2011-12 NEVADA CHUKAR HUNTING FORECAST

How NDOW Surveys Chukar

The Nevada Department of Wildlife (NDOW) began to experiment with chukar density survey techniques in 1975. Since then, the technique has undergone some modifications to a point where the surveys can be considered consistent since 1986. A total of 13 transects have been surveyed since then. Simple statistical analyses show that biologists usually observe about 1/3 of a population in any given survey plot. Additionally, the reliability of a count is estimated to be about 70%. This means that if a biologist counts 100 birds per square mile in a study area, the actual number of birds would likely be between 210 and 390 birds, 95% of the time.

For the fourth consecutive year, the Nevada Chukar Foundation (NCF) has provided funding for conducting these surveys through contracted helicopter services. NCF and other sportsmen's groups continue to be an integral part of establishing water developments, implementing habitat improvement projects and assisting with survey efforts for many of Nevada's upland game species. Chukar density surveys are not utilized for management recommendations and are primarily for public information.

Chukar Biology

Food

During the early fall months of September and October, chukar primarily consume the seeds of cheatgrass, rough fiddleneck and filaree. The rootstocks and shoots of Sandberg bluegrass and the fruits of black nightshade can also be found to a lesser degree when available (Christensen 1970). As the season transitions into winter, fall rains and early winter snowstorms create new growth of grass species that are readily taken by chukars. This is a time of year when chukar disperse away from water and may be concentrated on north facing slopes to take advantage of the ample "green up".

Reproduction

Pairing usually begins in mid-March; however, there is a considerable amount of variance in the timing of this event. Once a pair bond forms, a nesting territory is developed in which the male can be fairly aggressive at defending. Once egg laying and incubation is initiated, it is largely unknown what role the male plays. In Nevada, it appears that the building of a nest and egg laying usually commences in April and the hatch occurs in late May and June (Christensen 1970). However, chukar are persistent re-nesters and nesting can occur through July if conditions are favorable. Chukar will re-nest after the initial nest is destroyed or if the brood is lost entirely at an early date; however, there is little literature available on the subject. As the nesting season progresses, the female faces some physiological challenges in producing a large brood when re-nesting because ovary regression is occurring. If the female is able to raise a brood of even one chick, it is felt that re-nesting does not take place; however, this has not been thoroughly studied. Mackie and Buechner (1963) felt that re-nesting would seem unlikely after the final stages of incubation or a few days after hatching.

For more information on chukar, please see "The Chukar Partridge" by Glen Christensen (1970) available on the NDOW website at http://www.ndow.org/hunt/resources/ or "Chukar" *in* The Birds of North America, Number 258 (1996).

2011 Survey Results

Please consider the following when interpreting the data provided below: 1) the number of birds observed in a particular study plot is not directly comparable to the number of birds observed in another plot as some areas seem to have extremely high local densities while other areas show much lower densities depending on habitat conditions and any landscape changes (e.g. wildfire), 2) weather conditions during the survey can alter bird behavior and detection (i.e., in very hot and dry conditions, birds may be reluctant to leave the confines of a riparian area or shade and some may simply run or take cover rather than flush). Look for annual changes in individual study plots and compare those numbers to your own field experience in that general area.

NDOW biologists conducted surveys on all 13 long-term study plots from August 22nd through 24th, 2011. Weather conditions were considered good across all transects. Excellent fall precipitation and a strong winter with above average precipitation receipts, resulted in some of the best habitat conditions observed in a decade. The number of birds observed per square mile was higher than the long term average for 11 of 13 transects with 5 transects showing record numbers of birds. Strong population recoveries were noted in both Pershing and Lander Counties.

2011-12 CHUKAR HUNTING

The annual life history cycle from fall through summer is evaluated to determine the prognosis for the upcoming chukar season. October of 2010 was one of the wettest on record and provided upland game populations with ample amounts of forage that, in turn, improved overall body condition. This allowed most upland game populations to thrive during the winter months, experiencing mild mortality. Winter precipitation was favorable throughout most of the chukar range in Nevada; however, late season storms with cold temperatures and high winds could have negatively impacted early production in the extreme northern portions of the State. During the summer months and as of this writing, no major wildfires have been experienced in Nevada that would further degrade chukar habitat. This is extremely important for lower elevation areas that, following fire, typically transition into a cheatgrass monoculture. A healthy shrub component in the lower elevation foothills is necessary for cover, and sometimes forage, during the winter months.

The 2011-12 chukar hunting season is expected to be good to excellent for much of Nevada. Most areas will provide hunters with more and larger coveys this season with some areas being exceptional. Chukar hunting opportunities within Humboldt County, which experiences the most use in terms of hunter days, will be mostly average with the exception of the Jackson Mountains, which has fortunately shown improved numbers of birds. Hunters that focus here and on the following areas will likely be rewarded with improved hunting opportunities. The outlook for Pershing County is exciting with record high densities of birds observed in the Sonoma and Selenite Ranges as well as the Lava Beds. The central portion of Nevada including Churchill, northern Nye, and southern Lander and Eureka Counties are expected to provide good to excellent opportunities for chukar enthusiasts this season as well. Portions of Washoe County continue to harbor above average bird numbers; however, as the season progresses and birds move away from water sources, hunting here will likely be similar to last season.

Per the survey data, less attention may be warranted within the Santa Rosa Range; however, habitat is in such good condition and the availability of water is in such large quantity relatively, that birds could be dispersed over a much larger area. The same could be said for the Pine Forest Range in north central Humboldt County where results were comparable to last year. However, we continue to urge hunters to seek out alternatives to the Pine Forest Range because of the high density of chukar hunters that frequent this mountain range, especially during the early season.

Chukar Density Survey Study Plots

Birds Observed per Square Mile

Year	Double H	Santa Rosa	Pine Forest	Jacksons	Sonoma	Lava Beds	Selenite	Buffalo	Granites	Argenta	Izzenhood	Rock Creek	Sheep Creek	Overall Average
86	28	30	68		25	39	18	43	92	23		49		*42*
87	53	54	59	101	24	37	22	40	37	49		74		*50*
88	85	23	83	123	46	56	32	40	21	61		51		*56*
89	61	63	82	143	63	43	36	57	31	95		127		*73*
90	62	76	57	168	64	47	8	35	17	69		115		*65*
91	23	51	59	134	3	26	7	46	23	33		56		*42*
92	26	40	90	76	2	14	7	41	41	25		36		*36*
93	6	6	51	42	7	16	6	4	0	20	23	27	17	*17*
94	21	13	80	66	18	37	11	22	6	20	23	86	28	*33*
95	32	17	41	55	19	57	11	23	9	62	16	68	29	*34*
96	18	20	61	54	34	52	5	62	32	26	15	97	18	*38*
97	32	11		109						26	11	54	42	*41*
98	18	45	44	140	37	61	11	31	53	46	13	39	58	*46*
99	77	102	59	258	125	125	25	67	51	48	6	74	112	*87*
00	39	59	81	156	49	44	17	46	41	37	11	92	53	*56*
01	81	85	130	109	31	41	31	32	100	35	23	56	58	*62*
08	32	61	61	15	112	60	33	70	49	9	25	39	3	*44*
09	49	41	195	82	104	70	21	58	35	28	32	21	7	*57*
10	62	87	109	56	66	46	31	76	66	40	37	46	17	*57*
2011	**59**	**37**	**108**	**130**	**167**	**129**	**103**	**77**	**54**	**62**	**59**	**48**	**37**	***82***
Min	*6*	*3*	*40*	*15*	*2*	*14*	*5*	*4*	*0*	*9*	*6*	*21*	*3*	*9*
Max	*105*	*102*	*195*	*258*	*167*	*129*	*103*	*77*	*100*	*95*	*59*	*127*	*112*	*87*
Avg	*43*	*39*	*78*	*106*	*52*	*53*	*23*	*46*	*37*	*41*	*23*	*63*	*37*	*49*