

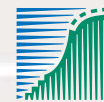
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Waterbirds around the world

A global overview of the conservation,
management and research of the
world's waterbird flyways

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Duck harvest in the Po delta, Italy

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Estimates of waterfowl hunting bags are the main research activity of the Associazione Cacciatori Migratori Acquatici (ACMA). These data are necessary for good species management, and are also a tool to provide an objective basis for public debate on hunting. The main objective is to create a monitoring scheme that allows the organisation to estimate, for each hunting season, the total bag in Italy (Sorrenti *et al.* 1999).

This short note provides the results obtained from public (ATC – Italian Hunting Association) and private (Aziende Faunistico Venatorie, AFV) shooting areas in the Po river delta, situated in the Rovigo district of the Veneto region, for the duck hunting season of 2002/03. This area is an important wintering site for many species, both at national and international level (Verza 2003, Baccetti *et al.* 2002).

The Rovigo District Administration worked with ACMA, in cooperation with the local hunting association, ATC Delta del Po, to estimate the waterfowl harvest in public shooting areas. ATC collected sheets compiled by waterfowl hunters and generalist hunters which gave the total number of hunters of each category and the total number of fixed hunting hides in the area. Rovigo District Administration provided reports of official bags from private shooting areas. A sample from the public area records were elaborated to expand the results to a wider area, using a Poisson distribution with 95% confidence interval.

The results from waterfowl hunters are provided in Table 1, and those of generalist hunters in Table 2. Table 3 reports the declared bag of the AFV. The total estimate of the duck harvest

Table 1. Estimates of bag totals of waterfowl shot by specialized waterfowl hunters 2002/03 public area.

Species	n	Total species estimates					
		95% confidence interval			95% confidence interval		
		Mean	Lower	Upper	Mean	Lower	Upper
Teal <i>Anas crecca</i>	35	27	25	29	7 679	7 198	8 183
Mallard <i>Anas platyrhynchos</i>	35	25	24	27	7 122	6 659	7 607
Wigeon <i>Anas penelope</i>	35	23	22	25	6 524	6 082	6 990
Pintail <i>Anas acuta</i>	35						
Garganey <i>Anas querquedula</i>	35	1	1	1	266	183	374
Shoveler <i>Anas clypeata</i>	35	3	2	4	840	686	1 017
Gadwall <i>Anas strepera</i>	35	6	6	7	1 801	1 572	2 053
Pochard <i>Aythya ferina</i>	35	12	11	13	3 407	3 090	3 748
Tufted Duck <i>Aythya fuligula</i>	35	3	3	4	937	774	1 123
Total	35	106	103	110	29 972	29 015	30 952

Table 2. Estimates of bag totals of waterfowl shot by generalist hunters 2002/03 public area.

Species	n	Total species estimates					
		95% confidence interval			95% confidence interval		
		Mean	Lower	Upper	Mean	Lower	Upper
Teal <i>Anas crecca</i>	16	2	1	2	675	445	982
Mallard <i>Anas platyrhynchos</i>	16	6	7	10	3 325	2 784	3 940
Wigeon <i>Anas penelope</i>	16	0	0	1	125	41	292
Pintail <i>Anas acuta</i>	16	0	0	0	0	0	92
Garganey <i>Anas querquedula</i>	16	0	0	0	0	0	92
Shoveler <i>Anas clypeata</i>	16	0	0	0	25	1	139
Gadwall <i>Anas strepera</i>	16	1	0	1	225	103	427
Pochard <i>Aythya ferina</i>	16	1	0	1	250	120	460
Tufted Duck <i>Aythya fuligula</i>	16	0	0	1	150	55	326
Total	16	12	10	14	4 775	4 122	5 502

in the Po delta is presented in Table 4 as a sum of the averages of Tables 1 and 2 and data from Table 3. However, the declared harvest of the AFV is considered an underestimation of the real numbers. A further 8 000-10 000 ducks should be added to the AFV declared bag, bringing the total duck harvest in this study area for the 2002/03 season to an estimated c. 70 000 birds. Based on the results from Table 4, the most common species of ducks shot were: Mallard *Anas platyrhynchos* (38%), Wigeon *Anas penelope* (22%), Teal *Anas crecca* (21%), Pochard *Aythya ferina* (6%) and Gadwall *Anas strepera* (3%).

Table 3. The declared waterfowl hunting bag in private shooting areas (AFV) in 2002/03.

Species	Numbers
Teal <i>Anas crecca</i>	4 667
Mallard <i>Anas platyrhynchos</i>	12 665
Wigeon <i>Anas penelope</i>	6 880
Pintail <i>Anas acuta</i>	284
Garganey <i>Anas querquedula</i>	36
Gadwall <i>Anas strepera</i>	570
Shoveler <i>Anas clypeata</i>	1 029
Pochard <i>Aythya ferina</i>	101
Tufted Duck <i>Aythya fuligula</i>	6
Total	26 238

Table 4. total waterfowl bag estimates 2002/03.

Species	Numbers
Teal <i>Anas crecca</i>	13 021
Mallard <i>Anas platyrhynchos</i>	23 112
Wigeon <i>Anas penelope</i>	13 529
Pintail <i>Anas acuta</i>	1 681
Garganey <i>Anas querquedula</i>	302
Gadwall <i>Anas strepera</i>	1 894
Shoveler <i>Anas clypeata</i>	2 596
Pochard <i>Aythya ferina</i>	3 758
Tufted Duck <i>Aythya fuligula</i>	1 093
Total	60 985

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Mallards *Anas platyrhynchos* are the most commonly hunted waterbird in Italy's Po Delta. Photo: Else Ammentorp, Danmarks Jægerforbund/Danish Hunters Association.