

Observations and collections of sooty blue grouse in SE Alaska and north-coastal British Columbia. 2007 and 2008, a progress report. F. C. Zwickel (FCZ), Univ. of Alberta (retired) and M. A. Schroeder (MAS), Washington Dept of Fisheries and Wildlife

Introduction. This is a brief summary of observations of sooty (coastal) blue grouse in SE Alaska (2007) and north-coastal British Columbia (2008). MAS and FCZ worked in the Juneau area in 2007 (9-14 May): G. F. Barrowclough (GFB) and J. Lai, both of the American Museum of Natural History, and MAS, worked in the Stewart, Terrace, Kitimat, and Bella Coola areas in 2008 (14-24 May). FCZ did not take part in the field in 2008 for medical reasons. Plans to work east of Smithers in 2008 were cancelled because of time constraints and difficult access caused by heavy snow packs.

Results. Virtually all scientific literature (dating back to at least 1912) indicates that male blue grouse in SE Alaska show yellow cervical apteria (bare neck patches) when in courtship display, as in coastal males to the south. In 2006 Steve Heintz (ADFG) advised us that at least some males in SE Alaska display red, not yellow, cervical apteria.

In the Juneau area (2007) we documented, with photos and observations, red apteria in all males seen by us on the mainland (n=6) and Douglas Island (n=4). By end of that year we had in our possession, or had seen, 18 photos of SE Alaskan males in display and all but 1 had red cervical apteria (only the left apterium of an Admiralty Island bird was shown in 1 photo and it was mostly yellow, partly red). The most northern mainland records were from the Bartlett Cove area and the most southern was a report of a male with red apteria in Taku Inlet. Alexander Archipelago birds ranged from Douglas Island in the north to Gravina Island in the south.

Our principal objectives in 2008 were: 1) to collect tissue samples for DNA analysis in connection with ongoing taxonomic studies of blue grouse throughout their range, 2) to determine where cervical apteria of coastal mainland birds change from red to yellow, in a north/south sense, and 3) to document other phenotypic characteristics (nrs of rectrices, nrs of notes in songs of males, etc.) that might vary genotypically and/or geographically.

In this year 19 blue grouse were collected in north-coastal BC (Table 1) to obtain tissues for DNA analysis. Specimens are being processed in GFB's laboratory at the American Museum of Natural History. Associated skins are being prepared to document phenotypic characteristics of these birds. [DNA samples for Alaskan birds are available from earlier years]

Data in Table 1 indicate that BC males with red cervical apteria (Figs. 1-3) occur from near Stewart to the Kitimat area. Including 2007 observations, such birds are found on the mainland from the Bartlett Cove area in SE Alaska to near Kitimat. We photographed and/or made direct observations of 26 displaying males from the Juneau to Kitimat areas in 2007 and 2008 and all had red apteria. We also have in our possession, or have seen, 9 such photos taken by others in the same regions. The only exception is the

photo noted above of a male with a mostly yellow, part red, apterium, which may be an anomaly.

In 2008 we found 4 males with yellow apteria (Fig. 4) near Bella Coola (~225 km SE of Kitimat), as in birds further south. The transition from red to yellow likely occurs somewhere between Kitimat and Bella Coola but exactly where is unknown. The most northerly males with yellow apteria of which we are aware are on Graham Island (Haida Gwaii, BC). No local populations containing males with red and yellow "individuals" have been seen.

We combined data from both years to examine other phenotypic characteristics for birds from Kitimat north (birds with red apteria). Coastal blue grouse most commonly have 18 rectrices, northern interior birds 20. Seventy-nine percent of 19 birds for which we have rectrice counts from this area had 18, or fewer. Most coastal blue grouse have well defined light grey tail bands; those of northern interior birds are indistinct or absent. Tails of all males (n=31) and females (n=4) seen clearly by us had light gray tail bands. Males in undisturbed coast forest usually sing from trees, interior birds from the ground. Ninety-four percent of 31 males we found were in trees. Songs of coastal males are usually loud and contain 6 or 7 notes, those of interior males are usually soft, most often with 5 notes. Among 24 males for which we counted notes, 20 (83%) sang only, or mostly, loud, 6 or 7 note songs. These phenotypic characteristics are all consistent with expectations for coastal birds. The sole exception is that birds from the Kitimat area north show red apteria during display, as do northern interior blue grouse.

A number of people provided us with information on where to locate birds and this was very helpful. Thank you ail. All photos are by MAS.

Copies to:

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Area	ID Nr	DNA Nr	Sex	Age	Date	Time	UTM-E	UTM-N	Elev	Apteria	Tail band	Notes	Rectr	Location	Behaviour and response to recording
Stewart	S01	JEL151	M	Ad	20080519	1710	445796	6212087	3150	Red	Light grey	6 (7)	20	Hemlock	Hooting; flew toward us in response
Stewart	S02	JEL152	M	Ad	20080519	1851	445180	6211923	2950	Red	Light grey	6 (7)	18	Hemlock	Hooting; landed on loud wing
Stewart	S03	JEL153	M	Ad	20080520	1155	445882	6211959	3200	Red	Light grey	6	20	Hemlock	Hooting; faster hooting in response
Stewart	S04	JEL154	M	Ad	20080520	1244	446077	6212369	3250	Red	Light grey	6(5)	20	Hemlock	Hooting; landed on loud wing
Stewart	S05	JEL155	M	Ad	20080520	1325	446079	6212564	3350	Red	Light grey	6	19	Hemlock	Hooting; landed on loud wing
Stewart	0	0	F	?	20080519	1741	445862	6212291	3150	?	?	?	?	Hemlock	Cackle response
Stewart	0	0	M	?	20080520	1440	446149	6212072	3410	Red	Light grey	5(6)	?	Hemlock	Hooting; landed on loud wing
Terrace	TS01	JEL144	M	Ad	20080514	1014	554985	6004258	1800	Red/orange	Light grey	6	17	Hemlock	Hooting; faster hooting in response
Terrace	TS02	JEL143	M	Ad	20080514	1230	556044	6003549	1620	Red/orange	Light grey	7 (6)	18	Hemlock	Hooting; landed on loud wing
Terrace	TS03	JEL142	M	Ad	20080514	1440	556324	6004314	1900	Red/orange	Light grey	6	17	Sitka spruce	Hooting; landed on loud wing
Terrace	TS04	JEL141	M	Ad	20080514	1645	555258	6004603	1900	?	Light grey	7 (6)	?	Hemlock	Hooting; faster hooting in response
Terrace	TS05	JEL145	M	Ad	20080516	1125	539625	6011848	1640	?	Light grey	6	18	Lodgepole	Landing on loud wing in response to tape
Terrace	TS06	JEL146	M	Ad	20080517	855	541048	6042970	2810	?	Light grey	6	?	Hemlock	Hooting; with 2 females in area
Terrace	TS07	JEL147	F	Ad	20080517	905	541025	6042953	2590	?	?	?	16	Ground	Cackle; with 1 male & 1 female
Terrace	TS08	JEL148	F	Ad	20080517	935	540940	6042980	2590	?	?	?	18	Hemlock	Cackle; with 1 male & 1 female
Terrace	TS09	JEL149	M	Ad	20080517	1115	540922	6043248	2900	Red	Light grey	6	18	Ground	Hooting; approached us in response
Terrace	TS10	JEL150	M	Ad	20080518	837	539328	6030462	2770	Red	Light grey	6 (5)	18	Hemlock	Hooting; landed on loud wing
Terrace	0	0	M	?	20080514	1300	556199	6003609	1760	?	Light grey	6	?	Hemlock	Hooting
Terrace	0	0	M	?	20080514	1630	555218	6004564	1860	?	Light grey	6 (7)	?	Hemlock	Hooting; landing on loud wing
Terrace	0	0	M	?	20080515	1505	540795	6042337	2630	Red	Light grey	6(5)	18	Hemlock	Hooting; landed on ground
Terrace	0	0	M	?	20080515	1650	545489	6038904	2220	Red/orange	Light grey	6	?	Lodgepole	Hooting; landed on ground
Terrace	0	0	F	?	20080517	957	540926	6043162	2800	?	?	?	?	Ground	Flushed off ground; no response
Terrace	0	0	M	?	20080517	1755	539328	6030492	2760	Red	Light grey	5	?	Ground	Hooting; landed on loud wing
Terrace	0	0	M	?	20080518	1630	502944	6037102	2300	Red	Light grey	6(5)	?	Hemlock	Hooting; landed on loud wing
Bella Coola	BC01	JEL156	F	Ad	20080524	855	683493	5790695	3010	?	?	?	18	Ground	Flushed on road edge; no response
Bella Coola	BC02	JEL158	M	Ad	20080524	1020	683420	5790400	3400	Yellow	Light grey	6 (7)	18	Hemlock	Hooting; slight response
Bella Coola	BC03	JEL159	M	Ad	20080524	1111	683410	5790350	3450	Yellow	Light grey	6 (7)	17	Hemlock	Hooting; slight response
Bella Coola	BC04	JEL157	M	Ad	20080524	1147	683480	5790310	3650	Yellow	Light grey	6 (7)	18	Hemlock	Hooting; flew to ground and did flutter jump
Bella Coola	0	0	M	?	20080524	1234	683480	5790400	3350	Yellow	Light grey	6 (7)	?	Hemlock	Hooting; slight response

- Notes:
1. Birds with ID Nrs were collected, those without were merely observed.
  2. Terrace includes the Kitimat area.
  3. All UTM coordinates are in Zone 9 (NAD 27).
  4. Elevations are in meters.
  5. Red/orange = may be reddish orange, not clear. Considered as red in text.
  6. Notes refers to number of notes per song. In cases of 2 numbers, the first was most often given.
  7. Locations is where bird first found.
  8. Response refers to reaction of bird to playback of a recorded cackle call of a female.

Table 1. Blue grouse observed and/or collected in north-coastal British Columbia, 14-24 May 2008.



**Fig. 1. Male, 18 May 1639 hr, Terrace area, had red apteria and a grey tail band.**



**Fig. 2. Male, 15 May 1505 hr, Terrace area, had red apteria and a grey tail band.**



**Fig. 3. Male, 15 May 1650 hr, Terrace area, with apteria classified as red or orange and a grey tail band.**



**Fig. 4. Male, 24 May 1147 hr, Bella Coola area, clearly had yellow apteria and a grey tail band. One apterium immediately after collection is shown in better light in lower left corner.**

**All photos by M. A. Schroeder.**