HANDBOOK ON OIL IMPACT ASSESSMENT

4.0 SPILL RESPONSE

4.1 Assessing the damage

Technical document

Anatidae Diving ducks, sea ducks, mergansers

Aythya ferina	(monotypic)
Aythya americana	(monotypic)
Aythya valisineria	(monotypic)
Aythya collaris	(monotypic)
Aythya nyroca	(monotypic)
Aythya fuligula	(monotypic)
Aythya marila marila	
Aythya affinis	(monotypic)
Somateria mollissima mollissima	North-west Europe from France and Britain to Novaya Zemlya
Somateria mollissima faeroeensis	Faeroes
Somateria mollissima borealis	Arctic North Atlantic south to Iceland
Somateria spectabilis	(monotypic)
Somateria fischeri	(monotypic)
Polysticta stelleri	(monotypic)
Histrionicus histrionicus	(monotypic) [includes *pacificus*]
Clangula hyemalis	(monotypic)
Melanitta nigra nigra	Eurasia east to Olenek River
Melanitta nigra americana	East Siberia and North America, vagrant WP
Melanitta perspicillata	(monotypic)
Melanitta fusca fusca	
Melanitta fusca deglandi	vagrant to Iceland
Melanitta fusca stejnegeri	vagrant to Finland
Bucephala albeola	(monotypic)
Bucephala islandica	(monotypic)
Bucephala clangula clangula	
Mergus cucullatus	(monotypic)
Mergus albellus	(monotypic) [includes *schioleri*]
Mergus serrator	(monotypic) [includes *orientalis*]
Mergus merganser merganser	

3810 Euring: 1980
Tafeleend European Pochard *Aythya ferina*

Iceland and W Europe, east through C Asia ti SE Russia, scattered populations from Turkey through S Palearctic to NE China and N Japan [NSO – VA]

3830 Euring: 2000
Ringsnaveleend Ring-necked Duck *Aythya collaris*
C Alaska and C Canada eastwards to Newfoundland, southwards to C and W USA [NSO -]

3860 Euring: 2020
Witoogeend Ferruginous Duck *Aythya nyroca*
Fragmented from W Europe eastwards to Mongolia, isolated populations from Libya eastwards to NE Pakistan [NSO -]

3880 Euring: 2030
Kuifeend Tufted Duck *Aythya fuligula*
Across N Palearctic from Iceland eastwards to Kamchatka, southwards to C Europe, N Mongolia and N Japan [NSO – VA]

3900 Euring: 2040
Toppereend Greater Scaup *Aythya marila marila*
N Eurasia from Iceland to Lena River, Siberia [NSO – A]

3920 Euring: 2050
Kleine Toppereend Lesser Scaup *Aythya affinis*
C Alaska to NW USA E to Great Laked [NSO –]

3930 Euring: 2060
Eidereend Common Eider *Somateria mollissima mollissima*
NW Europe. E to Novaya Zemlya [NSO – ZA]

3940
Faeroer Eidereend Common Eider *Somateria mollissima faeroeensis*
Faeroe Isl [NSO –]

3960
Noordelijke Eidereend Common Eider *Somateria mollissima borealis*
Arctic Atlantic from Baffin Isl – Greenland, Iceland, Franz Josefland [NSO –]
3990 Euring: 2070
Koningseider King Eider *Somateria spectabilis*
Arctic coasts, except Iceland and Scandinavia [NSO –]

4010 Euring: 2090
Stellers Eider Steller's Eider *Polysticta stelleri*
Arctic coasts of N Alaska westwards to Taymyr Peninsula, Siberia, occasionally further west to extreme N Norway [NSO –]

4020 Euring: 2110
Harlekijneend Harlequin Duck *Histrionicus histrionicus*
Lake Baikal, Siberia, eastwards to Aleutian Isl and Alaska, southwards to Colorado, USA, E Canada, Greenland, Iceland [NSO –]

4030 Euring: 2120
IJseend Long-tailed Duck *Clangula hyemalis*
Whole arctic coasts [NSO – Z]

4040 Euring: 2130
Zwarte Zee-eend Common Scoter *Melanitta nigra*
Iceland and N Britain east to River Olenek, Siberia [NSO – ZA]

4050 Euring: 2132
Amerikaanse Zwarte Zee-eend Black Scoter *Melanitta americana*
R Yana, Siberia, east to Alaska, E Canada and Newfoundland [NSO –]

4060 Euring: 2140
Brilzee-eend Surf Scoter *Melanitta perspicillata*
W Alaska through C Canada to Labrador [NSO –]

4070 Euring: 2150
Grote Zee-eend Velvet Scoter *Melanitta fusca fusca*
Scandinavia east to River Yenisey (C Siberia) [NSO – VA]

4100 Euring: 2160
Buffelkopeend Bufflehead *Bucephala albeola*
Alaska east to Hudson Ban and Great Lakes, south to NW USA [NSO –]

4120 Euring: 2180
Brilduiker Common Goldeneye *Bucephala clangula clangula*
N and C Europe, Russia and N Mongolia to Kamchatka [NSO – VA]
4140 Euring: 2190
Kokardezaagbek Hooded Merganser *Lophodytes cucullatus*
SE Alaska south to Oregon, SE Canada south to Mississippi valley [NSO –]

4150 Euring: 2200
Nonnetje Smew *Mergellus albellus*
Sweden eastwards to E Siberia [NSO – Z]

4170 Euring: 2210
Middelste Zaagbek Red-breasted Merganser *Mergus serrator*
Most of N North America, south to Great Lakes, Greenland, Iceland and most of N Eurasia, south to Britain, NE China and N Japan [NSO – VA]

4190 Euring: 2230
Grote Zaagbek Goosander *Mergus merganser merganser*
Palearctic, from Iceland east to Kamchatka, S to C Europe [NSO – VZ]

Standard observations:

Age	Adult, juvenile	Age: A – J
Plumage	Eclips, prachtPlumage	Plum: B – eclips
Sex	Man, vrouw	Plum: M – F
Colour phase		-
Biometrics	Bill tf, Bill tn, Bill base, Head, Wing, Tarsus	
References		

Basic biometrics (summarised)

Species	sex	Bill tf	Wing	Tarsus
Aythya ferina	♂	43-52	196-223	36-42
	♀	42-50	185-216	35-43
Aythya collaris	♂	44-54	194-206	
	♀	43-57	185-201	
Aythya nyroca	♂	38-43	174-196	29-35
	♀	36-40	170-185	30-34
Aythya fuligula	♂	36-44	190-215	33-39
	♀	36-42	181-205	32-38
Aythya marila marila	♂	39-48	205-237	37-43
	♀	39-45	201-225	37-43
Aythya affinis	♂		185-220	
	♀			
Somateria m mollissima	♂	50-61	275-315	52-57
	♀	48-59	265-312	50-56

Species	sex	Bill tf	Wing	Tarsus
Som. m faeroeensis	♂	48-56	260-284	
	♀	45-50	257-271	
Som. m borealis	♂	47-56	284-302	48-53
	♀	46-52	278-287	47-51
Somateria spectabilis	♂	27-34	242-295	42-50
	♀	30-35	230-291	44-48
Polysticta stelleri	♂	36-41	199-238	34-40
	♀	37-42	203-235	36-40
Histrionicus histrionicus	♂	24-30	181-214	36-41
	♀	23-30	177-201	34-39
Clangula hyemalis	♂	24-31	205-241	33-38
	♀	24-27	192-220	32-37
Melanitta nigra	♂	43-52	214-247	42-49
	♀	41-47	204-239	40-46
Melanitta americana	♂	42-45.5	213-233	45-48.5
	♀		210-230	
Melanitta perspicillata	♂	34-42	238-256	43-47
	♀	35-38	223-235	
Melanitta fusca fusca	♂	41-51	245-286	46-53
	♀	37-46	232-275	43-50
Bucephala albeola	♂	27-31	169-179	31-35
	♀	23-27	151-161	28-31
Bucephala clangula	♂	30-38	202-235	37-45
	♀	28-32	185-207	33-38
Lophodytes cucullatus	♂	38-41	193-202	29-33
	♀	34-40	184-198	29-32
Mergullus albellus	♂	27-32	188-208	31-36
	♀	25-29	171-189	29-32
Mergus serrator	♂	54-66	226-258	44-52
	♀	48-57	204-239	40-49
Mergus m. merganser	♂	52-60	263-295	49-55
	♀	44-52	242-270	44-51

Structure (summarised)

Species	Primaries	Longest Primary	Tail feathers	Tail shape
A. ferina	10 + 1r	P9 (≥P10)	14	short rounded
A. collaris	10 + 1r	P9 (≥P10)	14	short rounded
A. nyroca	10 + 1r	P9 (≥P10)	14	short rounded
A. fuligula	10 + 1r	P9/P10	14	short rounded
A. marila	10 + 1r	P9/P10	14	short rounded
A. affinis	10 + 1r			
S. mollissima	10 + 1r	P9 (≥P10)	14-16	short rounded
S. spectabilis	10 + 1r	P9	14	short rounded
P. stelleri	10 + 1r	P9 (≥P10)	14	short rounded
H. histrionicus	10 + 1r	P9 (≥P10)	14	long pointed
C. hyemalis	10 + 1r	P9/P10	14	long pointed

Species	Primaries	Longest Primary	Tail feathers	Tail shape
M. nigra	10 + 1r	ad P9, juv P9/P10	16	stiff, pointed
M. americana	10 + 1r	ad P9, juv P9/P10	16	stiff, pointed
M. perspicillata	10 + 1r	P9/P10	14	pointed
M. fusca	10 + 1r	P10 (≥P9)	14	pointed
B. albeola	10 + 1r	P9/P10	16	short rounded
B. clangula	10 + 1r	P9/P10	16	short rounded
L. cucullatus	10 + 1r	P9 (≥P10)	18	long rounded
M. albellus	10 + 1r	P9/P10	16-18	
M. serrator	10 + 1r	P9/P10	18	short rounded
M. merganser	10 + 1r	P9 (≥P10)	18	short rounded