Supplementary material

Reconstructing Kenya's total freshwater fisheries catches: 1950–2017

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Table S1. Data anchor points and sources used for reconstructing catches from Lake Victoria (Kenya) from 1950 to 2017

Item	Year(s)	Description	Sources
Catch and taxa	1948	Total catch for Lake Victoria	Ogutu-Ohwayo (1990)
	1958	Total catch & taxonomic composition, incl. illegal gear	Lake Victoria Fisheries Service (1959)
	1961	Total catch for Lake Victoria (Kenya)	Ogutu-Ohwayo (1990)
	1962	Total catch for Lake Victoria (Kenya)	Ogutu-Ohwayo (1990)
	1964-1966	Total catch for Lake Victoria (Kenya)	Greboval and Fryd (1993)
	1967	Total catch for Lake Victoria (Kenya)	Kenya National Bureau of Statistics (1972)
	1968–1973	Total catch & taxonomic composition for Lake Victoria (Kenya)	Committee for Inland Fisheries of Africa (1988)
	1974–1985	Total catch & taxonomic composition for Lake Victoria (Kenya)	Reynolds and Greboval (1988)
	1986–1994	Total catch & taxonomic composition for Lake Victoria (Kenya)	Christopher Aura (KeFS, unpubl. data)
	1995–2017	Total catch & taxonomic composition for Lake Victoria (Kenya)	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)
Unreported	1982	Unreported, illegal catches	Coche and Balarin (1982)
catch	2003	Unreported and illegally caught Nile perch:	Cowx et al. (2003)
	2007	Weight & taxa of unreported bait for longline fishery (Tanzania)	Mkumbo and Mlaponi (2007)
catch	2020	Unreported and illegally caught Nile	Ian Cowx (Hull Fisheries Institute, pers. obs.)
		perch	Paul Tuda (Leibniz Centre for Tropical Marine Research, pers. obs.)
Number of fishers	1950–1954	Number of licenced fishers	Geheb (1997)
	1956	Number of licenced fishers	Geheb (1997)
	1971, 1979, 1994, 1995	Number of licenced fishers	Bokea and Ikiara (2000)
	1973	Number of licenced fishers	Bokea and Ikiara (2000)
	1982-1991	Number of licenced fishers	Greboval and Fryd (1993)
	1996–2016	Number of licenced fishers	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)
Fish consumption	1995	90 kg per person per year in fisher households	Bokea and Ikiara (2000)

Table S2. Anchor points used for reconstructing catches from Lake Turkana (Kenya) from 1950 to 2017

Item	Year(s)	Description	Sources					
Catch and taxa	1951–1956	Total catch & taxonomic composition	Kolding (1995)					
	1962, 1963, 1966	Total catch	Kolding (1989)					
	1964	Total catch	Food and Agriculture Organization of the United Nations (1966a)					
	1965	Total catch	Welcomme (2011)					
	1967–1991	Total catch	Kenya National Bureau of Statistics (1972, 1974, 1977, 1980, 1982, 1985, 1987, 1990, 1991, 1994)					
	1992–1994	Total catch & taxonomic composition	Christopher Aura (KeFS, unpubl. data)					
	1995–2017	Total catch & taxonomic composition	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)					
Number of	1962-1988	Number of licenced fishers	Kolding (1989)					
fishers	1996–2013, 2016	Number of licenced fishers	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)					
Fish consumption	1982	73 kg per person per year in fisher households	Kolding (1989)					

Table S3. Anchor points used for reconstructing catches for Lakes Baringo and Naivasha from 1950 to 2017

Item	Year(s)	Description	Sources
Catch and	1964	Total catch	Food and Agriculture Organization of the United Nations (1966b)
taxa	1965	Total catch	Welcomme (1979)
	1967–1991	Total catch	Kenya National Bureau of Statistics (1972, 1974, 1977, 1980, 1982, 1985, 1987, 1990, 1991, 1994)
	1992–1994	Total catch & taxonomic breakdown	Christopher Aura (KeFS, unpubl. data)
	1995–2017	Total catch & taxonomic breakdown	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)
Number of fishers	1982, 1985, 1986	Number of licenced fishers	Vanden Bossche and Bernacsek (1990)
	1996–2013, 2016	Number of licenced fishers	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)
Other	1959	Start of commercial fishery (Lake Naivasha)	Hickley et al. (2002)
	1975	Protopterus spp. introduced (Lake Baringo)	Kimani et al. (2018)
	1984	Protopterus spp. listed in commercial catch	Kimani et al. (2018)

Table S4. Anchor points used for reconstructing catches for Lakes Kenyatta and Kanyaboli from 1950 to 2017

Item	Year(s)	Description	Sources				
Catch and taxa	2006	Total catch & taxonomic composition	Kenya Fisheries Service (2006)				
	2007	Total catch & taxonomic composition (Lake Kenyatta)	Kenya Fisheries Service (2007)				
	2008–2017	Total catch & taxonomic composition	Kenya Fisheries Service (2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)				
Number of fishers	2004	Number of licenced fishers (Lake Kanyaboli)	Kenya Fisheries Service (2004)				
	2006–2013, Number of licenced fishers 2016		Kenya Fisheries Service (2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016)				

Table S5. Anchor points used for reconstructing catches for Lake Jipe, Lake Chala and other water bodies in Taita-Taveta county from 1950 to 2017

Item	Year(s)	Description	Sources
Catch and	1964- 1965	Total catch (Lake Jipe)	Food and Agriculture Organization of the United Nations (1966b)
taxa	1982	Total catch (Lake Jipe)	Vanden Bossche and Bernacsek (1990)
	1983-1985	Total catch (Lakes Jipe and Chala)	Vanden Bossche and Bernacsek (1990)
	1992–1994	Total catch & taxonomic composition	Christopher Aura (KeFS, unpubl. data)
	1995	Total catch	Kenya Fisheries Service (1996)
	1996–2017	Total catch & taxonomic composition	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)
Number of fishers	1965	Number of licenced fishers (Lake Chala)	Vanden Bossche and Bernacsek (1990)
	1985–1986	Number of licenced fishers (Lakes Chala and Jipe)	Vanden Bossche and Bernacsek (1990)
	1996–2013, 2016	Number of licenced fishers	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016)

Table S6. Anchor points used for reconstructing catches for the Tana River Dams from 1950 to 2017

Item	Year(s)	Description	Sources
Reported catch	1967	Annual catch from	Mann (1969)
and taxa		Kindaruma Dam	
	1992–1994	Total catch & taxonomic	Christopher Aura (KeFS unpubl. data)
		breakdown	
	1995	Total catch	Kenya Fisheries Service (1996)
	1996–2017	Total catch & taxonomic	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007,
		breakdown	2008, 2009, 2010, 2011, 2012, 2013, 2016, 2017)
Number of fisher	s 1996–2013,	Number of licenced fishers	Kenya Fisheries Service (1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007,
	2016		2008, 2009, 2010, 2011, 2012, 2013, 2016)
Other	1967	First major dam on Tana	Mann (1969)
		River	

Table S7. Anchor points used for reconstructing catches for the Tana River Delta from 1950 to 2017

Item	Year(s)	Description	Sources
Reported catch and taxa	a 1963 1964	Total catch (lower stretches of river) Total catch (lower stretches of river)	` '
	1965 1966	Total catch (lower stretches of river) Total catch (lower stretches of river)	` '
		Total catch Total catch & taxonomic breakdown	Kenya Fisheries Service (2007; 2008; 2009) Kenya Fisheries Service (2010, 2011, 2012, 2013, 2016, 2017)
Number of fishers	2016	Number of licenced fishers	Kenya Fisheries Service (2016)

Table S8. Anchor points used for reconstructing catches for the Turkwel Dam from 1950 to 2017

Item	Year(s)	Description	Sources
Reported catch and taxa	2013-2017	Total catch & taxonomic breakdown	Kenya Fisheries Service (2013, 2016, 2017)
Other	1990	Dam construction completed	Renshaw et al. (1998)

Table S9. Anchor points used for reconstructing catches for water bodies assigned to the 'Rivers' category for 1950 to 2017

Item	Year(s)	River	Description	Source
Reported catch and taxa	1955	Nyanzan ^A	Total catch	Food and Agriculture Organization of the United Nations (1966b)
	1959	Sondu-Miriu	Total catch	Whitehead (1959)
	1959	Kuja	Total catch	Whitehead (1959)
	1959	Nzoia	Total catch	Whitehead (1959)
	1960	Athi-Sabaki	Total catch (lower river section)	Whitehead (1960)
	1964	Nyanzan ^A	Total catch	Food and Agriculture Organization of the United Nations (1966b)
	1964	Ewaso- Ngiro	Total catch	Food and Agriculture Organization of the United Nations (1966b)
	1965	Ewaso- Ngiro	Total catch	Food and Agriculture Organization of the United Nations (1966b)
	1986	Malewa	Total catch	Nzioka et al. (2017)
	1986	Sondu-Miriu	Total catch (lower river section)	Ochumba and Manyala (1992)
	1987	Malewar	Total catch	Nzioka et al. (2017)
	1987	Sondu-Miriu	Total catch (lower river section)	Ochumba and Manyala (1992)
	1990	Ewaso-Ngiro	Total catch (wetland section)	Christopher Aura (KeFS, unpubl. data)
	2017	Sondu-Miriu	Catch equivalent to 2017 subsistence levels	Julius Manyala (Jaramogi Oginga Odinga University, pers. obs.)
Number of fishers	1992	Sondu-Miriu	Number of fishers	Ochumba and Manyala (1992)

^AIncludes the Kuja, Sondu-Miriu and Nzoia rivers

Table S10. Total reconstructed catches (tonnes, Mg) for Kenya's freshwater fisheries from 1950 to 2017, separated by water body category and fishing sector

Lake Very Artisan Subsistence Artisan Subsistence Very Artisan Subsistence Very Very		2017, separated by water body category and fishing sector											
1950 22875		Lake						Reconstructed total	FAO reported				
1951 22882		Artisanal	Subsistence		Subsistence		1 Subsistence						
1952 22889 4955 584 237 1471 1471 31605 15000 1954 22902 4443 651 252 1623 31490 13500 1955 22909 4559 628 260 1699 1699 31749 27400 1956 22916 4674 665 267 1662 1662 31841 29900 1957 24833 4869 741 275 1625 1625 33983 21000 1958 24548 5963 818 282 1588 1588 33981 17400 1959 2057 4751 995 289 1551 1551 29189 18300 1960 13865 4418 1183 296 1402 1402 22579 8300 1961 9333 4123 1365 303 1253 1253 1253 1253 1962 4801 3806 1548 332 1103 12686 13200 1964 13500 5142 2433 512 806 806 23219 15800 1965 14625 5449 2718 573 794 794 24945 78000 1966 17100 5905 3696 641 778 778 30171 21500 1967 17717 6133 3403 4063 700 748 733 3440 2200 1968 1665 3649 4063 700 748 733 3440 2200 1968 1665 3676 5440 999 703 703 32765 2130 1971 16933 6714 6061 809 703 703 32765 2130 1972 18897 6503 6303 944 673 673 31513 2500 1973 18897 6503 6303 944 673 673 31513 2500 1974 1971 1665 688 5403 809 688 688 8387 32765 2130 1973 18897 6503 6303 944 673 673 31513 25000 1974 1931 8717 7008 5919 913 644 644 34498 22810 1975 21740 9905 17564 1249 614 614 51717 38403 1977 21740 9905 17564 1249 614 614 51717 38403 1978 1869 1760 5905 3696 641 279 599 58003 34766 1979 21740 9905 3696 640 2494 573 3133 25000 1973 18897 6503 6303 944 673 673 31513 25000 1973 18897 6503 6303 944 673 673 31513 25000 1974 1931 4748	1950	22875	4533	571	222	1319	1319	30838	15000				
1953 22895 5519 593 245 1547 1547 32343 15200 1954 22902 4443 651 252 1623 1623 31440 13500 1955 22916 4674 665 267 1662 1662 31841 229000 1957 24853 4869 741 275 1625 1625 33983 21000 1958 24548 5063 818 282 1588 1588 33881 17400 1959 20057 4751 995 289 1551 1551 29189 18300 1961 3933 4123 1365 303 1253 1253 17623 8400 1961 3933 4123 1365 303 1253 1253 17623 8400 1962 4801 3806 1548 3322 1103 1103 12666 13200 1963 12459 4843 2577 374 953 953 22150 15600 1964 13500 5142 2433 5165 641 778 778 794 24945 17600 1966 14625 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1967 17717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 19583 6714 6061 897 733 733 36040 25200 1971 16933 6767 5440 969 703 703 32765 21300 1973 18897 6603 6303 904 673 673 5138 22500 1972 1815 6658 5403 809 688 688 33577 22300 1973 18897 6503 6303 904 673 673 5138 22500 1973 18897 6503 6303 904 673 673 5138 22510 1975 18652 7008 5919 913 644 644 644 644 644 644 645 64	1951	22882	4734	594		1395	1395	31227	15000				
1954 22902	1952	22889	4955	584		1471	1471	31605	15000				
1955 22909 4559 628 260 1699 1699 31749 27400 1957 22461 4674 665 267 1662 1662 31841 22900 1957 24853 4869 741 275 1625 1625 33983 21000 1958 24548 5063 818 282 1588 1588 33881 17400 1959 20057 4751 995 289 1551 1551 29189 18300 1960 13865 4438 1183 296 1402 1402 22579 8300 1961 9333 4123 1365 303 1253 1253 17623 8400 1962 4801 3806 1548 3322 1103 1103 12686 13200 1963 12459 4843 2577 374 953 953 22150 15600 1964 13500 5142 2433 512 806 806 32219 15800 1965 14625 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1967 1717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 19883 6714 6061 887 733 733 33040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1973 18897 6503 6303 904 673 673 5138 25900 1974 19318 7117 7204 854 659 659 3690c 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21740 908 17364 1249 614 614 51717 38403 1977 1878 7688 1764 1249 614 614 51717 38403 1978 2178 1980 1228 1990 58603 41726 1979 1980 1786 1786 1797 1860 1798 1860 1798 1860 1971 1129 908 17364 1249 614 614 51717 38403 1972 1810 668 17398 1794 1799 1808 1808 1796 1796 1973 18497 15166 2653 559 569 61422 42101 1981 1790 1790 1808 1796 1797 1808 1797 1798 179	1953	22895	5519	593	245	1547	1547	32343	15200				
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1957 24853 4869 744 275 1625 1625 33983 21000 1958 24854 5063 818 282 1588 1588 33881 17400 1959 20057 4751 995 289 1551 1551 29189 18300 1961 3336 4438 1183 296 1402 1402 222579 8300 1961 3933 4123 1365 303 1253 1253 17623 8400 1962 4801 3806 1548 3322 1103 1103 12686 13200 1963 12459 4843 2577 374 953 953 22150 15600 1963 1425 4449 2718 573 794 794 24945 17600 1965 14025 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1967 17717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 1983 6714 6061 897 733 733 336040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 1815 6658 5403 809 688 688 33577 22300 1973 18897 6503 6303 904 673 673 33188 25900 1973 1865 6503 6303 904 673 673 33188 25900 1974 19318 7117 7204 854 659 659 36962 25165 1975 18652 7608 5919 913 644 614 35498 22810 1976 21740 908 17364 1249 614 614 51717 38403 6776 5449 1789 1789 1789 1865 1865 1878 187	1955	22909	4559	628	260	1699	1699	31749	27400				
1957 24853 4869 744 275 1625 1625 33983 21000 1958 24548 5063 818 282 1588 1588 33881 17400 1959 20057 4751 995 289 1551 1551 29189 18300 1960 13865 4438 1183 296 1402 1402 1402 122579 8300 1961 9333 4123 1365 303 1253 1253 17623 8400 1962 4801 3806 1548 3322 1103 1103 12686 13200 1963 12459 4481 2577 374 953 953 22150 15600 1964 13500 5142 2433 512 806 806 23219 15800 1965 14025 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1967 17117 6153 3978 819 763 763 31461 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 1983 6714 6061 897 733 733 36040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33575 22300 1973 18897 6503 6303 904 673 673 33188 25900 1974 19318 7117 7204 854 659 659 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 908 17364 1249 614 614 51717 38403 1978 2678 10147 17791 1601 599 599 58603 41726 1981 42394 12445 12783 2644 554 554 554 72487 51305 1983 3508 1364 1269 913 493 493 130593 9962 25165 1983 15084 24755 4261 719 446 446 446 4108 4108 7177 7180 1984 1398 13064 24755 4261 719 446	1956	22916	4674	665	267	1662	1662	31841	29900				
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1961 9433 4123 1365 303 1253 1253 17623 8400 1962 4801 3806 1548 332 1103 1103 12686 13200 1963 12459 4843 2577 374 953 953 22150 15600 1964 13500 5142 2433 512 806 806 23219 15800 1965 14625 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1967 17717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 19583 6714 6061 897 733 733 36040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 18693 6767 5440 969 703 703 32765 21300 1972 18115 6688 5403 809 688 688 33577 22300 1973 18897 6503 6303 904 673 673 35138 25000 1974 19318 7117 7204 854 659 659 36962 25165 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1980 30171 11249 5106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1983 85688 16809 13298 2123 523 523 223 20180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1984 3294 12445 12783 2644 554 554 72487 51305 1984 79867 16369 11202 1079 508 508 110843 84798 1984 879867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 493 310393 99947 1986 14706 20255 10862 997 447 4479 449 24488 191288 113465 1989 151084 24575 4261 2647 539 539 102183 73897 1999 207613 30326 6069 783 419 419 246808 19993 1999 207613 30326 6069 783 419 419 246808 19993 1999 207613 30326 6069 783 419 419 246808 19993 1999 207613 30	1959	20057	4751	995	289			29189	18300				
1961 9433 4123 1365 303 1253 1253 17623 8400 1962 4801 3806 1548 332 1103 1103 12686 13200 1963 12459 4843 2577 374 953 953 22150 15600 1964 13500 5142 2433 512 806 806 23219 15800 1965 14625 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1967 17717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 19583 6714 6061 897 733 733 36040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 18693 6767 5440 969 703 703 32765 21300 1972 18115 6688 5403 809 688 688 33577 22300 1973 18897 6503 6303 904 673 673 35138 25000 1974 19318 7117 7204 854 659 659 36962 25165 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1980 30171 11249 5106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1983 85688 16809 13298 2123 523 523 223 20180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1984 3294 12445 12783 2644 554 554 72487 51305 1984 79867 16369 11202 1079 508 508 110843 84798 1984 879867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 493 310393 99947 1986 14706 20255 10862 997 447 4479 449 24488 191288 113465 1989 151084 24575 4261 2647 539 539 102183 73897 1999 207613 30326 6069 783 419 419 246808 19993 1999 207613 30326 6069 783 419 419 246808 19993 1999 207613 30326 6069 783 419 419 246808 19993 1999 207613 30	1960	13865	4438	1183	296	1402	1402	22579	8300				
1962 4801 3806 1548 332 1103 1103 12686 13200 1964 13500 5142 2433 512 806 806 23219 15800 1964 13500 5142 2433 512 806 806 23219 15800 1965 14625 5449 2718 573 794 794 29445 17600 1966 17100 5905 3696 641 778 778 30171 21300 1966 16561 6203 4063 700 748 748 30294 22100 1968 16561 6203 4063 700 748 748 30294 22100 1968 16561 6787 7785 948 718 718 36910 25800 1971 16673 6767 5440 969 703 703 32765 21300 1971 16533 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1973 18897 6503 6303 904 673 6	1961	9333	4123	1365	303		1253	17623	8400				
1964 13500 5142 2433 512 806 806 23219 15800 1966 14625 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1968 16561 6203 4463 700 748 748 30294 22100 1970 1867 17717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4463 700 748 748 30294 22100 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1973 18897 6503 6303 804 673 673 35138 25000 1974 19318 7117 7204 854 659 669 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 7793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 779867 16369 11202 1019 446 446 170085 12981 1986 13798 20778 8886 899 479 446 446 170085 12981 1986 13905 2028 6091 719 446 446 170085 12981 1986 13905 2028 6091 719 446 446 170085 12981 1990 207613 30326 6069 783 419 419 246808 19093 1991 202559 32114 3865 816 408 408 241312 190305 1992 105300 31812 4882 954 388 384 385 385 230500 15663 1994 17959 207613 30326 6069 779 446 446 170085 12981 19900 207613 30326 6069 779 475 273 293 200000 15663 1799 1566 1566 18060 154257 19900 15663 153591 2890	1962		3806	1548	332		1103	12686	13200				
1964 13500 5142 2433 512 806 806 23219 15800 1966 14625 5449 2718 573 794 794 24945 17600 1966 17100 5905 3696 641 778 778 30171 21300 1968 16561 6203 4463 700 748 748 30294 22100 1970 1867 17717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4463 700 748 748 30294 22100 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1973 18897 6503 6303 804 673 673 35138 25000 1974 19318 7117 7204 854 659 669 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 7793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 779867 16369 11202 1019 446 446 170085 12981 1986 13798 20778 8886 899 479 446 446 170085 12981 1986 13905 2028 6091 719 446 446 170085 12981 1986 13905 2028 6091 719 446 446 170085 12981 1990 207613 30326 6069 783 419 419 246808 19093 1991 202559 32114 3865 816 408 408 241312 190305 1992 105300 31812 4882 954 388 384 385 385 230500 15663 1994 17959 207613 30326 6069 779 446 446 170085 12981 19900 207613 30326 6069 779 475 273 293 200000 15663 1799 1566 1566 18060 154257 19900 15663 153591 2890	1963	12459	4843	2577	374	953	953	22150	15600				
1966 17100 5905 3696 641 778 778 30171 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 19583 6714 6061 897 733 733 36040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 66658 5403 809 688 688 33577 22300 1973 18897 6503 6303 804 673 673 35138 25000 1973 18897 6503 6303 904 673 673 35138 25000 1974 19318 7117 7204 854 659 669 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1980 30171 11249 15106 2663 569 569 61422 42101 1981 4294 12445 12783 2644 554 554 72487 51305 1982 67793 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2663 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 523 120180 99956 1984 79867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 433 433 182750 137989 1918 42475 42475 4261 750 433 433 182750 137989 1919 202559 32114 3865 816 408 408 241312 190305 1992 207613 30326 6069 783 419 446 446 4108 41312 190305 1992 207613 30326 6069 783 419 446 446 4108 4199 4199 426808 1919 30469 22540 33103 3886 3899 3579 22540 33103 33103 33103 33103 33103 340640	1964	13500	5142	2433		806	806	23219	15800				
1967 17717 6153 3978 819 763 763 31461 21300 1968 16561 6203 4063 700 748 748 30294 22100 1969 19583 6714 6061 897 733 733 36040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1974 19318 7117 7204 854 659 659 30962 25165 201797 19318 7117 7204 854 659 659 30962 25165 201797 21740 9058 17364 1249 614 614 51717 34403 31788 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 41261 2647 539 539 102183 38897 1885 98527 18840 9928 913 493 493 130593 99647 1986 14706 20235 10062 907 487 487 48208 113465 1987 1987 125999 20778 8886 899 459 459 45840 1998 11908 201761 33862 1990 207613 30326 6069 783 419 419 246808 190993 1990 207613 30326 6069 783 419 419 246808 190993 1990 207613 30326 6069 783 419 419 246808 190993 1990 207613 30326 6069 783 419 419 246808 190993 1990 207613 30326 6069 783 419 419 246808 190993 1990 207613 30326 6069 783 419 419 246808 190993 1990 207613 30326 6069 783 419 419 246808 190993 1990 207613 30326 6069 783 419 419 246808 190993 1900 207613 30326 6069 783 419 419 246808 190993 1900 207613 30326 6069 783 419 419 246808 190993 1900 207613 30326 6069 783 419 419 246808 190903 1900 215644 22545 24545 24545 24545 24545 24545 24545 24545 24545 24545 24545 24545	1965	14625	5449	2718	573	794	794	24945	17600				
1968 16561 6203 4063 700 748 748 30294 22100 1969 19583 6714 6061 897 733 733 36040 25200 1970 18671 6787 7785 948 718 718 36910 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1973 18897 6503 6303 904 673 673 35138 25000 1974 19318 7117 7204 854 659 659 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 130593 809647 1986 14706 20235 10062 907 487 487 148208 113465 1989 151084 24575 4261 750 433 433 182750 137989 1990 207613 30326 6069 783 419 419 246808 129819 1989 151084 24575 4261 750 433 433 182750 137989 1990 207613 30326 6069 783 419 419 246808 124180 1991 1902 20259 20214 3888 884 385 385 230500 176435 1992 208309 31812 4882 994 439 439 439 439 439 1992 208379 22924 4388 884 385 385 230500 176435 1999 207613 30326 6069 783 419 419 246808 439 439 1991 202559 23114 3865 816 408 408 241312 190305 1992 208608 31812 4882 994 394 393 339 206640 154955 1999 25860 35180 8463 2253 316 316 273468 137992 2	1966	17100	5905	3696	641	778	778	30171	21300				
1969 19583 6714 6061 897 733 733 36040 25200 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1973 19318 7117 7204 854 6659 659 36962 25165 1974 19318 7117 7204 854 6659 659 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 21977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 38568 16809 13298 2123 523 523 120180 90956 1894 79867 16369 11202 1079 508 508 508 10843 84798 1985 98527 18840 9928 913 493 493 130593 99647 1896 14706 20235 10062 907 487 487 148208 113465 1988 139305 20928 6691 719 446 446 170085 129819 1990 207613 30326 6069 783 419 419 246808 190993 1991 202559 32114 3865 816 408 408 241312 24388 187941 1991 202559 32114 3865 816 408 408 241312 24388 18741 1991 1902 20255 3214 3865 816 408 408 241312 24456 13798 1991 202559 32114 3865 816 408 408 241312 24458 13798 1992 202761 38805 510062 919 374 374 253925 193005 13798 1991 202559 32114 3865 816 408 408 241312 24386 13799 207613 30326 6069 783 419 419 246808 190993 1992 202559 32114 3865 816 408 408 241312 24386 13799 243604 243288 187241 24386 24381	1967	17717	6153	3978	819	763	763	31461	21300				
1969 19583 6714 6061 897 733 733 36040 25200 25800 1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 33577 22300 1973 19318 7117 7204 854 6659 659 36962 25165 1974 19318 7117 7204 854 6659 659 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 21977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 38568 16809 13298 2123 523 523 120180 90956 1894 79867 16369 11202 1079 508 508 508 10843 84798 1985 98527 18840 9928 913 493 493 130593 99647 1896 14706 20235 10062 907 487 487 148208 113465 1988 139305 20928 6691 719 446 446 170085 129819 1990 207613 30326 6069 783 419 419 246808 190993 1991 202559 32114 3865 816 408 408 241312 24388 187941 1991 202559 32114 3865 816 408 408 241312 24388 18741 1991 1902 20255 3214 3865 816 408 408 241312 24456 13798 1991 202559 32114 3865 816 408 408 241312 24458 13798 1992 202761 38805 510062 919 374 374 253925 193005 13798 1991 202559 32114 3865 816 408 408 241312 24386 13799 207613 30326 6069 783 419 419 246808 190993 1992 202559 32114 3865 816 408 408 241312 24386 13799 243604 243288 187241 24386 24381	1968	16561	6203	4063	700	748	748	30294	22100				
1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 338577 22300 1973 18897 6503 6303 904 673 673 35138 25000 1974 19318 7117 7204 854 659 659 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 130593 99647 1986 114706 20235 10062 907 487 487 48208 124180 1988 139305 20928 6691 719 446 446 170085 129819 1989 151084 24575 4261 750 433 433 433 133798 1990 207613 30326 6069 783 419 419 246808 190993 1991 202559 32114 3865 816 408 408 241312 190305 1992 168379 26966 2652 850 396 396 200748 15644 1993 194629 29254 3888 884 385 385 323500 176435 1994 215952 31403 3862 919 374 374 253925 19805 1995 203006 31812 4882 954 362 362 242388 187241 1996 180048 29913 5740 1164 351 351 224545 1940640 1998 178510 29254 3888 884 385 385 323500 2156763 1999 225860 33180 8463 2253 316 316 273462 19655 1999 225860 33180 8463 2253 316 316 273462 19655 1999 25860 34184 4949 2751 270 270 166040 15955 1990	1969	19583	6714	6061	897	733	733	36040	25200				
1971 16933 6767 5440 969 703 703 32765 21300 1972 18115 6658 5403 809 688 688 338577 22300 1973 18897 6503 6303 904 673 673 35138 25000 1974 19318 7117 7204 854 659 659 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 130593 99647 1986 114706 20235 10062 907 487 487 48208 124180 1988 139305 20928 6691 719 446 446 170085 129819 1989 151084 24575 4261 750 433 433 433 133798 1990 207613 30326 6069 783 419 419 246808 190993 1991 202559 32114 3865 816 408 408 241312 190305 1992 168379 26966 2652 850 396 396 200748 15644 1993 194629 29254 3888 884 385 385 323500 176435 1994 215952 31403 3862 919 374 374 253925 19805 1995 203006 31812 4882 954 362 362 242388 187241 1996 180048 29913 5740 1164 351 351 224545 1940640 1998 178510 29254 3888 884 385 385 323500 2156763 1999 225860 33180 8463 2253 316 316 273462 19655 1999 225860 33180 8463 2253 316 316 273462 19655 1999 25860 34184 4949 2751 270 270 166040 15955 1990	1970	18671	6787	7785		718	718	36910	25800				
1973 18897 6503 6303 904 673 673 35138 25000 1974 19318 7117 7204 854 659 659 36962 25165 1975 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1978 24778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 99956 1984 79867 16369 11202 1079 508 508 508 110843 84798 1985 98527 18840 9928 913 493 493 130593 99647 1986 114706 20235 10062 907 487 487 148208 113465 1987 125999 20778 8586 899 459 459 158468 124180 1988 139305 20928 6991 719 446 446 170085 129819 1990 207613 30326 6069 783 419 419 246808 19093 1991 202559 32114 3865 816 408 408 241312 190305 1992 168379 26966 2652 850 396 396 200748 155644 1993 194629 29254 3888 884 385 385 230500 176435 1994 12595 31143 3862 919 374 374 245325 198805 1995 203006 31812 4882 954 362 362 242388 187241 1996 18044 34293 3969 2326 305 305 258211 210343 2001 171052 28998 5279 2475 293 293 200300 156435 2002 215444 34293 3969 2326 305 305 258211 210343 2001 171052 28998 5779 2475 293 293 2009302 156763 2001 130740 28155 8742 2764 190 190 171757 131943 2011 155300 30855 5712 2766 179 179 195067 174356 2010 130740 28155 8742 2764 190 190 171757	1971	16933	6767	5440	969		703	32765	21300				
1974 19318 7117 7204 854 659 659 36962 25165 18652 7608 5919 913 644 644 35498 22810 1976 21013 8427 6340 1078 629 629 39203 36852 1977 21740 9058 17364 1249 614 614 51717 38403 41726 1979 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 559 569 61422 42101 1981 42394 12445 12783 2644 554 554 77487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 130593 99647 18961 14706 20235 10062 907 487 487 148208 113465 1987 125999 20778 8586 899 459 459 158468 124180 1988 139305 20928 6991 719 446 446 170085 129819 1989 151084 24575 4261 750 433 433 182750 137989 1990 207613 30326 6069 783 419 419 246808 190993 1990 202559 32114 3865 816 408 408 241312 190305 1992 168379 26966 2652 850 396 396 200748 155644 1993 194629 29254 3888 884 385 385 230500 176435 1994 215952 31403 3862 919 374 374 253925 198805 1999 125860 31812 4882 954 362 362 242388 187241 1993 1996 186048 29913 5740 1164 351 351 224545 174692 1999 168044 34293 3769 2326 305 305 258211 210343 2000 176052 28998 5279 2475 299 259 259 175169 119093 20051 135912 28486 5610 1072 339 339 206640 154955 1998 178510 29224 12630 1266 328 328 223311 165992 1999 125860 31812 4882 954 362 362 242388 187241 190305 136992 136051 29539 7885 2789 225 225 177572 124327 12004	1972	18115	6658	5403	809			33577	22300				
1975	1973	18897	6503	6303	904	673	673	35138	25000				
1976 21013 8427 6340 1078 629 629 39203 36852 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 66142 42101 1981 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 493 130593 99647 1986 114706 20235 10062 907 487 487 148208 113465 1987 125999 20778 8586 899 459 459 158468 124180 1988 139305 20928 6991 719 446 446 170085 129819 1989 151084 24575 4261 750 433 433 182750 137989 1990 207613 30326 6069 783 419 419 246808 190993 1991 202559 32114 3865 816 408 408 241312 190305 1992 168379 26966 2652 850 396 396 200748 155644 1993 194629 29254 3888 884 385 385 330500 176435 1994 215952 31403 3862 919 374 374 253925 19805 1995 203006 31812 4882 954 362 362 242388 187241 1996 186048 29913 5740 1164 351 316 273462 198653 1999 225860 31810 8463 2253 316 316 273462 198653 2000 216044 34293 3969 2326 305 305 258211 210343 2001 171052 28998 5279 2475 293 293 209002 156763 2001 137052 28998 4369 2812 248 248 19128 140199 2005 153591 28990 4509 2812 248 248 19128 140199 2005 153591 28990 4509 2812 248 248 19128 140199 2005 153591 28990 4509 2812 248 248 19128 140199 2005 153591 28990 4369 2812 248 248 19128 140199 2005 153591 28990 4509 2812 248 248 19128 140199 2005 153591 28990 4509 2812 248	1974		7117	7204	854	659	659	36962	25165				
1977 21740 9058 17364 1249 614 614 51717 38403 1978 26778 10147 17791 1601 599 599 58603 41726 1979 34309 11456 16288 1950 584 584 66269 47628 1980 30171 11249 15106 2653 569 569 61422 42101 1881 42394 12445 12783 2644 554 554 72487 51305 1982 67793 15285 14261 2647 539 539 102183 73897 1983 85688 16809 13298 2123 523 523 120180 90956 1984 79867 16369 11202 1079 508 508 110843 84798 1985 98527 18840 9928 913 493 493 130593 99647 1986 114706 20235 10062 907 487 487 148208 113465 1988 139305 20928 6991 719 446 446 170085 129819 151084 24575 4261 750 433 433 182750 137989 1990 207613 30326 6069 783 419 419 246808 190993 1991 202559 32114 3865 816 408 408 241312 190305 1992 168379 26966 2652 850 396 396 200748 155644 1993 194629 29254 3888 884 385 385 230500 176435 1994 215952 31403 3862 919 374 374 253925 198805 1999 12750 31812 4882 945 362 242388 187241 1996 186048 29913 5740 1164 351 351 224545 174692 1999 17105 28898 5279 2475 293 293 209302 156763 2002 132484 32597 5396 2565 282 282 174568 13799 2006 165899 32716 6819 1261 236 236 2021 171052 28998 5279 2475 293 293 209302 156763 2001 171052 28998 5279 2475 293 293 209302 156763 2001 171052 28998 5279 2475 293 293 209302 156763 2001 171052 28998 5279 2475 293 293 209302 156763 2001 130740 28155 8742 2764 190 190 171757 131943 2001 130740 28155 8742 2764 190 190 171757 131943 2011 135300 30885 5712 2796 799 144 144 189853 159212 2014 149915 29702 7087 7999 144 144 148883 159212 2015 128704 27835 14126 2798 1110 110 14550	1975	18652	7608	5919	913	644	644	35498	22810				
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	Total	6031324	1192532		91657				5966140				

Table S11. Data reliability (uncertainty) scores separated by category and fishing sector CWMS, catch weighted mean score

Time period	Artisa	Lake Victoria Artisanal Subsistence			Lakes, dams and Tana River Delta Artisanal Subsistence			Rivers Artisanal Subsistence			Total reconstructed			
1	Score	±%	Score	±%	Score	±%	Score	±%	Score	±%	Score	±%	CWMS	±%
1950-1969	2	30	1	50	2	30	1	50	1	30	1	30	1.7	34
1970-1989	3	20	1	50	2	30	1	50	1	50	1	50	2.5	27
1990-2009	3	20	1	50	3	20	1	50	1	50	1	50	2.7	25
2010-2017	3	20	1	50	4	10	1	50	1	50	1	50	2.7	25
Total													2.6	26

Methods

Filling in reported baseline gaps

Lakes, dams and the Tana River Delta

Catches for Turkwel Dam and Tana River Dams fisheries was assumed to be 0 tonnes (t, Mg) in the year before the first dam being constructed on these rivers, so as to account for the enhancement of fisheries that dam construction on rivers in Kenya is known to produce (Mann 1969). The years of dam completion were 1968 for the Tana River Dams (Mann 1969) and 1991 for Turkwel Dam (Renshaw *et al.* 1998). Catches were then linearly interpolated from 0 t in 1967 (for the Tana River Dams) and 1990 (for Turkwel Dam) to earliest available catch anchor points (Tables S6, S8). As no information was identified for the state of the fisheries in these rivers before initial dam construction, catches were not estimated for these fisheries before these dates to remain conservative. Several other dams were constructed on the Tana River following the construction of the first dam in 1968, and although these may have influenced catches, no information could be identified to help quantify these changes. This should be a focus of future research.

The commercial fishery of Lake Naivasha began in 1959 (Table S3), therefore baseline catches were assumed to be 0 t from 1950 to 1958. Catches were linearly interpolated from 0 t in 1958 to the earliest catch anchor point to complete the catch time series. Thus, the only reconstructed catches for Lake Naivasha before 1959 were subsistence catches from fisher-households.

Rivers

The only data anchor point for the Athi–Sabaki river was for the lower portion of the river for 1959 (Table S9). Owing to the lack of information and to remain conservative, it was assumed that catches from the Athi–Sabaki river peaked in 1959. The lower portion of the Athi–Sabaki river is in the same province as the Tana River Delta (TRD). Thus, catches from the TRD were used as a proxy to estimate catches for the Athi–Sabaki river as no other information was available. The rate of decline of TRD catches from their peak in 1966 to 2017 was 1.5% year⁻¹. This value was used to produce a time series of catches for the Athi–Sabaki river from 1959 to 2017 based on the 1959 catch anchor point.

Fisheries data for the Sondu-Miriu river were not available after 1987, however, catches were known to be equivalent to subsistence levels in 2017 (Julius Manyala, Jaramogi Oginga Odinga University of Science and Technology, pers. comm.). The number of fishers was available for 1992, which was used to estimate the

number of fishers in 2017 based on human population density changes in the Kisumu and Homa Bay counties (Table 1). Total subsistence catch for 2017 was estimated using the number of fishers, the average number of people per household and the 73 kg year⁻¹ fish consumption rate for people in fisher-households from Kolding (1989). Catches were then linearly interpolated from the 1987 catch anchor point to the 2017 value to produce a completed catch time series.

Fisheries data for the Malewa, Kuja, Ewaso-Ngiro and Nzoia rivers were not available after 1990 (Table S9). The Kuja and Nzoia rivers are in the same province as the Sondu-Miriu river and are of comparable length. Owing to the lack of information, changes in catch from the Sondu-Miriu was used as a proxy for estimating catches for the Kuja and Nzoia Rivers after 1990. Changes in catch from the Sondu-Miriu were also used as a proxy to estimate catch for the Ewaso-Ngiro and Malewa rivers, as the lengths of these rivers are closer to that of the length of the Sondu-Miriu, as opposed to the Tana River for which catch data are available after 1990. The rate of decline in catches from the Sondu-Miriu river from 1959 to 2017 was derived (assuming conservatively that the 1959 anchor point was the peak of catch), which gave a rate of decline of ~1.5% per year. This rate of decline was applied to the latest (i.e. closest to 2017) anchor point for each river and used to produce a full time series of catch to 2017.

All catch estimates produced for water bodies in the 'Rivers' category using these methods resulted in declining catches from the earlier anchor points to 2017, therefore these are likely minimum estimates.

Catch totals and taxonomic composition of catch

Reported catches and the taxonomic composition of catches fluctuated greatly from year to year for many water bodies, without following a distinct long-term trend of decline or increase. This was assumed to be the result of water level fluctuations in these water bodies, which is often a major predictor of freshwater fisheries catches (Gownaris et al. 2016). No continuous water-level data spanning 1950–2017 were available for any water bodies examined in this study. To account for this natural variability in water level, the ratio of consecutive five year mean catches to population density was used to approximately estimate catches back to 1950 using changes in population density as a proxy. This resulted in 'smoother', average catch times series than likely occurred. For example, if the earliest (i.e. closest to 1950) catch anchor points available for a water body were from 1965 to 1969, the catch to population density ratio would be calculated for each of these five years and then the mean ratio over these five years would be derived. This 5-year mean ratio would be used to estimate catches from 1950 to 1964 based on the changes in population density in the province or county in which the particular water body is located. Several water bodies did not have five consecutive years of catch anchor points available for this purpose, in these cases, two, three or four-year catch to population density ratios were derived and used instead. To account for the intra-annual variability in taxonomic composition, the five-year mean of the taxonomic composition proportion for each species was calculated, where sufficient data were available, and then applied to all catches preceding it back to 1950.

The marbled lungfish (*Protopterus aethiopicus*) was introduced into Lake Baringo in 1975 and first appeared in catches in 1984 (Kimani *et al.* 2018). The proportion of catches from Lake Baringo that this species accounted for was assumed to be 0% in 1983 and increased linearly to the next anchor point in 1992. The introductions of

Nile perch and Nile tilapia into Lake Victoria are accounted for in reported data. No taxonomic compositions of catches were available for water bodies in the 'Rivers' category, therefore all catches were categorised as 'Freshwater fishes not elsewhere included.' Detailed studies on the taxonomic composition of catches in various freshwater systems besides Lake Victoria are urgently needed for Kenya.

Quantifying fully unreported catch components

Fisher-household catches

First, a time series of licenced fishers was produced for all nine water bodies by linearly interpolating between anchor points (Tables S1–S7). Several water bodies only had data available from the 1990s to 2017, therefore, to estimate the number of fishers back to 1950, it was assumed that the number of fishers would change at the rate of change of population density for the county or province in which these water bodies were located. Second, the total number of people in fisher-households associated with each water body from 1950 to 2017 was estimated by multiplying the annual average household size by the number of licenced fishers for each year. Population density and average annual household sizes were taken from historical Kenyan censuses (Kenya National Bureau of Statistics 1957, 1967, 1974, 1982, 1994, 2002, 2012, 2019), with figures from each census year linearly interpolated to create a full time-series from 1950 to 2017. Average household sizes were not available for certain provinces or counties for earlier periods, therefore the earliest available numbers were used, and assumed to be constant for all years back to 1950.

Illegal catches

The 1958 anchor point for Lake Victoria (Lake Victoria Fisheries Service 1959) included catch from illegal gear, which was not included in any other total baseline catch anchor points for Lake Victoria. To account for this and to remain conservative, it was assumed that this catch included the 25% illegal unreported catch applied to all taxa from Lake Victoria catches from 1950 to 1982. To estimate the 'reported' portion of catch for this year, the total original figure of 25 488 t was divided by 1.25, giving a baseline catch of ~20 390 t from legal operations and ~5098 t from illegal and unreported operations for 1958. Linear interpolation was performed between this 'legal' catch for 1958 and the closest 1948 and 1961 anchor points to complete the time series.

Bait catches

Based on the method used in Mkumbo and Mlaponi (2007), it was assumed that bait catches were proportional to the number of longline hooks in Kenya's portion of Lake Victoria, with number of longline hooks from 2000 to 2016 taken from Lake Victoria Fisheries Organization (2017). Thus, the number of longline hooks reported for Kenya's portion of Lake Victoria from 2000 to 2016 (Lake Victoria Fisheries Organization 2017) was used to estimate unreported bait catches from 2000 to 2016. There were no longline hook data available for 2017, and thus it was assumed that the proportion of bait catch to total reported catch remained the same from 2016 to 2017. Longline hook data were only available for Tanzania's portion of Lake Victoria from 1992 to 2000, thus the ratio of longline hooks in Kenya's portion of Lake Victoria to those in Tanzania's portion of Lake Victoria for 2000 was used to estimate the number of hooks over this period. Owing to a lack of information and to remain conservative, it was assumed that the longline Nile perch fishery began in 1981 (i.e.

unreported bait catches were 0 in 1980), as this was when reported Nile perch catches first saw a major increase (Greboval and Fryd 1993). To complete the bait-catch time series from 1981 to 2017, linear interpolation was used to estimate catch between 1981 and 1992, and any other years from 1992 to 2016 where there were no longline hook data available.

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