 000	511 000	515 000
2007	Bring SSB above B <sub>pa</sub> by 2008	See scenarios	341 000	32 000	361 000	388 000	407 000
2008	F(adult) = 0.17, F(juv) = 0.08 (MP)	See scenarios	201 000	19 000	228 000	245 000	258 000
2009	Adopt one of the new proposed HCRs	See scenarios	171 000	16 000	167 000	166 000	168 000
2010	F(adult) = 0.15, F(juv) = 0.05 (MP)	See scenarios	164 000	14 000	175 000	175 000	188 000
2011	See scenarios	See scenarios	200 000	16 000	218 000	218 000	226 000
2012	2008 Management plan	See scenarios	405 000	18 000	425 000	425 000	435 000
2013	2008 Management plan	See scenarios	478 000	14 000	498 000	498 000	511 000
2014	2008 Management plan	See scenarios	470 000	13 000	504 000	508 000	517 000
2015	2008 Management plan	See scenarios	445 000	16 000	480 000	482 000	494 000
2016	2014 Management strategy	555 086	518 000	13 000	559 700	559 900	563 600
2017	2014 Management strategy	458 926	481 608	11 375	491 693	491 693	498 662
2018	2014 Management strategy	517 891	600 588	9669	602 328	602 328	603 536
2019	ICES MSY approach	311 572	385 008	13 190			
2020	ICES MSY approach	431 062					

<sup>\*</sup> Catch in directed fishery in Subarea 4 and Division 7.d (A-fleet).

## History of the catch and landings

**Table 9** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Catch distribution by fleet and area in 2018 as estimated by ICES.

Area where NSAS are caught	Fleet	Fishery	NSAS 2018 catches (tonnes)
North Coa fisheries (Cuberca A Division 7 d)	Α	Directed herring fisheries	591 677
North Sea fisheries (Subarea 4, Division 7.d)	В	Bycatches of herring	8477
Division 2 a	С	Directed herring fisheries	3163
Division 3.a	D	Bycatches of herring	209

**Table 10** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Catch distribution in 2018 as estimated by ICES.

Catch (2018)	Lan	dings	Discards	
603 536 tonnes	Directed fishery 98.6%	Bycatch 1.4%	106 tonnes	
603 536 tonnes	603 43	0 tonnes	106 tonnes	

<sup>\*\*</sup> Revision of advice given in 1995.

<sup>\*\*\*</sup> Revised in June 1996, down from 263 000 tonnes.

<sup>#</sup> Landings are provided by ICES and do not in all cases correspond to official statistics.

<sup>##</sup> ICES catch includes unallocated and misreported landings, discards, and slipping. Includes catches for WBSS in the North Sea.

<sup>###</sup> Bycatch ceiling up to 2012 and TAC from 2013.

Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. History of commercial catch and landings of all stocks of herring caught in the North Sea; official or ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes. These figures do not in all cases correspond to the official statistics and cannot be used for legal purposes.

statistics and				2222	2222	2212	
Country	2005	2006	2007	2008	2009	2010	2011
Belgium	6	3	1	-	-	-	4
Denmark *	128380	102322	84697	62864	46238	45869	58726
Faroe Islands	738	1785	2891	2014	1803	3014	-
France	38829	49475	24909	30347	18114	17745	16693
Germany	46555	40414	14893	8095	5368	7670	9427
Netherlands	81531	76315	66393	23122	24552	23872	34708
Norway	156802	135361	100050	59321	50445	46816	60705
Poland	458	-	-	-	-	90	-
Sweden	13464	10529	15448	13840	5299	4395	8086
USSR/Russia	99	-	-	-	-	-	-
UK (England)	25311	22198	15993	11717	652	10770	11468
UK (Scotland)	73227	48428	35115	16021	14006	14373	18564
UK (N. Ireland)	2912	3531	638	331	-	-	17
Unallocated landings	57788	18764	26641	17151	-726	-	-
Total landings	626101	509125	387669	244823	165751	174614	218398
Discards	12824	1492	93	224	91	13	-
Total catch	638925	510617	387762	245047	165842	174627	218398
Parts of the catches that have	been allocated	to spring-spaw	ning stocks				
WBSS	7039	10954	1070	124	3941	774	308
Thames estuary **	74	65	2	7	48	85	2
	1						
Norw. spring spawners ***	417	626	685	2721	44560	56900	12178
Norw. spring spawners *** Country	2012	626 2013	685 2014	2721 2015	44560 2016	56900 2017	12178 2018
Country							2018
	2012	2013	2014	2015	2016	2017	2018
Country Belgium	2012	2013 14	2014 27	2015 18	2016 26	2017	2018 32
Country Belgium Denmark *	2012	2013 14	2014 27 124423	2015 18 113481	2016 26 133962	2017 13 110318	2018 32 132231
Country Belgium Denmark * Faroe Islands	2012 3 105707	2013 14 117367	2014 27 124423 118	2015 18 113481 981	2016 26 133962 833	2017 13 110318 442	2018 32 132231 497
Country  Belgium  Denmark *  Faroe Islands  France	2012 3 105707 - 23819	2013 14 117367 - 30122	2014 27 124423 118 29679 36767	2015 18 113481 981 30269	2016 26 133962 833 35177	2017 13 110318 442 28801	2018 32 132231 497 31505
Country  Belgium  Denmark * Faroe Islands  France  Germany  Netherlands	2012 3 105707 - 23819 24515	2013 14 117367 - 30122 46922	2014 27 124423 118 29679	2015 18 113481 981 30269 44377	2016 26 133962 833 35177 44231	2017 13 110318 442 28801 43707	2018 32 132231 497 31505 51636
Country  Belgium  Denmark *  Faroe Islands  France  Germany	2012 3 105707 - 23819 24515 72344	2013 14 117367 - 30122 46922 80462	2014 27 124423 118 29679 36767 74647 142002	2015 18 113481 981 30269 44377 70076	2016 26 133962 833 35177 44231 98859	2017 13 110318 442 28801 43707 84914	2018 32 132231 497 31505 51636 111302
Country  Belgium  Denmark * Faroe Islands  France  Germany  Netherlands  Norway	2012 3 105707 - 23819 24515 72344	2013 14 117367 - 30122 46922 80462	2014 27 124423 118 29679 36767 74647 142002 9830	2015 18 113481 981 30269 44377 70076	2016 26 133962 833 35177 44231 98859 150183	2017 13 110318 442 28801 43707 84914 134132	2018 32 132231 497 31505 51636 111302
Country Belgium Denmark * Faroe Islands France Germany Netherlands Norway Lithuania	2012 3 105707 - 23819 24515 72344 119253	2013 14 117367 - 30122 46922 80462 143718	2014 27 124423 118 29679 36767 74647 142002	2015 18 113481 981 30269 44377 70076 134349	2016 26 133962 833 35177 44231 98859	2017 13 110318 442 28801 43707 84914	2018 32 132231 497 31505 51636 111302 162594
Country  Belgium  Denmark *  Faroe Islands  France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland	2012 3 105707 - 23819 24515 72344 119253	2013 14 117367 - 30122 46922 80462 143718 - 15615	2014 27 124423 118 29679 36767 74647 142002 9830 15583	2015 18 113481 981 30269 44377 70076 134349 - 13184	2016 26 133962 833 35177 44231 98859 150183 - 16625	2017 13 110318 442 28801 43707 84914 134132 - 18518	2018 32 132231 497 31505 51636 111302 162594 - 19408
Country  Belgium  Denmark *  Faroe Islands  France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)	2012 3 105707 - 23819 24515 72344 119253 - 14092	2013 14 117367 - 30122 46922 80462 143718 - 15615 221 19079	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68	2015 18 113481 981 30269 44377 70076 134349 - 13184 183 18897	2016 26 133962 833 35177 44231 98859 150183 - 16625	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997	2018 32 132231 497 31505 51636 111302 162594 - 19408 515 19591
Country  Belgium  Denmark * Faroe Islands  France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)  UK (Scotland)	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346	2013 14 117367 - 30122 46922 80462 143718 - 15615 221	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119	2015 18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485	2017 13 110318 442 28801 43707 84914 134132 - 18518 868	2018 32 132231 497 31505 51636 111302 162594 - 19408 515 19591 66005
Country  Belgium  Denmark * Faroe Islands  France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)  UK (Scotland)  UK (N. Ireland)	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414	2013 14 117367 - 30122 46922 80462 143718 - 15615 221 19079 39243	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612	2015 18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514	2018 32 132231 497 31505 51636 111302 162594 - 19408 515 19591
Country  Belgium  Denmark * Faroe Islands France  Germany Netherlands Norway Lithuania Sweden Ireland UK (England) UK (Scotland) UK (N. Ireland) Unallocated landings	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414 4794	2013 14 117367 - 30122 46922 80462 143718 - 15615 221 19079 39243	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612 3292	2015 18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948 1516	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485 59240	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514 3469 0	2018 32 132231 497 31505 51636 111302 162594 - 19408 515 19591 66005 6916
Country  Belgium  Denmark * Faroe Islands  France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)  UK (Scotland)  UK (N. Ireland)  Unallocated landings  Total landings	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414 4794 321	2013 14 117367 - 30122 46922 80462 143718 - 15615 221 19079 39243 5738	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612 3292 507454	2015 18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485 59240 - 8 559756	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514 3469	2018 32 132231 497 31505 51636 111302 162594 - 19408 515 19591 66005 6916 0
Country  Belgium  Denmark * Faroe Islands  France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)  UK (Scotland)  UK (N. Ireland)  Unallocated landings	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414 4794 321 424608	2013 14 117367 - 30122 46922 80462 143718 - 15615 221 19079 39243 5738 - 498501	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612 3292 507454	2015 18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948 1516 481611	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485 59240 - 8 559756 170	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514 3469 0 491693	2018 32 132231 497 31505 51636 111302 162594 19408 515 19591 66005 6916 0 602232
Country  Belgium  Denmark * Faroe Islands France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)  UK (Scotland)  UK (N. Ireland)  Unallocated landings  Total landings  Discards/BMS  Total catch	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414 4794 321 424608	2013 14 117367 - 30122 46922 80462 143718 - 15615 221 19079 39243 5738 - 498501 - 498501	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612 3292 507454 31 507485	2015 18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948 1516	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485 59240 - 8 559756	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514 3469 0	2018 32 132231 497 31505 51636 111302 162594 19408 515 19591 66005 6916 0
Country  Belgium  Denmark * Faroe Islands  France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)  UK (Scotland)  UK (N. Ireland)  Unallocated landings  Total landings  Discards/BMS  Total catch  Parts of the catches that have	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414 4794 321 424608 - 424608	2013  14  117367  - 30122  46922  80462  143718  - 15615  221  19079  39243  5738  - 498501  to spring-spaw	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612 3292 507454 31 507485	2015  18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948 1516 481611 - 481611	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485 59240 - 8 559756 170 559926	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514 3469 0 491693	2018 32 132231 497 31505 51636 111302 162594 - 19408 515 19591 66005 6916 0 602232 96 602328
Country  Belgium  Denmark * Faroe Islands France  Germany  Netherlands  Norway  Lithuania  Sweden  Ireland  UK (England)  UK (Scotland)  UK (N. Ireland)  Unallocated landings  Total landings  Discards/BMS  Total catch  Parts of the catches that have	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414 4794 321 424608 - 424608 been allocated 2095	2013  14  117367  - 30122  46922  80462  143718  - 15615  221  19079  39243  5738  - 498501  - 498501  to spring-spaw	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612 3292 507454 31 507485 rning stocks	2015  18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948 1516 481611 - 481611	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485 59240 - 8 559756 170 559926	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514 3469 0 491693 - 491693	2018  32 132231 497 31505 51636 111302 162594 19408 515 19591 66005 6916 0 602232 96 602328
Country Belgium Denmark * Faroe Islands France Germany Netherlands Norway Lithuania Sweden Ireland UK (England) UK (Scotland) UK (N. Ireland) Unallocated landings Total landings Discards/BMS Total catch Parts of the catches that have	2012 3 105707 - 23819 24515 72344 119253 - 14092 - 25346 34414 4794 321 424608 - 424608	2013  14  117367  - 30122  46922  80462  143718  - 15615  221  19079  39243  5738  - 498501  to spring-spaw	2014 27 124423 118 29679 36767 74647 142002 9830 15583 68 19287 45119 6612 3292 507454 31 507485	2015  18 113481 981 30269 44377 70076 134349 - 13184 183 18897 48332 5948 1516 481611 - 481611	2016 26 133962 833 35177 44231 98859 150183 - 16625 127 20485 59240 - 8 559756 170 559926	2017 13 110318 442 28801 43707 84914 134132 - 18518 868 16997 49514 3469 0 491693	2018  32 132231  497 31505 51636 111302 162594  - 19408 515 19591 66005 6916 0 602232 96 602328

<sup>\*</sup> Including any bycatches in the industrial fishery.

<sup>\*\*</sup> Landings from the Thames estuary area are included in the North Sea catch figure for UK (England).

<sup>\*\*\*</sup> These catches (including some local fjord-type spring spawners) are taken by Norway under a separate quota south of 62°N and are not included in the Norwegian North Sea catch figure for this area.

Table 12 Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. The "Wonderful Table", which shows herring TACs and catches by different fleets, areas, and stocks. Weights are in thousand tonnes.

Subarea 4 and Division 7.d: TAC   Subarea 4 and Division 8.4 = b	Weights are in thousand tonnes.													
Agreed Divisions 4.a-b  13.9 18.8 18.0 18.0 18.0 18.0 18.0 18.0 18.0	Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agreed Divisions 4.c, 7.d   37.5   26.7   23.6   15.3   26.5   44.6   50.3   51.7   49.0   57.0   53.0   66.0   42.4	Subarea 4 and Division 7.d: TAC													
Bycatch ceiling in the small-mesh fishery*   31.9   18.8   16.0   13.6   16.5   17.9   14.4   13.1   15.7   13.4   11.4   9.7   13.2	Agreed Divisions 4.a–b	303.5	174.6						418.3	396.3			534.5	342.7
National catch divisions 4.a-b**   326.8   201.2   145.0   148.1   191.7   387.2   453.8   459.5   439   514.0   456.5   556.9	· ·	37.5	26.7	23.6	15.3	26.5	44.6	50.3	51.7	49.0	57.0	53.0	66.0	42.4
National catch divisions 4.a-b ***  132.8   20.1   145.0   148.1   191.7   387.2   453.8   465.9   439   514.0   456.5   556.9      Unallocated catch divisions 4.a-b ***  10.1   0.2   0.1   0.0   0.0     0.0   0.0   0.0   0.0      Total catch divisions 4.a-b ***  134.8   215.4   143.9   148.1   191.7   384.2   453.9   469.2   440.5   514.1   456.5   556.9      National catch divisions 4.c, 7.d ***  134.8   265.5   21.5   265.5   267.5   26	Bycatch ceiling in the small-mesh fishery *	31.9	18.8	16.0	13.6	16.5	17.9	14.4	13.1	15.7	13.4	11.4	9.7	13.2
Unallocated catch divisions 4.a-b ***	CATCH (Subarea 4 and Division 7.d)													
Discard/Slipping divisions 4.a-b ***   34.8   21.5.4   14.3.9   148.1   191.7   384.2   45.9   469.2   440.5   514.1   45.6   556.9   34.8   34.8   21.5.4   14.3.9   14.8   191.7   384.2   43.9   48.1   191.7   384.2   41.1   45.8   35.2   45.4   44.5   45.4   45.8   45.2   44.5   45.4   45.8   45.2   45.4   45.8   45.4   45.8   45.2   45.4   45.8   45.2   45.4   45.8   45.2   45.4   45.8   45.2   45.8	National catch divisions 4.a–b **	326.8	201.2	145.0	148.1	191.7	387.2	453.8	465.9	439	514.0	456.5	556.9	<u> </u>
Total catch divisions 4.a - b " 34.8 215.4 143.9 148.1 191.7 384.2 453.9 469.2 440.5 514.1 456.5 556.9 National catch divisions 4.c, 7.d ** 34.3 26.5 21.5 26.5 26.7 37.1 44.7 38.2 41.1 45.8 35.2 45.4 40.0 10.0 10.0 10.0 10.0 10.0 10.0 10	Unallocated catch divisions 4.a–b	21.9	14.0	-1.1	0.0	0.0	-3.0	0.0	3.3	1.5	0.0	0.0	0.0	<u> </u>
National catch divisions 4.c, 7.d ** 34.3 26.5 21.5 26.5 26.7 37.1 44.7 38.2 41.1 45.8 35.2 45.4 Unallocated catch divisions 4.c, 7.d 4.7 3.1 0.4 0.0 0.0 3.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Discard/slipping divisions 4.a–b ***	0.1	0.2	0.1	0.0	-	-	-	0.0	-	0.1	-	0.0	<u> </u>
Unallocated catch divisions 4.c, 7.d ***	Total catch divisions 4.a–b #	348.8	215.4	143.9	148.1	191.7	384.2	453.9	469.2	440.5	514.1	456.5	556.9	
Discard/slipping divisions 4.c, 7.d ***	National catch divisions 4.c, 7.d **	34.3	26.5	21.5	26.5	26.7	37.1	44.7	38.2	41.1	45.8	35.2	45.4	
Total catch divisions 4.c, 7.d   39.0   29.6   21.9   26.5   26.7   40.4   44.7   38.2   41.1   45.8   35.2   45.5   10	Unallocated catch divisions 4.c, 7.d	4.7	3.1	0.4	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	
Total catch Subarea 4 and Division 7.d as used by ICES   38.8   245.0   165.8   174.6   218.4   424.6   498.5   507.5   481.6   59.9   491.7   602.3	Discard/slipping divisions 4.c, 7.d ***	1	-	-	1	-	-	-	-	-	0.1	-	0.1	
CATCH BY FLEET/STOCK (Subarea 4 and Division 7.d) ##   North Sea autumn spawners directed fisheries (A-fleet)   379.6   236.3   152.1   164.8   209.2   411.8   489.9   490.5   471.5   543.6   484.1   591.7	Total catch divisions 4.c, 7.d	39.0	29.6	21.9	26.5	26.7	40.4	44.7	38.2	41.1	45.8	35.2	45.5	
North Sea autumn spawners directed fisheries (A-fleet)   379.6   236.3   152.1   164.8   209.2   411.8   489.9   490.5   471.5   543.6   484.1   591.7	Total catch Subarea 4 and Division 7.d as used by ICES #	387.8	245.0	165.8	174.6	218.4	424.6	498.5	507.5	481.6	559.9	491.7	602.3	
North Sea autumn spawners industrial (B-fleet) 7.1 8.6 9.8 9.1 8.9 10.6 8.1 14.0 7.9 14.5 7.0 8.5 North Sea autumn spawners in Subarea 4 and Division 7.d total 386.7 244.9 161.9 173.9 218.1 422.5 498.1 504.5 479.4 558.1 491.1 600.2 Baltic-20-24-type spring spawners in Subarea 4 1.1 0.1 3.9 0.8 0.3 2.1 0.5 3.0 2.2 1.8 0.6 2.2 Coastal-type spring spawners on Subarea 4 1.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CATCH BY FLEET/STOCK (Subarea 4 and Division 7.d) ##													
North Sea autumn spawners in Subarea 4 and Division 7.d total 386.7 244.9 161.9 173.9 218.1 422.5 498.1 504.5 479.4 558.1 491.1 600.2 Baltic-20–24-type spring spawners in Subarea 4 1.1 0.1 3.9 0.8 0.3 2.1 0.5 3.0 2.2 1.8 0.6 2.2 Coastal-type spring spawners (0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	North Sea autumn spawners directed fisheries (A-fleet)		236.3	152.1	164.8	209.2	411.8	489.9	490.5	471.5	543.6	484.1	591.7	
Baltic-20-24-type spring spawners in Subarea 4   1.1   0.1   3.9   0.8   0.3   2.1   0.5   3.0   2.2   1.8   0.6   2.2	North Sea autumn spawners industrial (B-fleet)	7.1	8.6	9.8	9.1	8.9	10.6	8.1	14.0	7.9	14.5	7.0	8.5	
Coastal-type spring spawners  O.0 O.0 O.0 O.0 O.1 O.0 O.1 O.0	North Sea autumn spawners in Subarea 4 and Division 7.d total		244.9	161.9	173.9	218.1	422.5	498.1	504.5	479.4	558.1	491.1	600.2	
Norw. spring spawners caught under a separate quota in Subarea 4 ### 0.7 2.7 44.6 56.9 12.2 9.6 3.2 2.3 2.2 0.1 0.3  Division 3.a: TAC  Agreed herring TAC  Agreed her	Baltic-20–24-type spring spawners in Subarea 4		0.1	3.9	0.8	0.3		0.5		2.2		0.6	2.2	
Division 3.a: TAC   Agreed herring TAC   69.4   51.7   37.7   33.9   30.0   45.0   55.0   46.8   43.6   51.1   50.7   48.4   29.3	Coastal-type spring spawners		0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
Agreed herring TAC         69.4         51.7         37.7         33.9         30.0         45.0         55.0         46.8         43.6         51.1         50.7         48.4         29.3           Bycatch ceiling in the small-mesh fishery         15.4         11.5         8.4         7.5         6.7         8.2         29.9         26.8         23.3         23.3         20.0         22.7         31.2         28.9         27.8         29.9         26.8         23.3         23.2	Norw. spring spawners caught under a separate quota in Subarea 4 ###		2.7	44.6	56.9	12.2	9.6	3.2	2.3	2.2		0.1	0.3	
Second Control (Division 3.a)   Second Control (Control	Division 3.a: TAC													
CATCH (Division 3.a)         National catch       47.3       38.2       38.8       37.3       20.0       27.7       31.2       28.9       27.8       29.9       26.8       23.3         Catch as used by ICES       47.4       38.2       38.8       37.3       20.0       27.7       31.2       28.9       27.8       29.9       26.8       23.3         CATCH BY FLEET/STOCK (Division 3.a) ##         Autumn spawners human consumption (C-fleet)       16.4       9.2       5.1       12.0       6.6       7.8       11.8       9.5       10.2       4.1       7.4       3.2         Autumn spawners mixed clupeoid (D-fleet)       3.4       3.7       1.5       1.8       1.8       4.4       1.6       3.3       4.4       1.4       0.2       0.2         Autumn spawners in Division 3.a total       19.8       12.9       6.5       13.8       8.4       12.2       13.4       12.8       14.7       5.5       7.6       3.4         Spring spawners mixed clupeoid (D-fleet)       25.3       23.0       29.4       23.0       10.8       14.5       16.6       15.4       11.3       23.3       19.0       19.7         Spring spawners mixed clupeoid (D-fleet) <t< td=""><td>Agreed herring TAC</td><td>69.4</td><td>51.7</td><td>37.7</td><td>33.9</td><td>30.0</td><td>45.0</td><td>55.0</td><td>46.8</td><td>43.6</td><td>51.1</td><td>50.7</td><td>48.4</td><td>29.3</td></t<>	Agreed herring TAC	69.4	51.7	37.7	33.9	30.0	45.0	55.0	46.8	43.6	51.1	50.7	48.4	29.3
National catch 47.3 38.2 38.8 37.3 20.0 27.7 31.2 28.9 27.8 29.9 26.8 23.3 Catch as used by ICES 47.4 38.2 38.8 37.3 20.0 27.7 31.2 28.9 27.8 29.9 26.8 23.3 CATCH BY FLEET/STOCK (Division 3.a) ##  Autumn spawners human consumption (C-fleet) 16.4 9.2 5.1 12.0 6.6 7.8 11.8 9.5 10.2 4.1 7.4 3.2 Autumn spawners mixed clupeoid (D-fleet) 3.4 3.7 1.5 1.8 1.8 4.4 1.6 3.3 4.4 1.4 0.2 0.2 0.2 Autumn spawners in Division 3.a total 19.8 12.9 6.5 13.8 8.4 12.2 13.4 12.8 14.7 5.5 7.6 3.4 Spring spawners human consumption (C-fleet) 25.3 23.0 29.4 23.0 10.8 14.5 16.6 15.4 11.3 23.3 19.0 19.7 Spring spawners mixed clupeoid (D-fleet) 2.3 2.2 2.9 0.5 0.8 1.0 1.3 0.6 1.8 1.1 0.2 0.2 Spring spawners in Division 3.a total 27.6 25.2 32.3 23.5 11.6 15.5 17.9 16.1 13.1 24.4 19.2 19.9	Bycatch ceiling in the small-mesh fishery	15.4	11.5	8.4	7.5	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Catch as used by ICES 47.4 38.2 38.8 37.3 20.0 27.7 31.2 28.9 27.8 29.9 26.8 23.3 CATCH BY FLEET/STOCK (Division 3.a) ##  Autumn spawners human consumption (C-fleet) 16.4 9.2 5.1 12.0 6.6 7.8 11.8 9.5 10.2 4.1 7.4 3.2 Autumn spawners mixed clupeoid (D-fleet) 3.4 3.7 1.5 1.8 1.8 4.4 1.6 3.3 4.4 1.4 0.2 0.2 Autumn spawners in Division 3.a total 19.8 12.9 6.5 13.8 8.4 12.2 13.4 12.8 14.7 5.5 7.6 3.4 Spring spawners human consumption (C-fleet) 25.3 23.0 29.4 23.0 10.8 14.5 16.6 15.4 11.3 23.3 19.0 19.7 Spring spawners mixed clupeoid (D-fleet) 2.3 2.2 2.9 0.5 0.8 1.0 1.3 0.6 1.8 1.1 0.2 0.2 Spring spawners in Division 3.a total 27.6 25.2 32.3 23.5 11.6 15.5 17.9 16.1 13.1 24.4 19.2 19.9	CATCH (Division 3.a)													
CATCH BY FLEET/STOCK (Division 3.a) ##         Autumn spawners human consumption (C-fleet)       16.4       9.2       5.1       12.0       6.6       7.8       11.8       9.5       10.2       4.1       7.4       3.2         Autumn spawners mixed clupeoid (D-fleet)       3.4       3.7       1.5       1.8       1.8       4.4       1.6       3.3       4.4       1.4       0.2       0.2         Autumn spawners in Division 3.a total       19.8       12.9       6.5       13.8       8.4       12.2       13.4       12.8       14.7       5.5       7.6       3.4         Spring spawners human consumption (C-fleet)       25.3       23.0       29.4       23.0       10.8       14.5       16.6       15.4       11.3       23.3       19.0       19.7         Spring spawners mixed clupeoid (D-fleet)       2.3       2.2       2.9       0.5       0.8       1.0       1.3       0.6       1.8       1.1       0.2       0.2         Spring spawners in Division 3.a total       27.6       25.2       32.3       23.5       11.6       15.5       17.9       16.1       13.1       24.4       19.2       19.9	National catch	47.3	38.2	38.8	37.3	20.0	27.7	31.2	28.9	27.8	29.9	26.8	23.3	
Autumn spawners human consumption (C-fleet)       16.4       9.2       5.1       12.0       6.6       7.8       11.8       9.5       10.2       4.1       7.4       3.2         Autumn spawners mixed clupeoid (D-fleet)       3.4       3.7       1.5       1.8       1.8       4.4       1.6       3.3       4.4       1.4       0.2       0.2         Autumn spawners in Division 3.a total       19.8       12.9       6.5       13.8       8.4       12.2       13.4       12.8       14.7       5.5       7.6       3.4         Spring spawners human consumption (C-fleet)       25.3       23.0       29.4       23.0       10.8       14.5       16.6       15.4       11.3       23.3       19.0       19.7         Spring spawners mixed clupeoid (D-fleet)       2.3       2.2       2.9       0.5       0.8       1.0       1.3       0.6       1.8       1.1       0.2       0.2         Spring spawners in Division 3.a total       27.6       25.2       32.3       23.5       11.6       15.5       17.9       16.1       13.1       24.4       19.2       19.9	Catch as used by ICES	47.4	38.2	38.8	37.3	20.0	27.7	31.2	28.9	27.8	29.9	26.8	23.3	
Autumn spawners mixed clupeoid (D-fleet)       3.4       3.7       1.5       1.8       1.8       4.4       1.6       3.3       4.4       1.4       0.2       0.2         Autumn spawners in Division 3.a total       19.8       12.9       6.5       13.8       8.4       12.2       13.4       12.8       14.7       5.5       7.6       3.4         Spring spawners human consumption (C-fleet)       25.3       23.0       29.4       23.0       10.8       14.5       16.6       15.4       11.3       23.3       19.0       19.7         Spring spawners mixed clupeoid (D-fleet)       2.3       2.2       2.9       0.5       0.8       1.0       1.3       0.6       1.8       1.1       0.2       0.2         Spring spawners in Division 3.a total       27.6       25.2       32.3       23.5       11.6       15.5       17.9       16.1       13.1       24.4       19.2       19.9	CATCH BY FLEET/STOCK (Division 3.a) ##													
Autumn spawners in Division 3.a total       19.8       12.9       6.5       13.8       8.4       12.2       13.4       12.8       14.7       5.5       7.6       3.4         Spring spawners human consumption (C-fleet)       25.3       23.0       29.4       23.0       10.8       14.5       16.6       15.4       11.3       23.3       19.0       19.7         Spring spawners mixed clupeoid (D-fleet)       2.3       2.2       2.9       0.5       0.8       1.0       1.3       0.6       1.8       1.1       0.2       0.2         Spring spawners in Division 3.a total       27.6       25.2       32.3       23.5       11.6       15.5       17.9       16.1       13.1       24.4       19.2       19.9	Autumn spawners human consumption (C-fleet)	16.4	9.2	5.1	12.0	6.6	7.8	11.8	9.5	10.2	4.1	7.4	3.2	1
Spring spawners human consumption (C-fleet)       25.3       23.0       29.4       23.0       10.8       14.5       16.6       15.4       11.3       23.3       19.0       19.7         Spring spawners mixed clupeoid (D-fleet)       2.3       2.2       2.9       0.5       0.8       1.0       1.3       0.6       1.8       1.1       0.2       0.2         Spring spawners in Division 3.a total       27.6       25.2       32.3       23.5       11.6       15.5       17.9       16.1       13.1       24.4       19.2       19.9	Autumn spawners mixed clupeoid (D-fleet)	3.4	3.7	1.5	1.8	1.8	4.4	1.6	3.3	4.4	1.4	0.2	0.2	1
Spring spawners mixed clupeoid (D-fleet)         2.3         2.2         2.9         0.5         0.8         1.0         1.3         0.6         1.8         1.1         0.2         0.2           Spring spawners in Division 3.a total         27.6         25.2         32.3         23.5         11.6         15.5         17.9         16.1         13.1         24.4         19.2         19.9	Autumn spawners in Division 3.a total	19.8	12.9	6.5	13.8	8.4	12.2	13.4	12.8	14.7	5.5	7.6	3.4	
Spring spawners in Division 3.a total         27.6         25.2         32.3         23.5         11.6         15.5         17.9         16.1         13.1         24.4         19.2         19.9	Spring spawners human consumption (C-fleet)	25.3	23.0	29.4	23.0	10.8	14.5	16.6	15.4	11.3	23.3	19.0	19.7	1
	Spring spawners mixed clupeoid (D-fleet)	2.3	2.2	2.9	0.5	0.8	1.0	1.3	0.6	1.8	1.1	0.2	0.2	1
North Sea autumn spawners: Total as used by ICES 406.5 257.9 168.4 187.6 226.5 434.6 511.4 517.3 494.1 563.6 498.7 603.5	Spring spawners in Division 3.a total	27.6	25.2	32.3	23.5	11.6	15.5	17.9	16.1	13.1	24.4	19.2	19.9	I
	North Sea autumn spawners: Total as used by ICES		257.9	168.4	187.6	226.5	434.6	511.4	517.3	494.1	563.6	498.7	603.5	

<sup>\*</sup> Divisions 4.a-b and EC zone of Division 2.a. \*\* ICES estimates. \*\*\* Incomplete, only some countries providing discard information. \* Includes spring spawners not included in assessment. \*\*\* Based on sum-of-products (number × mean weight-at-age). \*\*\*\* These catches (including local fjord-type spring spawners) are taken by Norway under a separate quota south of 62°N and are not included in the Norwegian North Sea catch figure.

# Summary of the assessment

**Table 13** Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. Assessment summary. Weights are in tonnes and numbers in thousands. High and low refer to the 95% confidence intervals.

Vear   Recruttment   Recruttment   Recruttment   Recruttment   Recruttment   SSR*   SSR high   SSR Low   Catch   (Fe   Reges 7-6   High   Low   Low   1947   56498800   104247000   305020600   54891310   7710600   3921930   581760   0.120   0.179   0.081   1948   56131100   98747300   31950700   4474570   6233520   2311960   502100   0.120   0.179   0.081   1949   50827000   88745200   29110200   4340320   5971340   3154810   5085500   0.132   0.189   0.092		numbers in thousands. High and low refer to the 95% confidence intervals.										
1948   56131100   98727300   31002700   4476700   4476700   623520   3211960   502100   0.120   0.179   0.081     1949   50827000   88745200   29110200   4340320   5971340   3154810   508500   0.132   0.189   0.092     1950   69744900   119042000   40862600   4222600   5853030   3158430   491700   0.133   0.189   0.092     1951   6225800   10484000   36556080   4110430   5561700   3037860   600400   0.167   0.23   0.121     1952   59223700   98391500   35647800   4115720   5589640   3030460   664400   0.170   0.24   0.122     1953   59817800   96289100   37167070   3839305   5314800   3851630   6988500   0.170   0.25   0.127     1954   57013600   90017000   36110400   3650060   5314800   2657420   762900   0.198   0.28   0.141     1955   48110300   7518800   30788800   3650060   3486750   5294780   880600   0.197   0.27   0.144     1956   35317100   54958400   22695300   3280040   4476450   2403400   675200   0.197   0.27   0.144     1957   38860000   34146000   54954500   296060   0.02050   2179800   682900   0.21   0.29   0.153     1958   38872400   5066000   21377800   3852880   4768970   2691780   784500   0.22   0.30   0.162     1959   37590200   59428600   223776800   3852880   4768970   2691780   784500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2963110   3921680   2238850   696700   0.24   0.32   0.178     1962   31736100   4857400   20253400   2675700   3238850   696700   0.24   0.33   0.162     1963   42242300   63275900   28200500   28200500   2830280   3687540   2266490   716000   0.194   0.25   0.151     1964   44126900   65784400   20253880   6969280   2201420   696700   0.24   0.31   0.190     1965   2543700   33033900   15233800   1627150   1936790   1367010   895500   0.48   0.57   0.35     1966   22437300   331497600   2095860   57620   675423   485464   717800   0.98   1.14   0.83     1967   28707600   42882700   476938   589260   384571   565100   0.98   1.14   0.83     1967   28707600   4282600   5454630   296816   510760   385500   38460   385500   0.08   0.08   0.	1948	Year				SSB*	SSB High	SSB Low				
1948   56131100   98747300   31906700   4474570   6733520   3211960   502100   0.120   0.173   0.083   1950   69744900   119042000   40862600   4292560   5835030   3158430   481700   0.132   0.189   0.092   1951   62253800   104884000   36950800   4110430   5651700   3037860   600400   0.167   0.23   0.121   1952   5922700   98391500   35647800   4111720   5859640   3030460   664400   0.170   0.24   0.122   1953   59817800   96289100   37160700   3893050   5314800   2851630   698500   0.177   0.25   0.127   1953   59817800   96289100   37160700   3893050   5314800   2851630   698500   0.177   0.25   0.127   1953   57013600   90017000   36110400   3655060   5013480   5657420   762900   0.139   0.28   0.141   1955   48110300   75188900   3278300   3280040   4476450   2430400   675200   0.139   0.28   0.141   1955   48110300   75188900   22695300   3280040   4476450   243040   675200   0.1397   0.27   0.140   1956   35317100   54958400   25695300   3280040   4476450   243040   675200   0.1397   0.27   0.144   1955   48110300   54958400   25895450   296960   4022050   2179800   6622000   0.21   0.29   0.153   1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162   1959   3759000   5942860   2375800   358280   4768970   5691780   784500   0.22   0.30   0.162   1959   3759000   5942860   2375800   358280   4768970   5691780   784500   0.22   0.30   0.162   1959   3759000   5942860   2375800   358980   368750   2201420   666700   0.24   0.30   0.178   1960   15840000   24976400   10045700   2963110   391680   2338850   696200   0.21   0.28   0.158   1964   4416900   65784400   20723400   199694   2617690   1523400   627800   0.27   0.35   0.21   1963   42242300   63275900   28200500   28200500   28200500   387540   2264090   716000   0.194   0.25   0.151   1966   2437300   3303900   15238000   367470   3240220   136800   387540   2264090   716000   0.194   0.25   0.151   1966   2437300   3303900   15238000   687540   2675500   267500   0.087700   332972   608600   3876710	1948   56131100   98747300   31906700   4474570   6233520   2211960   502100   0.120   0.173   0.083   1999   50877000   88745200   2291020   4340230   5971340   318401   508500   0.123   0.198   0.098   1951   62253800   104884000   36590800   4115720   0.038   0.194   0.098   1951   62253800   104884000   36590800   4115720   0.038   0.098   0.	1947				5499130	7710600	3921930			-	
1995   69827000   88745200   29110200   4340320   5971340   3154810   508800   0.132   0.189   0.092	1995   6927000   88745200   29110200   4340320   5971340   3154810   508500   0.132   0.189   0.092     1995   65274090   11092000   4085600   429505   8385030   3158430   491700   0.138   0.194   0.098     1995   65253800   104884000   36950800   4110430   5561700   3037860   600400   0.167   0.23   0.121     1993   59817800   96289100   37160700   3893950   5314800   2851630   698500   0.177   0.25   0.127     1994   57013600   90017000   36110400   3650060   501480   2851630   698500   0.177   0.25   0.127     1995   48110300   75188900   30738300   3546300   4846750   5594780   806400   0.199   0.27   0.140     1995   48110300   75188900   30738300   3546300   4846750   5594780   806400   0.199   0.27   0.140     1995   48110300   75188900   30738300   3463600   4846750   5594780   806400   0.199   0.27   0.140     1995   4816000   48464500   289600   4027056   2179800   682900   0.197   0.27   0.144     1995   48580000   31446000   54945400   290690   4027056   2179800   682900   0.197   0.29   0.133     1995   3759000   50495800   21327400   2407560   3269200   1773150   670500   0.22   0.30   0.152     1996   15840000   24976400   10045700   2263110   3921680   2238850   696200   0.21   0.28   0.158     1996   15840000   24976400   10045700   2263110   3921680   2238850   696200   0.21   0.28   0.158     1996   15840000   24976400   10045700   2850320   2569490   716000   0.094   0.25   0.151     1996   2437300   33033000   15233800   1027150   2549280   1775300   676700   0.27   0.35   0.21     1996   2437300   33033000   15233800   1030210   1211090   876347   695500   0.47   0.57   0.39     1996   2437300   33033000   15233800   1030210   1211090   876347   695500   0.64   0.57   0.51     1996   24375000   2487600   2989800   2685400   2776800   0.07   0.07   0.39   0.151     1996   2437000   2438300   1547300   327240   240253   246850   346900   0.07   0.07   0.39   0.151     1997   25934000   43837400   20085600   276200   674623   400533   400600   0.07   0.07   0.07     1996   2437000   2438700	1948									0.173	
1951   62253800   104884000   36950800   4110430   5561700   3037860   600400   0.167   0.23   0.121   1952   59223700   98391500   35647800   4115720   5589640   3030460   664400   0.170   0.24   0.122   1954   57013600   90017000   36110400   3650060   5013480   2657420   762900   0.198   0.28   0.141   1955   48110300   75188900   30783800   3546300   4846750   2594780   806400   0.195   0.27   0.144   1956   35317100   54958400   22695300   3280040   4476450   2249000   675200   0.198   0.27   0.144   1957   85860000   134146000   54954500   2960960   4022050   2179800   682900   0.21   0.22   0.153   0.162   1959   37590200   59428600   23776800   3582880   4766970   22179800   682900   0.22   0.30   0.162   1959   37590200   59428600   23776800   3582880   4766970   221800   682900   0.24   0.32   0.178   1956   15840000   24976400   10045700   296311   3921680   2238850   696200   0.24   0.32   0.178   1951   70192800   109205000   45117300   2853720   3699280   2230420   696700   0.24   0.31   0.190   1953   42242300   63275900   22200500   2890880   3687500   2266490   716000   0.194   0.25   0.151   1964   44126900   6578400   229059500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1966   22437300   33033900   15233800   1627150   1936790   1376500   0.88   0.35   0.23   1966   22437300   33033900   15233800   1627150   1936790   1366800   0.47   0.55   0.51   1964   44126900   2576500   2595800   2637470   2340220   2146850   871200   0.28   0.35   0.23   1966   22437300   33033900   15233800   1627150   1936790   1366800   0.47   0.55   0.51   1968   22875000   228750500   2887500   2637470   2340220   246850   871200   0.28   0.35   0.23   1966   22437300   33038900   1523800   1637150   1936790   1366800   0.47   0.57   0.55   1968   23523400   43387400   2008960   572620   675423   485464   717800   0.38   1.14   0.83   1997   22495300   3257500   2880500   2880500   2880500   2876500   2876500   2876500   0.28   0.35   0.21   1.97   1.97   1.97   1.97   1.97   1.97   1.97   1.9	1951   62253800   104884000   36950800   4110430   5561700   3037860   600400   0.167   0.23   0.121     1952   59223700   98391500   35647800   4110730   5589640   3030460   664400   0.170   0.24   0.122     1953   59817800   90017000   36110400   3650060   5013480   2651420   762900   0.198   0.28   0.141     1955   48110300   75189900   3073800   356300   3650600   2013480   2657420   762900   0.198   0.28   0.141     1955   48110300   75189900   30738300   3546300   4846750   2594780   806400   0.197   0.27   0.140     1956   35317100   54958400   22695300   2280040   4476450   2403400   675200   0.197   0.27   0.144     1957   85860000   13416000   54954500   280600   4022050   2179800   682900   0.12   0.29   0.153     1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162     1959   37590200   59428600   23775800   382880   4768970   2691780   784500   0.24   0.32   0.178     1960   15460000   24976400   10045700   2963110   3921680   2238850   665020   0.21   0.28   0.158     1961   70192800   109205000   45117300   2853720   369280   2201420   696700   0.24   0.31   0.190     1962   31758100   4875400   20723400   199940   2617690   1523400   6277800   0.27   0.35   0.21     1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.194   0.25   0.15     1964   4415690   6578400   29599500   263470   2364904   216650   871200   0.28   0.35   0.23     1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.48   0.57   0.35     1966   22437300   33033900   15238800   130010   130790   1367101   895500   0.48   0.57   0.41     1967   28707600   4208200   19583800   130010   130790   136710   895500   0.48   0.57   0.41     1969   23134200   4287600   29193800   1627150   389570   386740   2565500   0.48   0.57   0.41     1971   22495300   22548500   19687300   352720   460817   271550   56100   0.98   1.14   0.83     1973   7943080   11566800   5456630   296816   603885   384571   563100   0.98   1.14   0.83	_									0.189	
1951   62253800   104884000   36950800   4110430   5561700   3037860   600400   0.167   0.23   0.121   1952   59223700   98391500   35647800   4115720   5589640   3030460   664400   0.170   0.24   0.122   1954   57013600   90017000   36110400   3650060   5013480   2657420   762900   0.198   0.28   0.141   1955   48110300   75188900   30738300   3566300   4846750   2594780   806400   0.195   0.27   0.144   1956   35317100   54958400   22695300   3280040   4476450   224900   675200   0.198   0.27   0.144   1957   85860000   134146000   54954500   2260500   4022050   2179800   682900   0.21   0.29   0.153   0.162   1959   37590200   59428600   23776800   3582880   4768970   22695800   2778800   0.22   0.30   0.162   1959   37590200   59428600   23776800   3582880   4768970   2269580   2238850   696200   0.21   0.28   0.138   1956   15840000   24976400   10045700   296311   3921680   2238850   696200   0.21   0.28   0.158   1951   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190   1963   42242300   63275900   22200500   2839880   368750   2266499   716000   0.14   0.25   0.151   1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1966   22437300   33033900   15239800   1627150   1936790   1366800   0.47   0.57   0.55   1968   22437300   33033900   15239800   16372150   1936790   136701   895500   0.48   0.55   0.41   1996   2387060   42082200   19583800   16372150   1936790   386540   477800   0.47   0.57   0.55   1968   22532400   42082200   19583800   16372150   1936790   386570   0.66   0.75   0.55   1968   22532400   42082200   19583800   16372150   1936790   386570   0.64   0.75   0.55   1968   23534700   22087600	1951   62253800   104884000   36950800   4110430   5561700   3037860   600400   0.167   0.23   0.121     1953   59213700   98391500   35647800   41119730   5589640   3030460   664400   0.170   0.24   0.122     1953   598117800   90017000   36110400   3650060   5011480   2851630   698500   0.177   0.25   0.127     1954   57013600   90017000   36110400   3650060   5011480   2657420   762900   0.198   0.28   0.141     1955   48110300   75188900   30783800   3546300   4846750   2594780   806400   0.197   0.27   0.140     1956   353117100   54958400   22695300   3280040   447450   2403400   675200   0.197   0.27   0.144     1957   8586000   13414600   5495450   259600   4022050   2179800   682900   0.12   0.29   0.153     1958   32827400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162     1959   37590200   59428600   223776800   3582880   4768970   2691780   784500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2963110   3921680   2238850   696700   0.24   0.32   0.178     1962   31786100   4875400   20723400   196940   2617690   1623400   6677800   0.24   0.31   0.190     1963   42242300   63275900   28200500   2890980   868740   2266490   716000   0.194   0.25   0.15     1964   44126900   6578400   25995900   2637470   3496240   2266490   716000   0.194   0.25   0.15     1966   22437300   32317800   1426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39     1966   22437300   33033900   15238800   103010   1211090   876347   685500   0.48   0.57   0.41     1971   22495300   42817000   19824000   476038   859960   388571   563100   0.94   1.08   0.81     1971   22193200   4286700   9299500   2637670   388570   386570   386500   0.98   1.14   0.83     1971   2219300   4287000   4486800   476038   839960   388571   563100   0.94   1.08   0.81     1971   2219300   4287000   476038   589960   388571   563100   0.98   1.14   0.83     1973   7943080   11566800   5456630   296816   510956   388571   563100   0.98   1.14   0.83     1973   7943080   115668	1950	69744900	119042000	40862600	4292960	5835030	3158430	491700	0.138	0.194	0.098
1952   59223700   98391500   3766700   4115720   5889640   3030460   664400   0.170   0.24   0.122   1953   59817800   96289100   37160700   3893050   5314800   2851630   698500   0.177   0.25   0.127   1955   757013600   90017000   36110400   3650060   5013480   2657420   762900   0.188   0.28   0.141   1955   3317100   5985400   22695300   3280040   4476450   2493400   675200   0.197   0.27   0.140   1955   83817100   5985400   25695300   3280040   4476450   2493400   675200   0.197   0.27   0.140   1957   83860000   134146000   54954500   2960960   4022050   2179800   682900   0.21   0.29   0.153   0.1	1952   59223700   98391500   33547800   4115720   558940   3030460   664400   0.170   0.24   0.127     1954   57013600   960289100   37160700   3893005   3314800   2251630   698500   0.177   0.25   0.127     1955   48110300   75188900   30783800   3546300   4846750   2594780   806400   0.198   0.28   0.141     1955   48110300   75188900   30783800   3584300   4846750   2594780   806400   0.195   0.27   0.140     1956   35317100   59458400   2269300   3280040   4476450   2403400   675700   0.197   0.27   0.144     1957   85860000   134146000   54954500   2960960   4022050   2179800   682900   0.21   0.29   0.153     1958   32872400   50667000   21327400   24007650   3669200   1773150   670500   0.22   0.30   0.162     1959   37590200   59428600   23776800   3822880   4768970   7691780   784500   0.24   0.32   0.178     1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.32   0.188     1963   4242400   63275900   2800500   2890980   3667540   2266490   716000   0.24   0.31   0.199     1963   4242400   63275900   2800500   289080   3667540   2266490   716000   0.024   0.32   0.188     1964   44126900   55784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23     1965   21439000   32171000   1446100   212750   249280   177530   186800   0.48   0.57   0.57     1968   22523400   43836400   20088600   572620   675423   485464   717800   0.68   0.57   0.51     1967   28707600   20847600   20988600   572620   675423   485464   717800   0.68   0.57   0.41     1970   29134200   4318700   1984800   327742   400203   275950   520100   1.28   1.49   1.00     1971   22495300   3317400   1446800   4764000   476400   476400   476400   476400   476400   476400   47640	_		104884000	36950800		5561700				0.23	
1954   57013600   96288100   37150700   3893050   5314800   2851630   658500   0.177   0.25   0.127     1954   57013600   90017000   36110400   3650060   5013480   2657420   762900   0.198   0.28   0.141     1955   48110300   75188900   30783800   356300   4846750   2554780   806400   0.195   0.77   0.140     1956   35317100   54958400   22695300   3280040   4476450   2403400   675200   0.197   0.17   0.141     1957   85860000   134146000   54954500   290960   4022050   2179800   682900   0.121   0.29   0.151     1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162     1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2963110   3921680   2238850   665200   0.21   0.28   0.158     1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190     1962   31786100   4876400   20723400   1999640   2617690   1523400   627800   0.27   0.35   0.24     1963   42242300   63275900   28200500   2880980   3687540   2266490   716000   0.194   0.25   0.151     1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23     1966   22437300   33033900   15239800   1627150   199679   1367010   895500   0.48   0.57   0.41     1967   28707600   4208200   19583800   130101   1211090   876347   695500   0.48   0.57   0.41     1968   29523400   43387400   20089600   577620   675423   485464   717800   0.98   1.14   0.83     1969   13917600   20847600   3921190   495461   610783   401913   546700   0.87   1.02   0.74     1970   29134200   42817000   19524000   476038   589560   384571   563100   0.94   1.08   0.81     1971   22495300   32548300   15547300   327742   40053   865520   484500   0.87   1.02   0.74     1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.02   0.74     1976   4172730   6573140   2698600   5195600   199400   239669   1663144   771800   0.87   1.02   0.74     1978	1953   59817800   96289100   37160700   3893050   5314800   2851630   698500   0.177   0.25   0.127     1955   48110300   75188900   30783800   3365060   5013480   2657420   762900   0.198   0.28   0.141     1955   48110300   75188900   30783800   3364500   4846750   2594780   806400   0.195   0.27   0.140     1956   35317100   54955400   22695300   3280040   4476450   2403400   675200   0.197   0.27   0.144     1957   83860000   134146000   54954500   296900   4022050   2179800   682900   0.21   0.29   0.153     1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.39   0.162     1959   37590200   59428600   23776800   3828880   4768970   2691780   784500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2853720   3921680   2238550   696200   0.21   0.28   0.158     1961   70192800   109705000   45117300   2853720   3699280   2201420   696700   0.24   0.33   0.190     1962   31786100   4875400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21     1963   42243300   63275900   28200500   2889080   3687540   2266490   716000   0.194   0.25   0.51     1964   4416900   65784400   2599590   2637470   340202   2146850   671200   0.22   0.35   0.51     1965   21543000   32171000   14426100   2127520   2549280   177530   1168800   0.47   0.57   0.39     1966   22437300   33033900   15233800   1627150   1936790   1367010   895500   0.48   0.57   0.39     1969   23917600   24087600   2919100   494616   610783   401913   401910	1952		98391500	35647800	4115720			664400	0.170	0.24	0.122
1955   48110300   75188900   30783800   3563060   5013480   2657420   762900   0.198   0.28   0.141   1955   48110300   75188900   30783800   3546300   4846750   2594780   806400   0.195   0.27   0.140   1957   85860000   134146000   5495800   22695300   22690500   4022050   2179800   662900   0.21   0.29   0.153   0.159   1958   32872400   50667000   21247400   2407650   3269000   1773150   670500   0.22   0.30   0.162   1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178   1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158   1961   70192800   190295000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190   1962   31786100   48754400   20723400   1996940   2617690   1523400   63275900   23200500   28309080   3687540   2664690   716000   0.194   0.25   0.151   1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   21343000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   0.39   1966   22437300   33033900   15339800   1627150   193679   1367010   8955500   0.64   0.75   0.39   0.39   0.36	1955   48110300   75188900   30783800   3354300   4486750   2594780   806400   0.195   0.27   0.140     1956   35317100   54958400   22695300   3280040   4476450   2403400   675200   0.197   0.27   0.140     1957   85860000   134146000   54954500   2369040   4476450   2403400   675200   0.197   0.27   0.140     1958   3272400   50667000   21327400   2407650   3269200   0.773150   670500   0.21   0.29   0.153     1958   32752400   50667000   21372400   2407650   3269200   0.773150   670500   0.22   0.39   0.152     1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158     1961   70192800   109205900   45117300   2853720   369280   2201420   696700   0.24   0.31   0.190     1963   42242300   63578400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21     1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23     1965   22437300   33033900   14226100   2127520   259280   1775530   1168800   0.47   0.57   0.31     1967   28707600   42082200   15983800   1030210   121090   876347   695500   0.48   0.57   0.41     1967   28707600   42082200   19983800   1030210   121090   876347   695500   0.48   0.57   0.41     1968   29523400   43387400   2089600   57260   65743   485464   717800   0.87   1.02   0.74     1970   29134200   42817000   1932000   476038   589260   384571   563100   0.87   1.02   0.74     1971   22495300   32548300   15547300   332972   400253   267550   520100   1.28   1.49   1.00     1973   7349380   11568800   5454630   256816   359506   245365   484000   0.87   1.02   0.74     1973   7349800   1156800   5454630   256816   359506   245365   484000   0.37   0.50   0.78     1976   4172730   6573140   2648910   152977   203679   114926   174800   0.81   1.06   0.63     1977   5007480   8108990   3092230   1303059   144752   74928   40000   0.37   0.50   0.78     1978   531550   8311430   213276	_									0.25	
1955   48110300   75188900   30783800   356300   4846750   2594780   806400   0.195   0.27   0.140     1957   85860000   134146000   54954500   2960960   4022050   2179800   682900   0.21   0.29   0.153     1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162     1959   37590200   59428600   23776800   3582880   4768970   2691730   676500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158     1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190     1962   31786100   48754400   20273400   1999640   2617690   1523400   627800   0.27   0.35   0.21     1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.194   0.25   0.151     1964   44126900   65784400   29599500   2637470   3240220   1406850   871200   0.28   0.35   0.21     1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39     1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.39     1966   22437300   3333900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.49     1967   28707600   42082200   19583800   1030210   1211090   876347   479500   0.98   1.14   0.83     1969   13917600   20847600   9291190   495461   610783   401913   546700   0.98   1.14   0.83     1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10     1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56     1973   7943080   11566800   5454630   296816   359650   448600   0.37   0.05   0.27     1975   3234710   4934190   2102580   114031   139268   93688   312800   1.05   0.27   0.37     1975   3234710   4934190   2102580   114031   139268   93688   312800   1.05   0.27   0.37     1976   4172730   657340   2648810   152997   203669   144956   749800   0.66   0.78   0.56     1977   5007480   8108990   3092230   103	1955   48110300   75188900   30783800   3346300   4846750   2594780   806400   0.195   0.27   0.140     1956   35317100   54958400   22695300   3280040   4476450   2403400   675200   0.197   0.27   0.144     1957   85860000   134146000   54954500   2960960   4022050   2179800   682900   0.21   0.29   0.153     1958   32877400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162     1959   37590200   59428600   23776800   3828880   4768970   2691780   784500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158     1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.32   0.178     1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21     1963   42242300   63275900   28200500   2889980   3687540   2266490   716000   0.194   0.25   0.151     1964   44165900   65784400   22973470   3240270   2146850   871200   0.22   0.35   0.31     1965   21543000   32171000   14426100   2127520   2549280   177530   1168800   0.47   0.57   0.39     1966   22437300   33033990   15239800   1627150   1996790   1367010   399500   0.48   0.57   0.41     1967   28707600   4208200   1988800   130310   1211990   876347   695500   0.48   0.57   0.41     1968   29523400   43387400   20088600   572620   674323   485464   717800   0.98   1.14   0.83     1971   22495300   32548300   15249800   476038   889260   384571   563100   0.94   1.08   0.81     1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10     1972   15700700   22670500   10873700   332972   408217   271597   497500   0.87   1.02   0.74     1973   7943080   11566800   5454630   296816   359056   243565   484000   0.87   1.01   0.76     1974   414125100   20958600   591663   199400   239069   166314   275100   0.87   1.02   0.75     1978   53351560   8391430   3213760   159030   318593   31880   31880   0.33   0.40   0.27     1978   53354500   8364300   63678	_				3650060	5013480			0.198	0.28	
1956   35317100   54958400   22695300   3280040   4476450   2403400   675200   0.197   0.27   0.144   1957   85860000   134146000   54954500   2960960   4022050   21793800   682900   0.21   0.29   0.153   1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162   1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178   1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158   1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190   1962   31786100   48754400   20723400   1996540   2617690   1523400   627800   0.27   0.35   0.21   1963   42243300   63275900   28200500   2899800   3687540   2266490   716000   0.194   0.25   0.151   1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   22437300   33033900   15239900   1627150   1396790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   975500   0.64   0.75   0.55   1958   1958   19523400   43837400   2088600   575220   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1971   22495300   2254800   13657300   332972   408217   271597   497500   0.66   0.78   0.57   1975   3234710   4934190   2120580   114931   139280   1366340   1366800   5454630   296816   359056   245365   484000   0.37   0.50   0.75   1975   3234710   4934190   2120580   114931   139288   33688   312800   1.05   1.27   0.87   1975   3234710   4934190   2120580   114931   139288   33688   312800   1.05   1.27   0.87   1975   3234710   4934190   2120580   114931   139288   33688   312800   0.57   0.75   1975   3234710   4934190   2120580   114931   139288   39368   1316800   0.37   0.50   0.27   0.75   1975   3234710   4934190   212058	1956   35317100	1955		75188900	30783800				806400	0.195	0.27	0.140
1957   85860000   134146000   54954500   2960560   4022050   2179800   682900   0.21   0.29   0.153   1958   32872400   50667000   21377800   3582880   4768970   2691780   783500   0.24   0.32   0.178   1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178   1950   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158   1951   70192800   109205000   48117300   2853720   3699280   2201420   696700   0.24   0.31   0.199   1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21   1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.194   0.25   0.151   1964   44126900   65784400   29599500   2634740   324020   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19858800   1030210   1211909   876344   695500   0.64   0.75   0.55   1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1970   29134200   42817000   19824000   476038   889260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.87   1.02   0.75   1974   14125100   20958600   9519630   199400   239669   166314   275100   0.87   1.02   0.75   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   4324710   4943190   2120580   114031   139268   93368   313860   0.57   1.07   0.76   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1978   10515400   476800   476800   476800   476800   476800   4	1957   85860000   134146000   54954900   2960960   022050   2179800   682900   0.21   0.29   0.153   1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162   1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178   1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158   1961   70192800   109250000   48117300   2853720   399280   2201420   696700   0.24   0.31   0.190   1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21   1963   42242300   63275900   2800500   2800800   3687540   2266490   716000   0.194   0.25   0.151   1964   44165000   65784400   29599500   2637470   324020   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   1966   22437300   3303300   15239800   1607150   193670   1367010   8895500   0.64   0.75   0.35   1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.31   1971   22495300   32548300   15547300   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   1156800   5845830   296816   359056   245365   484000   0.37   1.02   0.74   1970   29134200   42817000   19873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   1156800   5454630   296816   359056   245365   484000   0.37   1.02   0.76   1974   14125100   20938600   5919630   199400   239096   166314   275100   0.37   1.02   0.76   1978   3234710   4934190   2120580   14031   139268   93368   312800   0.05   1.27   0.37   1976   4172730   657340   2648910   15297   203679   114926   475400   0.38   1.06   0.67   0.78   1.07   0.79   1978   3234710   4934190   2120580   136760   185930   185930   136760   236980   0.38   0.47   0.31   1988   3595600   30514300   3052230   1030599   147527   47	1956	35317100	54958400	22695300		4476450	2403400	675200	0.197	0.27	0.144
1958   32872400   50667000   21327400   2407650   3269200   1773150   670500   0.22   0.30   0.162   1959   37590200   59428600   223776800   3282880   4768970   2691780   784500   0.24   0.32   0.178   1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158   1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190   1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21   1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   2084660   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   859260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15543630   256816   339056   245365   484000   0.87   1.02   0.76   1973   7943080   11566800   5454630   296816   339056   245365   484000   0.87   1.02   0.76   1973   7943080   11566800   5454630   296816   339056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   239069   166344   275100   0.87   0.10   0.76   1974   14125100   20958600   9519630   1199400   239069   166344   275100   0.87   0.27   0.37   0.191   1979   10154900   120958600   9519630   136940   239069   166348   275100   0.22   0.37   0.191   1979   10154900   12058600   3645400   3645400   36454   3655500   387	1958   32872400   50667000   213727400   2407650   3269200   1773150   670500   0.22   0.30   0.152     1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178     1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158     1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190     1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21     1963   42242300   63275900   28200500   289080   3687540   2266490   716000   0.194   0.25   0.151     1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23     1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39     1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41     1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.57     1968   29523400   43337400   20089600   572620   675423   485464   717800   0.98   1.14   0.83     1969   13917600   20847600   9291190   495461   610783   401913   546700   0.37   1.02   0.74     1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81     1971   22495300   32548300   15547300   332972   408217   271597   497500   0.66   0.78   0.56     1973   7943080   11566800   5454630   269816   389056   245656   484000   0.37   1.01   0.76     1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75     1975   3234710   4934190   2120580   14903   313973   25000   0.87   1.01   0.66     1978   5351560   8911430   3213760   136990   141752   74928   46000   0.37   0.50   0.27     1976   4172730   6573140   2648910   152997   203679   114931   174800   0.81   1.06   0.63     1979   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.75     1985   5351600   8356400   3595600   1488000   1489300   3	1957	85860000	134146000	54954500	2960960	4022050		682900	0.21	0.29	0.153
1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178   1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.21   0.28   0.158   1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190   1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21   1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.28   0.35   0.21   1964   44126900   65784400   22599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   1966   22437300   33033900   152339800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1971   22495300   32548300   15847300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271579   497500   0.66   0.78   0.56   1973   7943080   11568800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   515630   199400   230699   166314   275100   0.87   1.02   0.75   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.87   1.01   0.76   1974   14125100   20958600   515630   199400   230699   166314   275100   0.87   1.02   0.75   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.87   1.02   0.75   1978   5351560   8911430   3213760   1366726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   136923   337243   317973   25100   0.22   0.33   0.158   1.98   1.57   1.07   1.	1959   37590200   59428600   23776800   3582880   4768970   2691780   784500   0.24   0.32   0.178   1960   15840000   24976400   10045700   2963110   3921680   2238850   696200   0.24   0.31   0.190   1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21   1963   42242300   63275900   28200500   2880980   3685740   2266480   716000   0.194   0.25   0.151   1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   1966   22437300   3303900   153239800   16377150   1936730   1367800   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.59   1968   22953400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   22548300   15847300   323292   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   243365   444000   0.87   1.02   0.75   1975   3234710   4934190   2120580   116037   114031   139268   93368   312800   0.65   0.78   0.56   1973   7943080   11566800   5454630   256816   359056   243365   444000   0.87   1.01   0.75   1975   3234710   4934190   2120580   116097   136767   185980   11600   0.27   0.37   0.19   1976   4172730   6573140   2648910   152997   203679   114951   174800   0.38   0.50   0.27   0.79   1978   53234710   4934190   2120580   116037   136766   185942   100538   312800   0.05   1.27   0.37   1978   5351560   801430   3213760   136726   185942   100538   312800   0.05   1.27   0.37   0.19   1978   5351560   8016380   8055600   52582500   108300   1383700   2334710   4934190   2120580   136330   136300   136300   136300   136300   136300   136300   136300   13	1958	32872400	50667000	21327400				670500	0.22	0.30	0.162
1960	1960	1959	37590200	59428600	23776800		4768970		784500		0.32	0.178
1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190   1962   31786100   48754400   20723400   1996940   2617690   1523400   627800   0.27   0.35   0.21   1963   42242300   63275900   28200500   2890980   3867540   2266490   716000   0.194   0.25   0.315   1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1971   22495300   20847600   2921190   495461   610783   401913   346700   0.88   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   5519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1988   5351560   891430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1988   5351560   82574500   41488000   1488100   19838   2313760   136726   185932   337530   337500   0.22   0.23   0.29   0.190   1984   55810000   78742600   39556000   1638450   198300   163864   70764   0.192   0.24   0.151   1983   57946900   80371200   4759000   1488100   19837500   23	1961   70192800   109205000   45117300   2853720   3699280   2201420   696700   0.24   0.31   0.190     1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.194   0.25   0.151     1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23     1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39     1966   22437300   3303900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41     1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55     1968   29523400   43387400   20089600   572620   675423   485464   717800   0.87   1.02   0.74     1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74     1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81     1971   22495300   32548300   15547300   332272   408217   7271597   497500   0.66   0.78   0.56     1973   7943080   11566800   5454630   296816   359056   243365   484000   0.87   1.02   0.76     1976   4172730   6573140   2648910   152997   203679   114926   174800   0.87   1.02   0.76     1978   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87     1978   3324710   4934190   2120580   114031   139268   93368   312800   0.05   1.27   0.76     1978   3535560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191     1979   10154900   16296600   6327830   180923   337243   137973   25100   0.20   0.30   0.158     1988   35691500   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170     1982   58525600   82574500   41480600   416941   524289   331573   275079   0.38   0.42   0.29     1988   37759800   5366300   48673400   11878700   285480   0.44   0.29     1988   3789500   5364300   34934000   11878700   3493400   140130   176950   348500   348500   3.30   0.42   0.29     1998   31642500   4562000   24507000   1774100   2059190   44857	1960	15840000	24976400	10045700		3921680		696200	0.21	0.28	0.158
1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.194   0.25   0.151     1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23     1965   21543000   33171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39     1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41     1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55     1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83     1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74     1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81     1971   22495300   32548300   15547300   332972   408217   271597   497500   0.66   0.78   0.56     1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76     1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.78     1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63     1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27     1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.19     1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158     1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151     1981   36915300   52254500   41480600   416944   524289   331573   275079   0.189   0.24   0.151     1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190     1984   5581000   78742600   3955600   10488100   198388   251510   156486   70764   0.192   0.24   0.151     1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190     1984   55810000   78742600   31954000   41779200	1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.194   0.25   0.151     1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23     1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41     1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55     1968   29523400   43387400   20089600   572620   675423   488464   717800   0.98   1.14   0.83     1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74     1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81     1971   22495300   32543300   10537300   322724   400253   267550   520100   1.28   1.49   1.10     1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56     1973   7943080   11566800   5454630   299616   359056   245365   484000   0.87   1.02   0.75     1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63     1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27     1978   3531560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.91     1981   36915300   22886900   10488100   198388   251510   156486   70764   0.192   0.24   0.151     1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151     1983   57946900   80371200   4287900   168330   139000   148330   799058   0.35   0.42   0.29     1984   5845000   5364500   25882500   2588	1961	70192800	109205000	45117300	2853720	3699280		696700	0.24	0.31	0.190
1963   42242300   63275900   28200500   2890980   3687540   2266490   716000   0.194   0.25   0.151   1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.57   0.39   1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089500   572620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   332724   4400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   230699   166314   275100   0.87   1.02   0.75   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151   1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190   1984   5581000   78742600   39556200   1063300   1383060   850072   428631   0.30   0.37   0.25   1988   44888200   64182400   31394100   1834720   296922   671488   0.36   0.44   0.29   1987   78363300   11778500   54676300   1178760   1479940   944100   613780   0.38   0.46   0.29   1989   3	1963	1962	31786100	48754400	20723400	1996940	2617690	1523400	627800	0.27	0.35	0.21
1964	1964   44126900   65784400   29599500   2637470   3240220   2146850   871200   0.28   0.35   0.23   1965   21543000   32171000   14426100   2127520   2549280   1775530   1168800   0.47   0.77   0.39   1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1991   0.98   0.991190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670590   10873700   332972   400253   267550   520100   1.28   1.49   1.10	1963	42242300	63275900	28200500		3687540	2266490	716000	0.194	0.25	0.151
1965	1965	1964			29599500		3240220	2146850	871200	0.28	0.35	0.23
1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332724   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332727   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   228836900   10488100   198388   251510   156486   70764   0.192   0.22   0.151   1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.22   0.170   1982   58525600   82574500   41480600   416941   524289   331573   275079   0.188   0.24   0.151   1983   35915300   52651000   25882500   298043   378593   234631   174879   0.21   0.22   0.190   1984   55810000   78742600   39556200   1063320   1330060   850072   428631   0.30   0.38   0.47   0.31   1986   81400100   117323000   56476300   114750   133060   850072   428631   0.30   0.38   0.44   0.29	1966   22437300   33033900   15239800   1627150   1936790   1367010   895500   0.48   0.57   0.41   1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089800   572620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1.14   1.10   1971   22495300   32543300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   119400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.31   1.06   0.63   1977   5007480   8108990   309230   130599   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   22836900   10488100   198388   251510   1564866   70764   0.192   0.24   0.151   1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170   1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151   1983   57946900   8371200   41779200   636454   796554   585323   887202   0.23   0.29   0.199   1987   78363300   111785000   54934000   1161900   1429940   944100   613780   0.38   0.47   0.31   1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29   1988   44888200   64182400   31394100   1837720   2334910   1657590   645229   0.26   0.31   0.		21543000	32171000	14426100	2127520	2549280	1775530		0.47	0.57	0.39
1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.75   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151   1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170   1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151   1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190   1984   55810000   78742600   39556200   1063320   1330060   850072   428631   0.30   0.37   0.25   1985   67271100   96545300   46673400   1178760   1437020   966922   671488   0.36   0.44   0.29   1987   7863300   111785000   54934000   1401030   1709350   1148330   792058   0.35   0.42   0.29   1987   7863300   111785000   54934000   1401030   1709350   1148330   792058   0.35   0.42   0.29   1989   377	1967   28707600   42082200   19583800   1030210   1211090   876347   695500   0.64   0.75   0.55   1968   29523400   43387400   20089600   577620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4172730   6573140   2648910   15299   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170   1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151   1983   557946900   80371200   41779200   636454   796554   508533   887202   0.23   0.29   0.190   1984   55810000   78742600   39556200   1063320   1330060   850072   428631   0.30   0.37   0.25   1985   67271100   96545300   46873400   1161900   1429940   944100   613780   0.38   0.47   0.31   1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29   1988   44888200   64182400   31394100   1834720   2234410   1506530   887686   0.33   0.40   0.27   1988   44888200   64182400   31394100   1836750   1616820   117899   0.32   0.38   0.42   0.29   1994   5288	1966		33033900	15239800		1936790	1367010	895500	0.48	0.57	0.41
1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20847600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1.07   0.9134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1.971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1.1	1968   29523400   43387400   20089600   572620   675423   485464   717800   0.98   1.14   0.83   1969   13917600   20287600   9291190   495461   610783   401913   546700   0.87   1.02   0.74   1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1.97   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4772730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151   1983   5395600   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151   1983   57946900   8237450   41480600   416941   524289   331573   275079   0.189   0.24   0.151   1983   57946900   8237400   41779200   636454   796554   508532   387202   0.23   0.29   0.190   1984   5581000   78742600   3955600   166320   1330060   850072   428631   0.30   0.37   0.25   1985   67271100   96545300   46873400   1161900   1429940   944100   613780   0.38   0.47   0.31   1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29   1987   78363300   1178000   54934000   1401030   179350   1488510   887889   0.32   0.38   0.46   0.29   1988   44888200   64182400   31394100   1834720   2234410   1506530   887686   0.33   0.40   0.27   1989   350	_			19583800	1030210	1211090	876347	695500	0.64	0.75	0.55
1969	1969				20089600					0.98		
1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81   1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10   1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151   1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170   1982   5852600   82574500   4148060   416941   524289   331573   275079   0.189   0.24   0.151   1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190   1984   55810000   78742600   39556200   1063320   1330060   850072   428631   0.30   0.37   0.25   1985   67271100   96545300   46873400   1161900   1429940   944100   613780   0.38   0.47   0.31   1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29   1987   78363300   111785000   54934000   1407900   1429940   944100   613780   0.38   0.47   0.31   1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29   1987   78363300   1178500   3194100   1834720   2234410   1506530   887686   0.33   0.40   0.27   1989   37759800   53864300   26470300   1875130   2222330   1582180   787899   0.32   0.38   0.26   1990	1970   29134200   42817000   19824000   476038   589260   384571   563100   0.94   1.08   0.81     1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10     1972   15700700   22670500   10873700   332972   408217   271597   479500   0.66   0.78   0.56     1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76     1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75     1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87     1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63     1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27     1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191     1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158     1980   15476300   22836900   10488100   198388   251510   156486   0.192   0.24   0.151     1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170     1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151     1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190     1984   55810000   78742600   39556200   1063320   1330060   850072   4488   0.36   0.44   0.29     1985   67271100   96545300   46873400   1161900   1429940   944100   613780   0.38   0.47   0.31     1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29     1987   78363300   111785000   54934000   1401030   1709350   1148330   792058   0.35   0.42   0.29     1988   44888200   64182400   31394100   1834720   2234410   1506530   887686   0.33   0.40   0.27     1989   37759800   53864300   26470300   187750   137830   943837   579371   0.32   0.38   0.26     1990   31642500   45621000   21947100   1977730   2334910   1675190   6452			20847600		495461	610783	401913	546700		1.02	
1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10     1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56     1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76     1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75     1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87     1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63     1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27     1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191     1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158     1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151     1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170     1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151     1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190     1984   55810000   78742600   39556200   1063320   1330060   850072   428631   0.30   0.37   0.25     1985   67271100   96545300   46873400   1161900   1429940   944100   613780   0.38   0.47   0.31     1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29     1987   73863300   111785000   54934000   1401030   1709350   148330   792058   0.35   0.42   0.29     1988   44888200   64182400   31394100   1834720   2234410   1506530   887686   0.33   0.40   0.27     1989   37759800   53864300   26470300   1875130   2222330   1582180   787899   0.32   0.38   0.26     1990   31642500   45621000   21947100   1977730   2334910   1675190   645229   0.26   0.31   0.22     1991   35056700   50146200   24507900   1749100   2059190	1971   22495300   32548300   15547300   327242   400253   267550   520100   1.28   1.49   1.10     1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56     1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76     1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75     1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87     1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63     1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27     1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191     1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158     1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151     1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170     1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151     1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190     1984   5881000   78742600   39556200   1063320   1330660   850072   428631   0.30   0.37   0.25     1985   67271100   96545300   4687400   1161900   142940   944100   613780   0.38   0.47   0.31     1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29     1987   78363300   111785000   54934000   1401030   1709350   1148330   792058   0.35   0.42   0.29     1988   44888200   64182400   31394100   1834720   2234310   1565500   876860   0.33   0.40   0.27     1989   37759800   53864300   26470300   1875130   2222330   158180   787899   0.32   0.38   0.26     1990   31642500   45621000   21947100   1977730   2334910   1675190   645229   0.26   0.31   0.22     1991   35056700   50146200   24507900   1749100   2059190   14											
1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151   1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170   1982   58525600   82574500   41480600   416941   524289   331573   275079   0.189   0.24   0.151   1983   57946900   80371200   41779200   636454   796554   508532   387202   0.23   0.29   0.190   1984   55810000   78742600   39556200   1063320   1330060   850072   428631   0.30   0.37   0.25   1985   67271100   96545300   46873400   1161900   1429940   944100   613780   0.38   0.47   0.31   1986   81400100   117323000   54974000   1401030   1709350   1148330   792058   0.35   0.42   0.29   1988   44888200   64182400   31394100   1834720   22334410   1506530   887686   0.33   0.40   0.27   1989   37759800   53864300   26470300   1875130   222330   1582180   787899   0.32   0.38   0.26   1990   31642500   45621000   21947100   1977730   2334910   1675190   645229   0.26   0.31   0.22   1991   35056700   50146200   24507900   1749100   2059190   1485710   658008   0.28   0.34   0.24   1992   6595400   90180700   48296400   1367750   1616820   1150530   887686   0.33   0.38   0.26   1994   66555700   50146200   24507900   1749100   2059190   1485710   658008   0.28   0.34   0.2	1972   15700700   22670500   10873700   332972   408217   271597   497500   0.66   0.78   0.56   1973   7943080   11566800   5454630   296816   359056   245365   484000   0.87   1.01   0.76   1974   14125100   20958600   9519630   199400   239069   166314   275100   0.87   1.02   0.75   1975   3234710   4934190   2120580   114031   139268   93368   312800   1.05   1.27   0.87   1976   4172730   6573140   2648910   152997   203679   114926   174800   0.81   1.06   0.63   1977   5007480   8108990   3092230   103059   141752   74928   46000   0.37   0.50   0.27   1978   5351560   8911430   3213760   136726   185942   100538   11000   0.27   0.37   0.191   1979   10154900   16296600   6327830   180923   237243   137973   25100   0.22   0.30   0.158   1980   15476300   22836900   10488100   198388   251510   156486   70764   0.192   0.24   0.151   1981   36915300   52651000   25882500   298043   378593   234631   174879   0.21   0.27   0.170   1982   58525600   82574500   41470920   636454   796554   508532   387202   0.23   0.29   0.190   1984   55810000   78742600   39556200   1063320   1330060   850072   428631   0.30   0.37   0.25   1985   67271100   96545300   46873400   1161900   1429940   944100   613780   0.38   0.47   0.31   1986   81400100   117323000   56476300   1178760   1437020   966922   671488   0.36   0.44   0.29   1987   78363300   111785000   54934000   1401030   1709350   1148330   792058   0.35   0.42   0.29   1988   44888200   64182400   31394100   1834720   2233411   1506530   887686   0.33   0.40   0.27   1989   37759800   53864300   24670300   1875130   2222330   1582180   787899   0.32   0.38   0.26   1990   31642500   45621000   21947100   1977730   2334910   1675190   645229   0.26   0.31   0.22   1991   35056700   50146200   24507900   1797730   2334910   1675190   645229   0.26   0.31   0.22   1993   68551700   9492100   49507300   997149   1189430   835950   671397   0.36   0.43   0.26   1995   60056500   85562400   43597800   1137470   1370800   943837   579371   0.32   0.38   0.26											
1973         7943080         11566800         5454630         296816         359056         245365         484000         0.87         1.01         0.76           1974         14125100         20958600         9519630         199400         239069         166314         275100         0.87         1.02         0.75           1975         3234710         4934190         2120580         114031         139268         93368         312800         1.05         1.27         0.87           1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         1	1973         7943080         11566800         5454630         296816         359056         245365         484000         0.87         1.01         0.76           1974         14125100         20958600         9519630         199400         239069         166314         275100         0.87         1.02         0.75           1975         3234710         4934190         2120580         114031         139268         93368         312800         1.05         1.27         0.87           1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108999         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1981         36915300         22836900         1											
1975         3234710         4934190         2120580         114031         139268         93368         312800         1.05         1.27         0.87           1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         5525600         82574500         <	1975         3234710         4934190         2120580         114031         139268         93368         312800         1.05         1.27         0.87           1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         5852500         82574500         <	_										
1975         3234710         4934190         2120580         114031         139268         93368         312800         1.05         1.27         0.87           1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         80371200	1975         3234710         4934190         2120580         114031         139268         93368         312800         1.05         1.27         0.87           1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         19838         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         5852600         82674500 <t< td=""><td>1974</td><td>14125100</td><td>20958600</td><td>9519630</td><td>199400</td><td>239069</td><td>166314</td><td>275100</td><td>0.87</td><td>1.02</td><td>0.75</td></t<>	1974	14125100	20958600	9519630	199400	239069	166314	275100	0.87	1.02	0.75
1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         23631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200	1976         4172730         6573140         2648910         152997         203679         114926         174800         0.81         1.06         0.63           1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137737         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200	1975				114031	139268		312800	1.05	1.27	0.87
1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600 <td>1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600<td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td>	1977         5007480         8108990         3092230         103059         141752         74928         46000         0.37         0.50         0.27           1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600 <td></td>											
1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         5581000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         965453	1978         5351560         8911430         3213760         136726         185942         100538         11000         0.27         0.37         0.191           1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         85072         428631         0.30         0.37         0.25           1985         67271100         965453	1977	5007480	8108990	3092230	103059		74928	46000	0.37	0.50	0.27
1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100	1979         10154900         16296600         6327830         180923         237243         137973         25100         0.22         0.30         0.158           1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         94100         613780         0.38         0.47         0.31           1986         81400100         1	1978					185942	100538	11000	0.27	0.37	0.191
1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300	1980         15476300         22836900         10488100         198388         251510         156486         70764         0.192         0.24         0.151           1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300	_		16296600	6327830	180923	237243	137973	25100	0.22	0.30	0.158
1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200	1981         36915300         52651000         25882500         298043         378593         234631         174879         0.21         0.27         0.170           1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         47488200	1980	15476300					156486	70764	0.192	0.24	0.151
1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800	1982         58525600         82574500         41480600         416941         524289         331573         275079         0.189         0.24         0.151           1983         57946900         80371200         41779200         636454         796554         508532         387202         0.23         0.29         0.190           1984         55810000         78742600         39556200         1063320         1330600         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800	1981							174879	0.21	0.27	0.170
1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700	1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700			82574500		416941	524289		275079	0.189	0.24	0.151
1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700	1984         55810000         78742600         39556200         1063320         1330060         850072         428631         0.30         0.37         0.25           1985         67271100         96545300         46873400         1161900         1429940         944100         613780         0.38         0.47         0.31           1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700	1983	57946900	80371200	41779200	636454	796554	508532	387202	0.23	0.29	0.190
1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700 <td>1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700<td>1984</td><td>55810000</td><td>78742600</td><td>39556200</td><td></td><td></td><td>850072</td><td>428631</td><td>0.30</td><td>0.37</td><td>0.25</td></td>	1986         81400100         117323000         56476300         1178760         1437020         966922         671488         0.36         0.44         0.29           1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700 <td>1984</td> <td>55810000</td> <td>78742600</td> <td>39556200</td> <td></td> <td></td> <td>850072</td> <td>428631</td> <td>0.30</td> <td>0.37</td> <td>0.25</td>	1984	55810000	78742600	39556200			850072	428631	0.30	0.37	0.25
1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200	1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200	1985	67271100	96545300	46873400	1161900	1429940	944100	613780	0.38	0.47	0.31
1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200	1987         78363300         111785000         54934000         1401030         1709350         1148330         792058         0.35         0.42         0.29           1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200	1986	81400100	117323000	56476300	1178760	1437020	966922	671488	0.36	0.44	0.29
1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500	1988         44888200         64182400         31394100         1834720         2234410         1506530         887686         0.33         0.40         0.27           1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500	_			54934000						0.42	
1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26	1989         37759800         53864300         26470300         1875130         2222330         1582180         787899         0.32         0.38         0.26           1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26           1996         50221500	1988			31394100	1834720	2234410		887686	0.33	0.40	0.27
1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26	1990         31642500         45621000         21947100         1977730         2334910         1675190         645229         0.26         0.31         0.22           1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26           1996         50221500         70175200         35941400         1257950         1511460         1046950         275098         0.184         0.23         0.146           1997         39918400	_	37759800		26470300							
1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26	1991         35056700         50146200         24507900         1749100         2059190         1485710         658008         0.28         0.34         0.24           1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26           1996         50221500         70175200         35941400         1257950         1511460         1046950         275098         0.184         0.23         0.146           1997         39918400         56237900         28334600         1422790         1702410         1189100         264313         0.168         0.21         0.136           1998         25190100				21947100							
1992     65995400     90180700     48296400     1367750     1616820     1157050     716799     0.32     0.38     0.26       1993     68551700     94922100     49507300     997149     1189430     835950     671397     0.36     0.43     0.30       1994     52883200     74387600     37595400     1062650     1269400     889581     568234     0.37     0.45     0.31       1995     61076500     85562400     43597800     1137470     1370830     943837     579371     0.32     0.39     0.26	1992         65995400         90180700         48296400         1367750         1616820         1157050         716799         0.32         0.38         0.26           1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26           1996         50221500         70175200         35941400         1257950         1511460         1046950         275098         0.184         0.23         0.146           1997         39918400         56237900         28334600         1422790         1702410         1189100         264313         0.168         0.21         0.136           1998         25190100         34931000         18165500         1667750         1976470         1407250         391628         0.192         0.23         0.157			50146200	24507900				658008		0.34	0.24
1993     68551700     94922100     49507300     997149     1189430     835950     671397     0.36     0.43     0.30       1994     52883200     74387600     37595400     1062650     1269400     889581     568234     0.37     0.45     0.31       1995     61076500     85562400     43597800     1137470     1370830     943837     579371     0.32     0.39     0.26	1993         68551700         94922100         49507300         997149         1189430         835950         671397         0.36         0.43         0.30           1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26           1996         50221500         70175200         35941400         1257950         1511460         1046950         275098         0.184         0.23         0.146           1997         39918400         56237900         28334600         1422790         1702410         1189100         264313         0.168         0.21         0.136           1998         25190100         34931000         18165500         1667750         1976470         1407250         391628         0.192         0.23         0.157	1992		90180700	48296400	1367750		1157050	716799	0.32	0.38	0.26
1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26	1994         52883200         74387600         37595400         1062650         1269400         889581         568234         0.37         0.45         0.31           1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26           1996         50221500         70175200         35941400         1257950         1511460         1046950         275098         0.184         0.23         0.146           1997         39918400         56237900         28334600         1422790         1702410         1189100         264313         0.168         0.21         0.136           1998         25190100         34931000         18165500         1667750         1976470         1407250         391628         0.192         0.23         0.157	_			49507300							
1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26	1995         61076500         85562400         43597800         1137470         1370830         943837         579371         0.32         0.39         0.26           1996         50221500         70175200         35941400         1257950         1511460         1046950         275098         0.184         0.23         0.146           1997         39918400         56237900         28334600         1422790         1702410         1189100         264313         0.168         0.21         0.136           1998         25190100         34931000         18165500         1667750         1976470         1407250         391628         0.192         0.23         0.157							889581			0.45	
	1996         50221500         70175200         35941400         1257950         1511460         1046950         275098         0.184         0.23         0.146           1997         39918400         56237900         28334600         1422790         1702410         1189100         264313         0.168         0.21         0.136           1998         25190100         34931000         18165500         1667750         1976470         1407250         391628         0.192         0.23         0.157	1995										
<u>, , , , , , , , , , , , , , , , , , , </u>	1997         39918400         56237900         28334600         1422790         1702410         1189100         264313         0.168         0.21         0.136           1998         25190100         34931000         18165500         1667750         1976470         1407250         391628         0.192         0.23         0.157	_										
1997   39918400   56237900   28334600   1422790   1702410   1189100   264313   0.168   0.21   0.136	1998         25190100         34931000         18165500         1667750         1976470         1407250         391628         0.192         0.23         0.157											
		_										
	1999   80033600   111046000   57682100   1714790   2031570   1447400   363163   0.185   0.22   0.152	1999	80033600	111046000	57682100	1714790	2031570	1447400	363163	0.185	0.22	0.152

Year	Recruitment	Recruitment	Recruitment	SSB*	SSB High	SSB Low	Total	F	F	F
icai	(age wr 0)	High	Low	335	33B Tilgii	33B LOW	catch	(ages 2–6)	High	Low
2000	54550900	75142200	39602300	1775680	2100910	1500790	388157	0.186	0.23	0.153
2001	101912000	143310000	72472200	2260930	2674460	1911340	374065	0.162	0.198	0.132
2002	49214200	68312700	35455200	2670350	3158820	2257420	394709	0.151	0.186	0.123
2003	27618600	38230200	19952400	2743140	3226430	2332250	482281	0.178	0.22	0.146
2004	32210600	44638800	23242600	2666900	3135620	2268250	587698	0.22	0.28	0.180
2005	29939000	41124700	21795800	2459490	2902650	2083990	663813	0.24	0.30	0.195
2006	27222200	37602000	19707700	2003190	2360540	1699930	514597	0.21	0.26	0.173
2007	31275800	43837900	22313500	1624270	1917500	1375890	406482	0.186	0.23	0.150
2008	29088800	40631700	20825100	1691050	1995140	1433300	257870	0.116	0.142	0.096
2009	47585200	66170000	34220200	1986850	2350940	1679150	168443	0.068	0.085	0.054
2010	38129800	52689600	27593300	2103980	2504080	1767810	187611	0.072	0.088	0.059
2011	34223700	47179100	24825800	2527300	2958370	2159040	226478	0.094	0.114	0.077
2012	32791200	45369800	23699900	2682520	3140050	2291650	434710	0.152	0.186	0.124
2013	40829500	57224100	29131900	2450180	2862150	2097510	511416	0.179	0.22	0.146
2014	65480100	92267700	46469600	2382260	2786850	2036400	517356	0.182	0.22	0.149
2015	17336500	24345300	12345500	2207600	2585800	1884710	494099	0.189	0.24	0.152
2016	32864600	45448700	23764800	2596510	3067070	2198150	563610	0.196	0.24	0.157
2017	20022400	28547600	14043100	2214970	2646910	1853510	498437	0.179	0.22	0.145
2018	36780600	54181100	24968400	1870360	2303110	1518930	603536	0.21	0.27	0.163
2019	26191200	47516200	14436800	1529000^						

<sup>\*</sup> At spawning time (September).

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<sup>^</sup> Based on the assessment. The predicted 2019 SSB from the intermediate forecast, applying an exact biomass removed by each fleet, is 1 529 000 tonnes (see tables 2 and 3).