

Surveys of Mount Pinos Blue Grouse in Kern County, California Spring, 2002

Final Report
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Surveys were conducted for Mount Pinos blue grouse (*Dendragapus obscurus howardi*) throughout Kern County and adjoining areas of Tulare and Ventura Counties. The surveys encompassed a period of 14 days and covered an estimated 83 miles (133 km). Survey sites included areas of Bear Mountain (15-16 April), the Tehachapi Mountains (17-18 April and 18 May), the Piute Mountains (19-20 April), the Greenhorn Mountains (21-24 April), Breckenridge Mountain (25 April), and the Mount Pinos area (25-26 April and 4 May). These mountains form an archipelago of montane habitats that stretches across Kern County from the main axis of the Sierra Nevada Mountains to Ventura County in the west. Most of these islands were occupied by blue grouse in the early 1900s, but there have been no conclusive sightings over the past 30 to 60 years.

The surveys focused on territorial males during peak hooting season. At this time of year, males occupy mature, open, mixed-conifer forest. The survey method was to proceed through potential habitat and broadcast recorded female vocalizations at intervals of several hundred feet. The validity of this technique is well established (I. Stirling, 1966, *J. Wildl. Manage.* 30:184-187). While it is very effective for determining the presence of male blue grouse, it provides little insight into habitat occupancy in other seasons, or habitat occupancy by female or immature blue grouse.

Existing roads and trails frequently provided access only to the upper elevations of mixed-conifer forest, so some survey routes were biased toward higher elevations (~7,200 - 7,800 ft.). In many locations this would not have been a problem because hooting grouse, where encountered, were audible for distances from 600 to 2,500 ft. Nonetheless, in areas where the mixed-conifer belt extends over a wide range of elevation (e.g., Breckenridge Mountain, the Piute Mountains), additional surveys should be conducted at lower elevations. Strong winds encountered on Bear Mountain and Tehachapi Peak may also have adversely affected survey results at those locations. High winds can greatly reduce the audible range of blue grouse vocalizations.

Blue grouse were encountered at only one location: Sunday Peak in the Greenhorn Mountains. The eight territorial males encountered there occupied mature mixed-conifer forest between 7,200 and 7,700 ft elevation. Three males located on the northwest-facing slope of the mountain were hooting from massive fir and pine trees growing from a rocky spur at the edge of a dense fir stand. The understory of the fir stand was well-shaded and still covered with patches of snow. A second group of 3 males was hooting from massive pine and fir trees in open mixed-conifer forest on the southwest-facing slope of the mountain. Here, the understory was dominated by patches of chinquapin. The last two hooting males occupied dry, open, forest on the east-facing slopes of the mountain. The open canopy at this site was partly due to past timber harvest and fire. At all three locations the birds were perched 60 to 80 ft high in massive (> 4 ft diameter)

fir and pine trees. There was also a general abundance of large dead-and-down wood on the ground. Piles of fecal droppings indicated the birds had also spent the winter in these areas.

It is noteworthy that Mount Pinos blue grouse persist on Sunday Peak, a southern extension of the Sierra Nevada “mainland,” but appear to be lacking from the habitat islands further south. Sunday Peak is probably the largest remaining patch of old-growth mixed-conifer forest left in Kern County. Prior studies have also shown that male Mount Pinos blue grouse are associated with the massive trees, patchy tree canopy, and dead-and-down wood of old-growth forests (J. Bland, 1997, *Wildlife Biology* 3:270). At the other sites visited during the present survey, old-growth forest had largely been reduced to small remnants in steep gullies. Huge areas of forest lost to forest fires had been replanted as pine plantations. Where the original forest remained, the largest trees had been selectively harvested decades ago, and a second wave of selective harvest was underway. It is very likely that grouse habitats on the montane islands of Kern County have always been marginal. They may have supported only a few grouse, possibly only during “boom” years. Compared to areas where Mount Pinos blue grouse persist today, the forests on these islands are dry, fir patches are uncommon, and potential brood-rearing meadows are few.

Several other potential threats to blue grouse were noted during these surveys. The impact of motorcycle and ATV use was quite apparent on Forest Service lands. These vehicles are frequently operated off-road, and enable access to high elevation areas weeks in advance of the usual camping season. The quiet solitude that used to accompany blue grouse courtship rituals is gone. Another area of concern is the condition of potential brood-rearing meadows. Most meadows visited during these surveys were visibly degraded. Of course, there were the usual signs of livestock grazing. But many of the larger meadows had also been developed into campgrounds. The hustle and bustle of a campground in midsummer may not be compatible with the demands of brood-rearing. Lastly, the outlook for Mount Pinos blue grouse on privately-owned lands is not good. Large swaths of private land in the Tehachapi Mountains have been harvested and converted into pine plantations. Elsewhere, cabins are being built deep in the forest and owners are selectively harvesting the large trees from their parcels. The Tehachapi Mountains probably used to serve as a corridor for grouse to disperse westward from the Sierra Nevada “mainland” toward Mount Pinos. Without viable grouse habitat in the Tehachapis, it is possible that blue grouse will never return to Mount Pinos. The last significant patch of fir-dominated old-growth forest in the Tehachapi Mountains lies within Tehachapi Mountain County Park. Eastward and westward expansions of this park could be crucial for reestablishing blue grouse in the Tehachapi Mountains and beyond.

Data Summary:

Bear Mountain: 15 - 16 April (2 days)						
Dates Surveyed	Areas Surveyed	Roads Surveyed	Distance Surveyed *	Hours Surveyed *	No. of Grouse	Habitat Conditions
15 Apr 02	South slopes	Private	2.0 mi (3.2 km)	2.75 (07:00-09:45)	0	Fir stands in gullies on north and northeast slopes, harvested. Massive pines and firs rare (except on peak). Sugar pines rare. Dead-and-down wood, rock outcrops, present locally. Shrub understory only locally, esp. currant. Past logging selective. No public access, hunted by friends of owners. Area of potential hooting habitat very limited.
16 Apr 02	Upper north slopes, peak	Private	2.5 mi (4.0 km)	2.50 (15:20-17:50)	0	
Area subtotals:			4.5 mi (7.2 km)	5.25 hrs	0	

Tehachapi Mountains: 17 - 18 April, 18 May (3 days)						
Dates Surveyed	Areas Surveyed	Roads Surveyed	Distance Surveyed *	Hours Surveyed *	No. of Grouse	Habitat Conditions
17 Apr 02	Tehachapi Mtn Park (Kern Co.), Tehachapi Pk	Campground road, Tehachapi Pk foot trail	6.0 mi (9.6 km)	7.00 (06:40-13:40)	0	Mid-elevations: fir stands in gullies on north-facing slopes, understory generally open and dry, massive pines, firs, and sugar pines occasional within park. Upper elevations: open-canopy pine plantation. Few firs. Selectively-harvested, historical as well as current. Understory open and dry. North slopes of Double Mtn (south of Tehachapi) appears to be entirely dry pine forest. Best potential hooting habitat occurs in upper Tehachapi Mtn Co. Park and upper rim of Paradise Valley (private, currently being harvested).
18 Apr 02	Tehachapi Mtn Park (Kern Co.), Tehachapi Pk	Campground roads, Tehachapi Pk and ridge trail	7.0 mi (11.2 km)	7.00 (06:40-13:40)	0	
18 May 02	Cummings Mountain	Private	5.0 mi (8.0 km)	4.00 (06:00-10:00)	0	
Area subtotals:			18.0 mi (28.8 km)	18.00 hrs	0	

* Distance and hour figures are preliminary estimates.

Piute Mountains: 19 - 20 April (2 days)						
Dates Surveyed	Areas Surveyed	Roads Surveyed	Distance Surveyed *	Hours Surveyed *	No. of Grouse	Habitat Conditions
19 Apr 02	French Gulch Ridge/Lookout	USFS 28S17	5.5 mi (8.8 km)	8.00 (07:10-15:10)	0	Open pine forest with patches of fir and black oak. Harvested, heavily in areas. Patchy understory of currant, chinquapin, whitethorn, and snowberry. Best potential hooting habitat north and northwest of old lookout.
19 Apr 02	Saddle Springs Ridge	USFS 27S02	3.5 mi (5.6 km)	1.00 (15:50-16:50)	0	Mature fir forest but heavily harvested, especially near top of ridge. Remaining large firs occur in small patches. Occasional Sugar pine and black oak. Many areas nearly clearcut. Patchy understory of currant and whitethorn.
20 Apr 02	King Solomons Ridge	USFS 28S18 USFS 28S47 USFS 28S44	3.5 mi (5.6 km)	4.00 (08:30-12:30)	0	Large areas of unharvested mixed-conifer forest, including sugar pine. Large burn on northwest slope of Brown Peak. Best potential hooting habitat in deep north-tending gullies.
Area subtotals:			12.5 mi (20.0 km)	13.0 hrs	0	

* Distance and hour figures are preliminary estimates.

Greenhorn Mountains: 21 - 24 April (4 days)						
Dates Surveyed	Areas Surveyed	Roads Surveyed	Distance Surveyed *	Hours Surveyed *	No. of Grouse	Habitat Conditions
21 Apr 02	Woodward Pk/ Evans Flat	Campground Rd	2.0 mi (3.2 km)	2.50 (07:15-09:30)	0	West slopes of Woodward Pk harvested. Patchy harvest elsewhere. Occasional mature fir, sugar pine, and black oak. Understory of currant. Dense cedar thickets. Potential brooding meadow near Evans Flat campground currently used for cattle grazing, quail hunting, and off-road vehicles.
21 Apr 02	So. Rancheria Road	USFS 25S15 from Sawmill Rd to Cooks Pk	8.0 mi (12.8 km)	6.25 (10:30-12:45, 15:00-19:00)	0	West-facing slopes: burned and replanted as a pine plantation. East-facing slopes: harvested mixed-conifer with mature fir in gullies near top of main ridge. Best potential hooting habitat south and north slopes of Shirley and Cooks Pks. Marked for thinning. Includes massive firs and pines, dead and down, patchy currant and chinquapin understory.
22 Apr 02	Upper Alder Creek	USFS 26S07	2.3 mi (3.7 km)	2.00 (08:00-10:00)	0	South-facing slope: pine plantation (burn) below road, mature mixed-conifer above up to crest. West-facing slope: plantation nearly to crest, narrow strips of remnant mixed-conifer on crests of spurs.
22 Apr 02	Shirley Meadows	Borrow pit road	0.5 mi (0.8 km)	1.00 (11:15-12:15)	0	Mature mixed-conifer, including large sugar pines and cedars. Harvested. Patchy understory of currant and chinquapin.

Greenhorn Mountains (continued)						
Dates Surveyed	Areas Surveyed	Roads Surveyed	Distance Surveyed *	Hours Surveyed *	No. of Grouse	Habitat Conditions
22 Apr 02	Main Ridge between Shirley Pk and Greenhorn Summit	USFS 25S17	5.5 mi (8.8 km)	3.50 (14:00-17:30)	0	West-facing slopes: open, mature, mixed-conifer and oak. Occasional massive pines and firs. Selectively harvested, fir occasionally returning as thickets. Marked for thinning at southern end. Grassy understory, lots of dead-and-down wood. Occasional pine plantation. East-facing slopes: mature mixed-conifer, selectively harvested. Abundant fir, open understory, lots of dead-and-down wood. Converted to pine plantation at upper elevations. Best potential hooting habitat within west-and east-facing gullies.
23 Apr 02	Black Mtn	USFS 23S16 and 25S16 from Greenhorn Summit to Black Mtn	7.0 mi (11.2 km)	2.75 (10:00-12:45)	0	Mature mixed-conifer on west-facing slopes of 23S16. North-facing slopes above 25S16 harvested, marked for thinning. Upper elevations in pine plantation. Huge burn downslope and north of 25S16, replanted with small pines. Dry mixed-conifer on south-facing slopes south of Black Mtn Saddle. Upper north-facing slopes of Black Mtn dry and open.
24 Apr 02	Sunday Peak	Sunday Peak trail, cross-country	7.0 mi (11.2 km)	8.00 (07:30-15:30)	8	Mature mixed-conifer. Frequent massive firs and sugar pines on northwest slopes, massive pines and cedars on southeast slopes. Patchy understory of chinquapin, whitethorn, and chokecherry.
Area subtotals:			32.3 mi (51.7 km)	26.00 hrs	8	Occasional rock outcrops. Historical timber harvest light, near scout camp. Patchy burns on southern slopes. Excellent brood-rearing meadows, esp. near scout camp.







* Distance and hour figures are preliminary estimates.

Breckenridge Mountain: 25April (1 day)						
Dates Surveyed	Areas Surveyed	Roads Surveyed	Distance Surveyed *	Hours Surveyed *	No. of Grouse	Habitat Conditions
25 Apr 02	Breckenridge Lookout	cross-country	3.0 mi / 4.8 km	5.00 (08:15-13:15)	0	Open mature mixed-conifer. Firs and pines frequently large, occasionally massive. Selectively harvested, heavily on some northeast slopes. Frequent rock outcrops and dead-and-down wood. Sparse shrub component of chinquapin, currant, and elderberry on west and southwest slopes. Dense chokecherry thickets on northwest slopes. Burn history, patchy on western slopes, extensive on south and southwestern slopes. Some burns replanted with pine. Signs of cattle grazing. Best potential hooting habitat on northeast-facing slopes.
Area subtotals:			3.0 mi (4.8 km)	5.00 hrs	0	

* Distance and hour figures are preliminary estimates.

Mount Pinos: 25-26 April, 04 May (3 days)						
Dates Surveyed	Areas Surveyed	Roads Surveyed	Distance Surveyed *	Hours Surveyed *	No. of Grouse	Habitat Conditions
25 Apr 02	Frazier Mtn	USFS 8N42	1.0 mi (1.6 km)	0.50 (18:15-18:45)	0	Mostly maturing pine plantation. Occasional small patches of old-growth pine. Mature firs rare, within gullies. Understory dry; big sage, snowberry. Best potential hooting habitat on north-facing slopes within Kern Co.
26 Apr 02	Frazier Mtn	USFS 8N24	1.0 mi (1.6 km)	2.00 (07:45-09:45)	0	
04 May 02	Mt Pinos to Grouse Mtn.	USFS 9N24, Ridge trail: 21W03	10.0 mi (16.0 km)	8.00 (07:25-15:25)	0	Mature mixed-conifer. Large trees common, massive individuals less common. South- and east-facing slopes: open, dry, old-growth pine forest. North-facing slopes: old-growth fir and mixed-conifer with sparse understory of currant and snowberry. Dense fir thickets in some north-facing gullies. Crests of major peaks covered with rabbitbrush. Best potential hooting habitat on northwest-facing slopes, especially around Grouse Mtn. Potential brood-rearing meadows are now campgrounds.
04 May 02	East slope of Mt. Pinos	Mt. Pinos Hwy (USFS 9N24), Mt Pinos Camp to McGill Camp	1.0 mi (1.6 km)	0.50 (16:00-16:30)	0	Mature mixed conifer. Large firs and pines common on north-east facing slopes. Abundant dead-and-down wood. Patchy currant undersotry.
04 May 02	Tacuya Mtn					Not accessible by road
Area subtotals:			13.0 mi (20.8 km)	11.0 hrs	0	

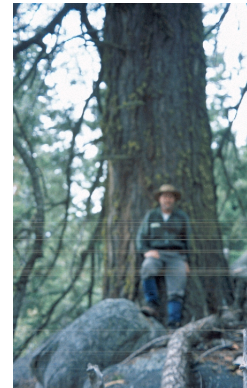
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<p>Occupied male territory, northwest exposure (moist), Sunday Peak.</p>	<p>Understory of site at left (moist).</p>
	
<p>Trees occupied by hooting male, east exposure (dry), Sunday Peak.</p>	<p>Understory of site at left (dry).</p>
	
<p>Pine plantation in former mixed-conifer forest, Piute Mountains.</p>	<p>Pine plantation replacing burned mixed-conifer forest, crest of Greenhorn Mountains.</p>
	

Young pine plantation replacing harvested mixed-conifer forest, Breckenridge Mtn.



Massive tree occupied by hooting male grouse, Sunday Peak.



Logging deck and pine plantation on crest of Tehachapi Mountains.



Logged area near Tehachapi Peak, with stumps from original and ongoing harvests



Kern County's montane archipelago, looking south from Sunday Peak.



Likely former brood-rearing meadow, now a campground, Breckenridge Mtn.

