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“Strengthening Flyway Conservation in a Changing World”

**Conservation Brief for the CMS/AEWA International
Single Species Action Plan for the Conservation of the
Ferruginous Duck**

Aythya nyroca

Agreement on the Conservation of
African-Eurasian Migratory Waterbirds (AEWA)

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Single Species Action Plan for the Conservation of the
Ferruginous Duck**

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(To be used in conjunction with the ISSAP published in June 2006 – please access [here](#))

May 2022

**Produced by the AEWA Technical Committee
Compiled by Paul Buckley**

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OVERVIEW AND SUMMARY

The International Single Species Action Plan (ISSAP) for the conservation of the Ferruginous Duck was published in June 2006 as a joint plan of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) and the Convention on Migratory Species (CMS). The 7th session of the Meeting of the Parties to AEWA in 2018 requested the AEWA Technical Committee to produce a shorter conservation brief for this ISSAP, since it was lacking an international coordination mechanism, in order to highlight any new scientific information and/or threats as well as to boost implementation and re-engage relevant range states. This Conservation Brief shall be used in conjunction with the full ISSAP.

The Ferruginous Duck is a very widespread species that is nonetheless of conservation concern. It is thought to breed in around 45 countries and to occur regularly in at least 30 more. This, and its poorly recorded population in many areas, makes its conservation status and threat level hard to generalise on. The species is currently listed as Near Threatened on the IUCN Red List as it is suspected to be undergoing a moderately rapid overall decline. It was down listed from Vulnerable shortly before the International Species Action Plan was written in 2005.

The most recent population estimates as collated by Wetlands International are as follows: 2,800-3,000 individuals in the western Mediterranean and in North and West Africa; 24,000-61,000 individuals in Eastern Europe and the Eastern Mediterranean and Sahelian Africa; 25,000-50,000 individuals in West and South-West Asia as well as in North-East Africa, and c.100,000 individuals elsewhere in Asia (Wetlands International 2017; Mundkur *et al.* 2017), giving a total of c.151,800–214,000 individuals.

The threats identified in the original action plan appear to largely remain valid although many of the uncertainties identified then persist today. The most significant known habitat loss in Eastern Europe in the last 20 years has been the abandonment and fragmentation of many former fishponds, while some of those remaining have become more intensively managed. Nonbreeding areas such as in the Sahel are subject to threats from drought and irrigation and hunting is widespread in many countries. The Ferruginous Duck is seen as a potential indicator of the extent of eutrophication and its benthic feeding habitats render it vulnerable to increases in turbidity and siltation.

There has been limited systematic monitoring or conservation intervention in the last 15 years. However there have been many investments in wetland habitat creation and restoration especially in EU member states and these have often benefitted Ferruginous Duck, for example at Hortobagy in Hungary and Kalimok and Persina Nature Park in Bulgaria.

National and international recognition and protection of wetlands is core to its conservation. Wetland conservation programmes can benefit Ferruginous Ducks if focused on creating mosaics of ponds with extensive emergent vegetation within wider wetland. In Eastern Europe there are opportunities to better implement agri-environment programmes to safeguard and manage remaining wetland habitats including old fishponds. There is an over-riding need to obtain better information about populations of the species, especially in Asia, as well as to better understand threats and conservation solutions. Improving practice to combat generic threats such as fishing practices and management of invasive species is also important. Reintroduction programmes have been undertaken e.g., in Germany, Israel and Italy and could be employed further in areas which are on the margins of the species range.

At the adoption of the International Species Action Plan, a Ferruginous Duck Conservation Team was established. However, competing priorities and lack of funding meant that this has become inactive. If an ISWG is revived, it must include Government representatives as well as NGOs to ensure continuity and to enhance policy and decision making. Meetings of group representatives and any National Action Plans could perhaps focus on a suite of species, using Ferruginous Duck as one flagship indicator of favourable wetland conditions. Nationally, a short single species plan may be a valuable tool for advocacy and fundraising. Given the wide range of threats facing this species and the limited resources, it is recommended

that key partners meet and agree a small number of priority actions which would offer the greatest benefit to this species.

1. INTRODUCTION & BASIC DATA

- Conservation Brief for the CMS/AEWA International Single Species Action Plan for the Conservation of the Ferruginous Duck (*Aythya nyroca*). Full action plan at: https://www.unep-aewa.org/sites/default/files/publication/ts7_ssap_ferruginous_duck_complete_1.pdf
- Compiled by Paul Buckley. Additional experts contributing: Karen Aghababyan (Armenia), Kerem Ali Boyla and Kiraz Erciyas (Turkey), Alam Sarowar (Bangladesh), Richard Hearn (WWT), Yoav Perlman (Israel), Nicky Petkov (Bulgaria), Glyn Young (Durrell Wildlife Conservation Trust)
- **Technical Committee adoption:** *Adopted by the AEWA Technical Committee in May 2022*
- **Introduction:** The original International Species Action Plan was produced in 2005 and adopted at MOP3 in 2005. It was originally published with timelines for implementation through to 2020 with an expectation of regular review and revision. It was extended through agreement of Resolution 7.5 at MOP 7 for the period 2019 to 2028. Recommendations were to consider the production of this Conservation Brief, and to re-establish efforts to enhance international coordination of implementation. The Ferruginous Duck Conservation Team was established at the time of the ISSAP publication as an ISWG but has become inactive. However, some informal collaborations continue, and the IUCN Duck Specialist Group and the Threatened Waterfowl Specialist Group also maintain an overview of the species.

Table 1. Review of Basic Data

Populations covered by the Plan:	West Mediterranean/North and West Africa	Eastern Europe/E. Mediterranean and Sahelian Africa	West and SW Asia and NE Africa (and rest of Asia)
AEWA Table 1 category, also indicating possible change since ISSAP adoption (Y/N – if yes, indicate new versus old listing)	A 1a, 1c Appendix 1 of CMS Appendix III of CITES SPEC 1, Annex 1 of EU Birds Directive 79/409	A 1a, 3c Appendix 1 of CMS SPEC 1, Annex 1 of EU Birds Directive 79/409	A 1a, 3c Appendix 1 of CMS Appendix III of CITES
Change in global, regional and/or sub-regional Red List status (Y/N - if yes, indicate new versus old listing)	NT Globally (was VU until 2000) Europe – VU Now considered LC in Europe	NT Globally (was VU until 2000) Europe – VU	NT Globally (was VU until 2000)
Change in Principle Range States, i.e. countries regularly hosting over 1% of the biogeographic population (Y/N). If yes list changes per population.	Overall population appears to have stabilised or increased with populations e.g., in Spain and Italy benefitting from conservation programmes. North	Overall population trend unclear but appears to have stabilised or increased. Shifts southwards with declines in e.g., Poland but increases in	No clear trend and poor information but the population may be continuing to decline. Possible climatic shifts with populations perhaps increasing in parts of China

	African population probably decreasing. Few recent counts from Sahel.	Romania, Bulgaria, Greece, Turkey.	
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2. ACTION FRAMEWORK REVIEW

- Adopted International Action Plan Goal and Purpose:**
Goal: Restoration of the Ferruginous Duck to favourable conservation status. Indicator: Ferruginous Duck removed from the IUCN red list by 2050;
Project purpose: Maintain global population and range of the Ferruginous Duck. Indicators: Ferruginous Duck global population and range stable by 2020.

The Table below is adapted from the original Action Plan action framework (now extended to 2028) showing the **objectives**, associated **problems**, **results** and **actions** into the new action framework template adopted at MOP7 (shown below). Changes in the prioritisation of actions based on the revised threat assessment and additional recommendations for action are shown **in red font**.

Table 2. Review of Action Framework

<i>Objective 1: Further habitat loss and degradation prevented</i>						
Problem	Result	Action	Priority in original ISSAP (Revised)	Time scale (Revised)	Organisations responsible	Implementation status and recommendations
Lack of organised national and international policy activity for the species	Result 1.1 National and International awareness and policy actions (All principal range states)	1.1.1. Produce and implement national Ferruginous Duck (FD) action plans	Essential Revise to Medium	2026	National Government/NGOs European Commission	Bulgaria NAP revised in 2015. Little progress elsewhere. Need will vary It may help to produce very concise FD plans or plans for suites of wetland species in key habitats. Maintain within the priority list of LIFE Program.
		1.1.2. Form national Ferruginous Duck working groups	Essential Revise to Medium	2024	National Government/NGOs	Maybe better as a fora for a suite of wetland species. A working group could be formed for a specific project or where FD used as flagship or where active implementation of a national plan.
		1.1.3 Introduce public awareness schemes to promote conservation of the Ferruginous Duck and its habitat and circulate this	Low Revise to Medium	Ongoing	National Government/NGOs	Limited activity although perhaps as part of wider suite of species. Some focused

		information to relevant policy makers, interest groups and local people; provide information on identification of protected species				work as part of LIFE projects in Bulgaria.
Poor protected status of key wetland sites	Result 1.2 Better legal protection and management for key wetland sites (All range states)	1.2.1. Designate all key sites for the species as SPAs (within the EU) or Ramsar sites elsewhere	High Revise to Essential	2024	National Governments	Variable progress with some new sites designated. This is a clear tangible action that can help FD. Priority to list/protect many more wetlands with this species. A role for any overseeing group to advise on site list (Wetlands International CSN 2022).
		1.2.2 Protect all Ferruginous Duck IBAs under national legislation and ensure this is enforced	High Revise to Essential	2024	National Governments	Variable progress with some new sites designated – unclear if any explicitly linked to this species. Enforcement is an issue with lack of management e.g. infringement proceedings in Bulgaria for poor management This is a clear tangible action that can help FD. Priority to list/protect many more wetlands

						with this species including in non-breeding range.
		1.2.3 Develop management and zonation plans to regulate human activities at key sites, with special regard to hunting, fishing and boating, in order to reduce causes of disturbance and mortality	Medium Revise to Essential	Ongoing	National Government/NGOs	Variable progress with some wetland management initiatives benefitting FD e.g., in restoration projects in Hungary and Bulgaria, FD is a key species. This is a clear tangible action that can help FD. Focus on protecting habitat mosaics, creating suitable conditions with emergent vegetation, and improving connectivity of wetlands.
Wetlands are being lost or degraded by ill-informed development decisions	Result 1.3 Improve decision making processes concerning land use developments around wetlands (all range states)	1.3.1 Implement appropriate assessments for all projects and plans affecting these sites, with special attention to agricultural development, drainage, diversion of rivers, abstraction of water and building of dams	Essential	Ongoing	National Governments	Variable progress with some improved decision making – unclear if any explicitly linked to this species. Bulgaria, EIA often poor e.g., all ponds around Burgas Lake drained and turned into construction grounds. Huge losses in some places to farming e.g. Bangladesh. Use climate funds for wetland restoration

Reductions in macrophytes and ecological changes wrought by grass carp and other alien fish	Result 1.4 Elimination of alien fish especially grass carp (Eastern Europe and Central Asia)	1.4.1 Introduce legislation to prohibit the introduction, and allow the control and eradication of Grass Carp	Low Revise to Medium	2026	National Governments	Unknown progress – may warrant higher priority in key areas
		1.4.2 Identify all key Ferruginous Duck sites where Grass Carp occurs and eradicate it	Low Revise to Medium	2024 (for listing)	National Governments	Unknown progress – may warrant higher priority in key areas

Objective 2: Direct mortality of adults prevented, and reproductive success increased

Problem	Result	Action	Priority	Time scale	Organisations responsible	Implementation status
Poor legal protection for the species and enforcement of existing laws	Result 2.1 Improve legal protection for Ferruginous Duck and its habitat (all range states but esp. Central Asia and Eastern Europe (enforcement))	2.1.1. Provide legal protection for Ferruginous Duck including the general protection of its habitat outside of protected areas	Essential	2024	National Governments	Protection exists in many areas, but illegal hunting persists and actual or claimed confusion of ID e.g. Algeria, Turkey, Bulgaria. Armenia 50,000 hunters - no training or skills on ID, but this is now planned by NGO. Hunting decreasing in some places (Bangladesh). Improve law enforcement where practical to do so

						including with training and material support. Where appropriate engagement with and training of hunters to reduce hunting of this species.
		2.1.2. Provide adequate wardening of all key sites	Medium High	By 2025	National Governments, NGOs and other landowners	Limited by resources, needs prioritisation of sites at national level. For key sites importance should be High In Armenia, the Armash fishponds eco-tourism has led to cessation of hunting there – this is a good model where possible. Develop more management plans as a precursor to a rationale for wardening.
Poor current and past habitat and species management	Result 2.2 Improve management and restoration of key Duck habitats (All of Eastern Europe but esp. EU member states where financial option exists to do this)	2.2.1 Develop national strategies for the management and subsequent use of fishponds by identifying ‘best practice guidelines’, focusing on habitat creation and management. These to include financial subsidy/accreditation schemes for ‘wise use’ of fishponds and incentives for maintaining/ reverting to extensive fishpond management	Essential	2024	National Governments European Commission	Some progress EU in e.g., Bulgaria. There is a need to maintain as priority species attracting larger (75%) of LIFE funds. EU Member States should cover SPAs selected for the species by aqua-environmental measures proposed in the new Fisheries Fund Regulation. Restoration has led to reintroduction in a few countries e.g. Germany, Israel. Include Third countries in EU projects.

		2.2.2 Create new breeding and wintering habitat for the Ferruginous Duck	Medium	Ongoing	National Government/NGOs European Commission	Variable progress with some new management initiatives e.g., Israel where all the 39 known pairs now breed on artificial sites (Perlman 2021). Consider how EU funds could be used for this.
Excessive mortality	Result 2.3 Better control of hunting practices and regulations (All but esp. breeding range states in East Europe and Central Asia)	2.3.1 Ban use of lead shot for hunting waterfowl and over wetlands, monitor lead shot use by hunters and lead shot ingestion by Ferruginous Ducks	Medium	Short	National Government	Progress at least in EU though gradual. Some assessments of impact but more studies would be useful A key High priority is to stop and enforce use of lead
		2.3.2 Ensure strict enforcement of hunting regulations and policing of foreign hunters	Essential (in key countries)	Ongoing	National Government	Progress mostly not known. Examples e.g., Bulgaria of NGO-Govt patrols to enforce regulations in winter
		2.3.3 Promote strict spatial and temporal hunting regulations that reduce the probability of hunting mortality	Essential	Ongoing	National Governments	Progress not known. Some no hunting zones in Bulgaria but more needed especially in SPAs. Elsewhere purchase of small wetland areas (and/or shooting rights) as refuges may be useful.

Incidental mortality due to fishing practices	Result 2.4 Enhance fishing practices to reduce incidental mortality of this and other species Potentially All states but esp. in Romania and Bulgaria	2.4.1 Introduce systems to monitor by-catch and fishing activity in relation to Ferruginous Duck feeding distribution	Medium	2028	National Government/NGOs	Progress mostly not known. In Bulgaria continued illegal net fishing at many coastal lakes with proven FD mortality and violent response to enforcement efforts.
		2.4.2 Develop fishing techniques sympathetic to the conservation of the Ferruginous Duck	Medium	2028	National Government/NGOs	Progress not known. Sport fishing causes disturbance to breeding birds and needs management.

Objective 3: Knowledge gaps filled

Problem	Result	Action	Priority	Time scale	Organisations responsible	Implementation status
Inadequate knowledge of distribution and population trends	Result 1.1 Set in place measures in all principal range states to understand population trends (All range states but esp breeding populations outside of Europe and also wintering areas)	3.1.1. Identify all key sites and document their conservation status	Essential	2023	National Governments, NGOs	Unclear progress – variable across range
		3.1.2 Monitor all key sites annually during the (Northern) winter IWC	Essential	Ongoing	National Governments, NGOs, WI	Good data gathered but still many gaps – species occurs on many small waterbodies not covered by IWC and lack of data from many wintering areas casts doubt on status – some currently impossible due to poor security. However aerial surveys in the Sahel have given vital insights into

						populations and habitat status. These should be continued ideally along with others in parts of the range that are hard to survey e.g., SW Asia
		3.1.3 Conduct national censuses during the breeding season and migration	Essential	Ongoing	National Governments, NGOs	Some progress. EBBA in Europe good and some states now plan national atlases. Turkey - large scale project to survey breeding and wintering for several ducks inc. FD, and preparation of national action plan. There is a need for a clear protocol to compare surveys in different regions
Persisting poor knowledge in key areas of the species' movements and ecology	Result 3.2 Greater understanding of the species ecology and migratory behaviour (All range states)	3.2.1. Conduct studies of migratory movements Description of action	Medium	2028	National Governments, NGOs, Research Institutions	No known progress
		3.2.2 Conduct studies to determine factors affecting survival and reproductive rates	Medium	2028	National Governments, NGOs, Research Institutions	Some studies implemented e.g., in Algeria, Morocco, Hungary, Turkey, Italy
		3.2.3 Conduct studies of habitat requirements and feeding ecology, esp. on	Low	2028	National Governments, NGOs, Research Institutions	Some studies in India - limited work in other non-breeding areas

		wintering grounds and on migration				
Poor knowledge of some key issues affecting the species' mortality	Result 3.3 Enhance knowledge of key factors that may be limiting Ferruginous Duck populations (All states but esp Eastern Europe)	3.3.1 Conduct studies on the effects of grass carp on Ferruginous Duck and its habitat	Medium	Ongoing	National Governments, NGOs, Research Institutions	No known progress <i>Attempt to assess whether carp reduce suitable aquatic vegetation at least one site where a known concern</i>
		3.3.2 Quantify the impact of bycatch mortality in fishing nets	High	2024	National Governments, NGOs, Research Institutions	No known progress. Still considered a priority esp. Turkey and SE Europe
		3.3.3 Conduct studies on the rate of exposure to lead shot and its effects	Medium	Ongoing	National Governments, NGOs, Research Institutions	No specific studies but extensive research on other species <i>Compliance studies where legislation is in place would be valuable (though a wider issue than FD)</i>
Lack of knowledge helping to prevent damaging land use changes	Result 3.4 Greater knowledge of economic and environmental costs and benefits to better inform land use decisions (All states but esp for fishponds in Eastern Europe and dams in	3.4.1 Conduct studies on the economic and environmental impacts of fishpond management on Ferruginous Duck	High	2024	National Governments, NGOs, Research Institutions	No specific studies but an active area of conservation esp in Eastern European EU States
		3.4.2 Investigate the potential environmental impacts of dam construction in some countries e.g. North Africa and Middle East	Medium	2026	National Governments, NGOs, Research Institutions	No specific studies known (unclear if this was looking at economic or environmental benefits of dams – have reworded as impacts). Some benefits e.g., first breeding in Egypt on

	Middle East and North Africa)					artificial lake 2010. Over-abstraction may be as important as dams
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Original plan made more consistent with new Action Plan format through the grouping of some activities into a revised set of results. Key proposed amendments in **Red**.

3. BIOLOGICAL ASSESSMENT

- Delineation of populations; the population remains delineated into three broad groups – western Europe/north and west Africa, Eastern Mediterranean and Sahel and the Asian population.
- Distribution throughout the annual cycle; the broad migratory pattern is well understood but still limited knowledge of movements, variation in annual movements and the origin of many wintering populations. Information from Sahel and Central Asia seems to be even less available now. Some evidence of shifts in breeding populations due to climatic changes (Zhao and Maming 2014).
- Habitat requirements; studies in a range of countries (Petkov *et al* 2003). Still need more data on exact habitat needs especially wintering range, and threats. Importance of habitat mosaics and connectivity increasingly recognised (Petkov 2012).
- Survival and productivity. Studies in a range of countries has increased understanding.

Table 3. Population size and trend by country

Principal Range State*	Breeding numbers (prs)* (first row at time of ISSAP, 2 nd row most recent data) *Notes: totals at bottom are individuals	Quality of data	Year(s) of the estimate	Breeding population trend in the last 10 years (or 3 generations) (figures for time of Plan show indicative trend only between 1995-2002)	Quality of data	Maximum size of migrating or non-breeding populations in the last 10 years (or 3 generations)	Quality of data	Year(s) of the estimate
<i>Algeria</i>	>600 ¹	Poor	1997-2002			>100 ¹	Poor	2002
	400 estimated for Lake Tonga complex in NE ⁴			Suspected decrease		1500-3500 ⁴		2015
<i>Armenia</i>	5-30	Medium ¹	1985			>500 ¹	Medium	1990-2000
	53-61 ⁵	Good	Mean 2017-2019	Overall, 53% decline 2003-2019 but fluctuating ⁵	Good			
<i>Azerbaijan</i>	1,000-3000 ¹	Medium	1996-2000			1000-9000 ¹	Poor	1996
	1-3,000 ¹⁵	Estimate	2019			1-5,000 ¹⁵	Estimate	2019

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<i>Bangladesh</i>						70,000 max ¹	Medium	2002
						10,553 (Average count 2008-21. 13,352 max. in 2019) ⁶	Good	2021
<i>Bulgaria</i>	125-225 ¹	Medium	1998-2002	Dec?		0-100 ¹	Medium	1998-2002
	120-400 ⁷	Good	2021					
<i>Chad</i>						8,530 ¹	medium	2003
						16,610 ^{12, 13}	medium	2007
<i>China</i>	?					>2,000 ¹	Poor	2003
	1,500-2,000 ⁸	Medium	2013	Increasing?		6-8,000 ⁸	Medium	2013

Principal Range State*	Breeding numbers (prs)* (first row at time of ISSAP, 2 nd row most recent data) *Notes: totals at bottom are individuals	Quality of data	Year(s) of the estimate	Breeding population trend in the last 10 years (or 3 generations) (figures for time of Plan show indicative trend only between 1995-2002)	Quality of data	Maximum size of migrating or non-breeding populations in the last 10 years (or 3 generations)	Quality of data	Year(s) of the estimate
<i>Croatia</i>	2-3,000 ¹	Medium	2004	Large Dec?		10,000 (post breeding) c100 wintering ¹	Medium	2004
	1-2,000 ²	Poor	2010	Est 30-50% decrease ²				
<i>Egypt</i>						7,500 ¹	Poor	1996
						'Several hundred', Aswan area ¹⁰	Poor	2012-15
<i>Greece</i>	130-250 ¹	Medium	2002			50-300 ¹	Medium	1987-91
	130-250 ²		2012	Est 40-70% decline 1980-2012 ²	Medium			
<i>Hungary</i>	550-1000 ¹	Medium	1997-2002					

Principal Range State*	Breeding numbers (prs)* (first row at time of ISSAP, 2 nd row most recent data) *Notes: totals at bottom are individuals	Quality of data	Year(s) of the estimate	Breeding population trend in the last 10 years (or 3 generations) (figures for time of Plan show indicative trend only between 1995-2002)	Quality of data	Maximum size of migrating or non-breeding populations in the last 10 years (or 3 generations)	Quality of data	Year(s) of the estimate
	800-1500 ²	Medium	2012	Est 60-150% decline 1980-2012 ²	Medium			
<i>India</i>						>3,000 ¹	Poor	2002
<i>Israel</i>	?					150-300	Poor	2002
	39 pairs	Good	2021	Increased since ISSAP. Was extinct in 1970s				
<i>Kazakhstan</i>	2-3,000 ¹	Poor	2002			10,000 ¹	Poor	2002
	6-7,000 ⁹	Poor	2017					
<i>Mali</i>						7,800-14,300 ¹	Medium	1991-2001
						15,066 ^{12, 13}	Medium	2007

Principal Range State*	Breeding numbers (prs)* (first row at time of ISSAP, 2 nd row most recent data) *Notes: totals at bottom are individuals	Quality of data	Year(s) of the estimate	Breeding population trend in the last 10 years (or 3 generations) (figures for time of Plan show indicative trend only between 1995-2002)	Quality of data	Maximum size of migrating or non-breeding populations in the last 10 years (or 3 generations)	Quality of data	Year(s) of the estimate
<i>Romania</i>	5,500-6,500 ¹	Poor	1996-2002	Dec?		1-4,000 ¹	Medium	1992-3
	11,761-18,018 ²	Medium	2013					
<i>Russian Federation</i>	500-1,150 ¹	Medium	1990-2000	Dec?		350-570 ¹	Medium	2002
	500-1,500 ²	Poor	2008	5-30% decline est 1980-2012	Medium			
<i>Serbia (and Montenegro)</i> <i>Serbia</i>	450-600 ¹	Medium	1998-2003	Dec?		20-50 ¹	Good	1998-2003
	680-990 ²	Medium	2012	10-29% decline est 2000-2012 ²	Medium			
<i>Sudan</i>						5,000 ¹	Poor	1990s
<i>Turkey</i>	800-1,200 ¹	Medium	2001	Dec?		1,000-1,500 ¹	Medium	2002

Principal Range State*	Breeding numbers (prs)* (first row at time of ISSAP, 2 nd row most recent data) *Notes: totals at bottom are individuals	Quality of data	Year(s) of the estimate	Breeding population trend in the last 10 years (or 3 generations) (figures for time of Plan show indicative trend only between 1995-2002)	Quality of data	Maximum size of migrating or non-breeding populations in the last 10 years (or 3 generations)	Quality of data	Year(s) of the estimate
	1,300-1,600 ¹¹	Medium	2019-20	Possible increase esp. in smaller wetlands ¹¹ (earlier estimate 10-29% decline 2000-2012 ²)				
<i>Turkmenistan</i>	>30 ¹	Poor	?			21,000 ¹	Poor	2002
<i>Ukraine</i>	300-600 ¹	Medium	1999-2000			15-20 ¹	Medium	1988
	500-1,000	Poor		25-35% decline est 2000-2012 ²	Medium			
<i>Uzbekistan</i>	>30 ¹	Medium	1997			>7,000 ¹	Poor	1992

Principal Range State*	Breeding numbers (prs)* (first row at time of ISSAP, 2 nd row most recent data) *Notes: totals at bottom are individuals	Quality of data	Year(s) of the estimate	Breeding population trend in the last 10 years (or 3 generations) (figures for time of Plan show indicative trend only between 1995-2002)	Quality of data	Maximum size of migrating or non-breeding populations in the last 10 years (or 3 generations)	Quality of data	Year(s) of the estimate
West Med/N&W Africa sub-total (Individuals)				Inc		2,800-3,000 ¹⁴	Medium	2014
E.Europe/Med/Sahelian Africa sub-total (Individuals)				Stable?		24 -61,000 ¹⁴	Medium	2019
S and SW Asia/NE Africa sub-total (Individuals)				Unclear		25-50,000 ¹⁴	Poor	2017
Rest of Asia (Individuals)		Poor				100,000	Poor	2005
Overall				Estimated 20-29% decrease over 10 years ⁹		Estimated 151,800-214,000 individuals	Poor	2017

1 – data from original ISSAP 2006 – original sources will vary

2 – BirdLife International (2015)

3 – International Waterbird Census species count totals

4 – Djelailia et al (2018)

5 - Karen Aghababyan in litt.

6 – Alam Sarowar in litt.

- 7 – Nikolay Petkov in litt.
- 8 – Zhao and MaMing (2014)
- 9 – BirdLife International Datazone (2022)
- 10 – SWM project
- 11 – Kiraz Eciyas in litt.
- 12 – ONCFS (Trolliet 2007)
- 13 – ONCFS (Trolliet 2008)
- 14 – Wetlands International WPE (2022)
- 15 – Elchin Sultanov pers.comm.

*The range of the Ferruginous Duck includes 45 breeding countries and 69 thought to hold regular wintering birds. The countries shown in this table are the principal range states which are thought to hold more than 100 breeding pairs or hold more than 5,000 birds in the winter, as well as a few countries where good data exists. Further information may highlight additional countries which have important populations

4. PROBLEM ANALYSIS

Table 4. Threat review

Threat identified in 2005 Action Plan (corresponding IUCN Code)	Identified for which population	Action Plan threat score (IUCN estimated score)	Revised threat assessment based on new evidence, if available
Habitat loss/degradation (7.2.3, 7.2.11,	All populations though varied wetland types occupied means impacts very varied	Critical (Medium 7)	Some compensation through conservation work and wetland restoration but likely to remain the major threat. e.g. considered major threat in Sahelian Africa and huge habitat loss in Bangladesh esp Hakaluki Haor. Armenia – fishponds now more intensive. Even artificial habitats may be threatened by modernisation e.g., water reservoirs in Israel.
Climate change/drought (11.2)	All populations	Critical (Medium 6)	Impacts growing but unclear. May be partly causing changes in distribution, likely impacts on wintering grounds eg C. Asia N and W. Africa, also perhaps short stopping.
Overhunting (5.1.1)	Localised but esp. Caucasus, Central Asia, Sahel and some parts of SE Europe	High (Medium 5)	No change and significant in some states – most impact in non-breeding season. Late breeding species so hunting can start when young still flightless. Large scale hunting by poisoning in Hakaluki Haor, Bangladesh. Some accidental hunting through misidentification
Lead poisoning (9.2.3)	All populations	Medium (Low 4)	Extent of threat remains unclear, but <i>Aythya</i> species are susceptible (Green and Pain 2016). In EU expected that

			exposure to lead ammunition will decline in the future as wetland restrictions are implemented.
Drowning in fishing nets (5.1.2)	Romania, Bulgaria, Turkey but likely more widely	Medium (Low 4)	Still a major problem e.g., in Bulgaria. Maybe lower threat elsewhere – best dealt with by local solutions
Pollution (9.3.1, 9.3.2)	All populations	Medium (Medium 6)	Impact poorly known but the species may be a good indicator of level of eutrophication
Competition with Invasive alien species (8.1.2)	Noted mainly in Eastern Europe	Medium (Medium 5)	Impacts still unknown, most widely fish predation of young. Invasive plants may also have impacts.
Human disturbance (6.1, 6.3)	All populations	Medium (Medium 5)	Tourism infrastructure development e.g. in Turkey. May be an issue in important wintering areas e.g. Bangladesh where much disturbance by night fishermen particularly in Tanguar Haor. Anglers may also disturb in breeding season. Domestic duck farming also disturbs wetlands greatly in Asia.
Competition with native species (8.2.1)	Possibly all populations	Unknown but unlikely to be major impact (Low 4)	

5. CONTACTS & REFERENCES

5.1. Contacts

BirdLife International: Partners in many range state countries - see [BirdLife Partners | BirdLife](#)

Wetlands International: IWC Count Coordinators - Cover many range countries see [Waterbird Census Coordinators - Wetlands International](#)

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