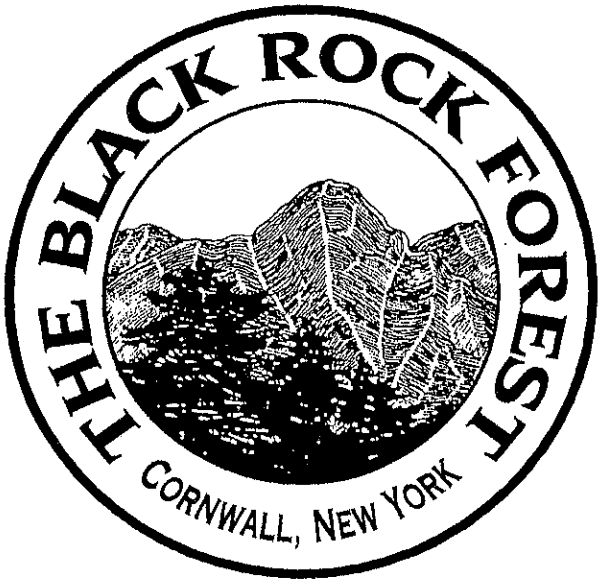


BLACK ROCK FOREST

1997

DEER HARVEST REPORT

JOHN F. BRADY
FOREST MANAGER

DEER HARVEST REPORT
THE BLACK ROCK FOREST
1997

THE SEASON November 17 to December 9

The start of 1997 deer season was influenced by a snow event occurring November 14. Three to five inches of wet snow caused very icy conditions on forest roads restricting two wheel drive access by hunters. Snowcover remained throughout the forest for 13 of the 23 day season, certainly aiding hunters. Club members maintained their long history of accident - free hunting seasons. 164 hunters visited the forest 515 times. Approximately one out of five hunters harvested a buck and one out of every three bucks was six points or better. Fifty-two (52) hunters possessed D.M.U. 54 permits harvesting 16 antlerless deer, a 30% success rate. Combined, 28% of all hunters harvested a deer

SEASON HUNTING PRESSURE AND SUCCESS RATE

			DMU#54		VISITS	SUCCESS RATE		
YEAR	PERMITS	HUNTERS	PERMITS	VISITS	PER HUNTER	BUCKS	DMU	TOTAL
1991	703	208				24%		36%
1992	503	227		759	3.4	15%		29%
1993	395	186	90	577	3.1	12%	13%	18%
1994	434	198	110	619	3.1	8%	20%	19%
1995	351	190	86	543	2.8	7%	13%	13%
1996	275	153	72	384	2.5	16%	0%	16%
1997	369	164	52	515	3.1	18%	30%	28%

THE DEER

The harvest produced 46 kills, 33 bucks (31 rifle, 2 bow) and 13 does.

Bucks (33)

Fawns - Three (3) button bucks were taken on Deer Management Unit 54 Permits (D.M.U. 54) Two six month old and a five month old averaged a weight of 53 lbs.

Yearlings (16) - Of the 30 adult bucks (1 1/2 years and older) taken, 16 were yearlings, a 53% yearling male frequency. This percentage of yearlings in the take is notably lower than the 12 year range of 56-82%. Physical measurements displayed 50% of yearling bucks were spikes (2 points). Yearling antler beam diameters (YABD) averaged 15.5 mm, an increase from the 14.8 mm in 1996. Dressed body weights averaged 87 lbs. were within the previous 12 yr range of means, 80 - 94 lbs.

Mature Adults (14) - Those bucks 2 1/2 years and older comprised 47% of the adult buck take. This frequency of mature bucks is the second highest occurrence in the past twelve years. The greatest percentage being 1994 (56%), range 18-56%. Ranging from 80 - 140 lbs dressed, mature adults averaged 112 lbs. 2 1/2 years old in fall of 1997 were fawns during the winter of 1995-96. Initial body development may have been effected by the severity of that winter, causing the extreme range in body weights in that age class. Antler growth was quite productive, 11 of the 14 mature adults sported 6 points or better. Average beam diameters were consistent with previous harvest.

MALES(BUCKS)

		ANTER BEAM DIAMETER (mm)			WEIGHT (lbs)			ANTLER POINT CLASS							SUB
YEARS	TOTAL	1997	RANGE	*1996*	1997	RANGE	*1996*	Spike	3	4	5	6	7	8	LEGAL
Fawn	3				53	(50-56)	*NA*								
1.5	16	15.5	(11-19)	*14.8*	87	(76-94)	*88*	8	3	3	1	0	0	0	0
2.5	11	21.4	(14-27)	*21.5*	109	(80-132)	*119*	2	0	1	1	3	2	3	0
3.5-4.5	3	27.7	(22-31)	*26*	123	(112-140)	*138*	0	0	0	0	1	0	2	0
Totals	33							10	3	4	2	4	2	5	0

ADULT MALE HARVEST PER SQUARE MILE - (BLACK ROCK FORST - 6 SQUARE MILES)

YEAR	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
AM/SM	4.8	6.5	8	5.5	3.7	3.7	5.3	8.2	5.5	3.6	2.7	2.3	4	5

Does

The female harvest of 13, fell short of the quota of 15. Adults averaged 94 lbs dressed. Age classes from fawn to 7 1/2 years old were represented. Two adults were not aged, one found dead in the woods, the other tagged. Both were not inspected by a Certified Deer Ager.

Female (Does)

Year	Fawn	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5-9.5	10.5+	Unknown (adults)	Total
Harvest	1	1	4	2	1	1	0	1	0	0	2	13

Adult Female to Adult Male Harvest Radio

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
AF/AM	0.34	0.28	0.52	0.76	0.95	0.50	0.44	0.45	0.91	0.45	0.81	0.78	0.00	0.40

ACORNS

The abundant mast crop of 1996 by the Chestnut and White Oaks was evident in the antler growth of 1997. In conjunction with a mild winter, (see Winter Severity Report 1996-97) Deer surely benefitted from these preferred acorns. (see Article: Black Rock Forest Acorns)

Although a dry spell in September prompted some acorns to drop early the mother lode was dropped right on schedule, falling during the last week in September to the first week in October. Only the Red Oak group produced seed this year (Northern Red and Black Oaks).

Investigation into the Northern Red Oak acorn crop revealed 60% of freshly dropped acorns were sound. A sound acorn being defined as: lacking any meat discoloration due to decay or presence of insect larvae. Presuming only sound acorns are available for wildlife consumption and benefits. 18,481 acorns per acre (187 lbs) of Northern Red Oak have been available to wildlife since early October.

BLACK ROCK FOREST ACORN PRODUCTION

Year	Northern Red Oak	Black & Scarlet Oak	Chestnut Oak	White Oak	Total
1995	23,501	6,221	-	-	29,722
1996	2,626	3,870	27,233	11,888	45,619
1997	31,864	27,579	-	-	59,443
	18,481 (sound)				

CONCLUSION

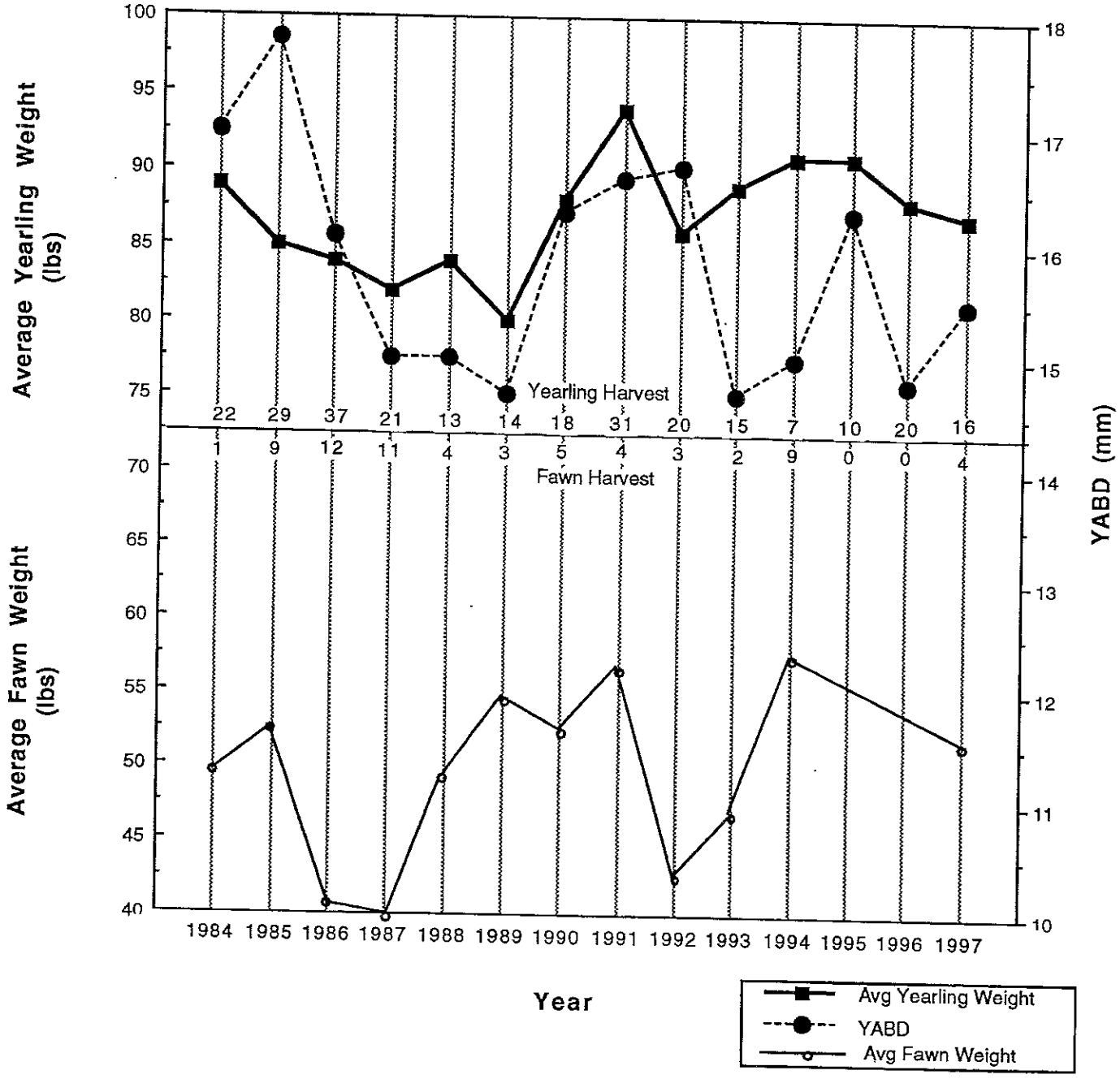
At this point in time, December 1997, the deer herd appears to be in a healthy condition. Harvest data supports the herds potential for growth. Increased sightings of fawns by hunters (Fall '97) and a good representation of productive females (2 1/2 - 6 1/2 years) seems to lead to a growing population of White-tailed deer at Black Rock Forest, if food remains available through the winter of 1997-1998.

1984 - 1994 HARVEST DATA: FAWNS

YEAR	TOTAL FAWN HARVESTED	TOTAL ANTLERLESS TAKE	FAWNS AS % OF ANTLERLESS HARVEST	MALE TOTAL HARVESTED	MALE AVG DRESSED* WEIGHT (LBS)	FEMALE TOTAL HARVESTED	FEMALE AVG DRESSED WEIGHT (LBS)
1984	1	10	10%	0		1	50
1985	9	20	45%	6	56	3	48
1986	12	37	32%	8	45	4	33
1987	11	36	29%	7	38	4	44
1988	4	25	16%	1	44	3	49
1989	3	14	21%	3	55	0	0
1990	5	19	26%	3	56	2	48
1991	4	26	15%	3	59	1	52
1992	3	33	9%	1	48	2	40
1993	2	12	16%	1	46	1	48
1994	9	22	40%	4	65	5	53
1995	0	11	0%	0			
1996	NO ANTLERLESS TAKE						
1997	4	16	25%	3	53	1	48
TOTALS	67	254		40		27	
AVERAGE			25%		53		45

* DRESSED WEIGHT - Weight of animal with all internal body organs removed.
(Live weight calculaton = dressed weight x 1.25)

POPULATION TREND



POPULATION COMPOSITION BY YEAR CLASS FOR DEER KNOWN TO HAVE BEEN REMOVED

BIRTH	YEAR OF DEATH																										MIN POP KNOWN		TOTAL	AGE AS OF
YEAR	1984		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997				FALL 1997
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		(yrs)
1983	22	5	3	5	2	4	0	5					0	2			0	1											27	22	49	
1984	0	1	32	2	9	7	1	6	0	5	0	1	0	0	0	1	0	3											42	27	69	
1985			6	3	37	5	10	8	0	4	0	3	0	0	0	0	0	2			0	1	0	0					56	28	84	
1986					8	4	22	1	8	6	0	4	0	1	0	3	0	3			0	0	0	0					41	28	69	
1987							7	4	13	3	7	1	1	6	0	1	0	5	0	1	0	2	0	0					29	25	54	10.5
1988									2	3	15	1	13	4	4	3	1	2	0	1	0	1	0	0					36	16	52	9.5
1989											3	0	18	1	14	6	5	3	0	2	0	1	0	1					42	16	58	8.5
1990													3	2	31	7	7	5	2	1	0	1	0	0			0	1	44	17	61	7.5
1991															3	1	20	6	5	3	7	3	0	3	0	0	0	0	36	18	54	6.5
1992																	1	2	15	2	2	3	2	2	0	0	0	1	24	19	43	5.5
1993																			1	1	7	1	2	3	1	0	0	1	11	6	17	4.5
1994																					4	5	10	2	1	0	3	2	16	7	23	3.2
1995																							0	0	20	0	11	4	20	0	0	2.5
1996																											16	1	0	0	0	1.5
1997																											3	1				FAWN
TOTAL	29	8	45	14	56	26	40	29	23	24	25	11	35	16	52	23	34	32	23	11	20	18	14	11	24	0	33	13	468	266	734	

*The data represents the population compositon each year at the time fawns were born.

**Known mortality Misc. - These are deer known to have died by other means than hunter kill. (Vehicle collision, starvation, predator kill, unknown)

FISH + GAME NEWSLETTER JAN. '98

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THE SEASON November 17 to December 9

The start of 1997 deer season was influenced by a snow event occurring November 14. Three to five inches of wet snow caused very icy conditions on forest roads restricting two wheel drive access by hunters. Snowcover remained throughout the forest for 13 of the 23 day season, certainly aiding hunters. Club members maintained their long history of accident - free hunting seasons.

THE DEER

Bucks - The harvest produced 33 bucks (31 rifle, 2 bow). Pleasing to many hunters, 11 bucks were 6 points or better (33%). The noticeable increase of antler size (beam diameter) could possibly be explained by the high proportion (50%) of 2 1/2 to 3 1/2 years old in the adult buck take.

Yearling bucks were well represented in the buck take (16). Half were spikes, four were four points or better. Beam diameter in all age classes increased dramatically. Benefitting from the abundant antler producing acorn crop of the White and Chestnut Oaks in the fall of 1996. Dressed weights of yearling bucks were average (87 lbs) ranging from 76 - 96 lbs. Adults (2 1/2 - 3 1/2 years old) were quite variable. Ranging from 80 to 140 lbs dressed, adults averaged 112 lbs. Remember, 2 1/2 year old deer were fawns during the winter of 1995-96. Initial body development may have been effected by the severity of that winter, causing the extreme range in body weights in that age class.

Does - The harvest of 13 does feel short of the quote of 15. Average 94 lbs (dressed) age classes from fawns to 7 1/2 yrs were represented.

Of special concern are two incidents of wounded fawns, which had to be shot and tagged by responsible hunters instead of the primary shooter. Also, two adults does were shot, in Zone 2 and 3, and left. Both deer were shot in the chest cavity.

THE HUNTERS

164 hunters visited the forest 515 times. Approximately one out of five hunters harvested a buck and one out of every three bucks was six points or better. Fifty-two (52) hunters possessed D.M.U. 54 permits harvesting 16 antlerless deer, a 30% success rate. Combined, 28% of all hunters harvested a deer

Big Bucks Of Black Rock Forest - 1997

Hunter's Name	Points	Age (yrs.)	Weight (lbs)	Beam (mm)
Glenn Shearer	6	3 1/2	140	31
Al Ghiotti	8	3 1/2	112	30
Eugene Ghiotti	6	2 1/2	132	27
David Roulanger	8	2 1/2	114	24
Seamus Leavey	8	2 1/2	102	25
Joe Swanson	8	2 1/2	100	25
Farrell Hopkins	8	3 1/2	116	22
Henry Meserole	7	2 1/2	122	23
Doug Spaulding Jr.	7	2 1/2	112	23
Al Woodruff	6	2 1/2	110	22

ACORNS

On the brink of winter, nature's harvesting season, life rains from the trees of the forest in the form of acorns. Trees, the "Giver of Life", pass on the potential and spirit of life. Native Americans perceived the falling of acorns, as giving birth to future forests and substance to the very animals they needed to sustain their own lives. Believed among many American Indians, one's spirit will ultimately be transformed into a tree, after one has understood and experienced the flow of life's energy. First spiritually becoming a wild animal after human death, to better understand the web of life, next to appear an efficient provided as a parent tree. True spirits are hard to explain in today's world. But, there is a strong trend in our children's educational teachings of the relationship of the forest to its wildlife (people included) as spiritual, as it once was.

Humankind, in this century, has observed the importance of acorns and has applied science to its understanding. Mast crops has been observed to feed nearly 200 species of birds and mammals. Acorn scarcity and abundance influence their reproductive success, survival, size of population and overall body condition. Some of the many birds and mammals known to utilize acorns for 10-50% of their diet; wood duck, ruffed grouse, wild turkey, grackle, blue jay, nuthatch, brown thrasher, red-bellied and red-headed woodpeckers, black bear, raccoon, opossum, skunk, chipmunk, fox and gray squirrels, red and gray fox, coyote and deer (Martin et al 1951).

Insects may cripple 50-100% of the mast crop, before it hits the ground. On average, only 46% of acorns fallen to the ground are sound or viable condition (Downs 1949), available only then to most consumers. At this point the greatest utilizer of acorns are squirrels and chipmunks. At common densities of 130 per square mile, squirrels which require 1.5 lbs. of acorn per week account for more acorns than any other mammal. The second greatest consumer is the white-tailed deer, depending on acorns as a supplier of protein, calcium, vitamins, phosphorus and crude fiber. Acorns, may at times consist of up to 50% of the deer's diet. The daily food intake of deer averages 4 lbs of plant matter per 100 lbs of body weight (Devendeck 1962). The average deer of Black Rock Forest weighs approximately 120 lbs. Deer will daily consume 1.5 - 2.0 lbs in the form of acorns if available. This translates into the consumption of up to 200 acorns per day, consisting of possibly three feeding periods, quite a belly full. Further studies (Goodrum 1971) concluded; if acorns consist of 50% of a deer's diet, 750 lbs of acorns will be needed to support one deer over a 300 day period. The oak trees of Black Rock Forest average 150 fresh acorns per pound. Consequently, one deer would require 112,500 viable acorns to maintain a healthy body condition over a 300 day period. Also competing for acorns is the wild turkey. The turkey depends on 75% of its diet consisting of acorns. This game bird will require 114 lbs of acorns over a 300 day period (Goodrum 1971).

Fresh acorns produced (lbs) during an average year (Down 1949)

Diameter Breast Height	Chestnut Oak	White Oak	Northern Red Oak	Black Oak	Scarlet Oak
10	0.9	0.7	0.4	1.1	2.5
12	3.0	1.4	2.2	1.7	3.9
14	5.0	2.8	5.7	2.3	5.6
16	6.0	4.5	10.0	2.8	8.0
18	8.1	6.7	14.5	3.4	12.1
22	9.8	11.3	17.1	4.6	17.5
26	10.5	13.1	13.8	5.8	18.3
30	10.8	12.5	10.0	7.0	18.3
Average acorns per pound (fresh)	100	120	125	245	235

Effects upon mast crop size are not precisely known. Killing freezes in early spring and high relative humidity have proven to periodically influenced pollen dispersal. Overall little relationship have been found between crop size and weather. Tree yields are influenced by age, crown size and dominance of the canopy. Most oak species yield acorns near the age of 20 years, with bumper crops occuring every 4 to 5 years. Mast crops increase with age and size until a detectable decrease in production in white and north red oaks in the +26" DBH diameter classes. It has been repeatedly demonstrated that silvicultural treatments of northern hardwood forest increase the abundance of forbs, grasses, stump sprouts, berry bushes, and acorn production creating a greater diversity of wildlife.

The Black Rock Forest is dominated by intermediate and mature oaks. This seed source is also critical in the perpetuation of the forest ecosystem. It is uncertain to what degree oaks dominated pre-settlement forests. However, careful analysis of fossil pollen assemblages from sediments in Sutherland Pond demonstrate oak trees have been abundant for the past 10,000 years. (Maenza-Gmelch, 1995) Indications from oak regeneration, or the scarcity there of, are that oak forests are changing. Studies at Penn State University revealed: "Only 0.6 percent of original acorn production resulted in live seedlings 18 months later. In other words, both acorn survival and seedling survival in this study were too low to achieve natural regeneration of Northern Red oak stands from seed." (Zaczek 1995) These six acorns out of 1,000 reaching a seedling stage at 18 months are further reduced by the browsing of deer until sapling stages. Thus, the chances of an acorn becoming a tree under natural conditions in the forest of today are slim. In this century oak regeneration has relied on stump sprouts to maintain its present existence.

There are seven species of oaks found in Black Rock Forest, listed in order of abundance below:

Northern Red Oak - Quercus rubra
Chestnut Oak - Quercus montana
White Oak - Quercus alba
Black Oak - Quercus velutina
Scarlet Oak - Quercus coccinea
Scrub Oak - Quercus ilicifolia
Swamp White Oak - Quercus bicolor

The importance of mast crops to deer over the past decade has been evident. The abundance of acorns is likely a major determinate of herd health and reproduction. However, accurate measurement and classification of mast crops would be required to properly determine the effects of acorn abundance on whitetail deer. Previous forms of measurement of mast crops consisted of observation of species producing seed and visual estimates of abundance (ex. poor, good, bumper). This proved inadequate, and a more uniform numerical censusing method was needed.

A time and cost effective means of sampling was established in the fall of 1995. This random sampling method utilizes a hoop 34" in diameter, a vehicle, and 1 1/2 days field work over a three (3) week period.

PROCEDURE: One survey at weekly intervals over the period of acorn drop (late September - early October). A transect containing 15 sites bisecting the forest north to south was traveled by vehicle. At each site the hoop was thrown randomly 10 times, interpreted as 10 plots. Each plot would then be investigated for viable acorns and/or fresh acorn caps. Parent tree species and amount of acorns are recorded per plot. Accumulation of the data produced from 450 plots over a three (3) week period appeared adequate to determine acorn crop size.

RESULTS: Weekly interpretation of data revealed the peak of acorn drop by species. Computation of peak crops numbers disclosed the number of acorns per acre, by species.

APPLIED DATA: Acorns per acre will be classified as: (Auchmoody,etal 1993)

	Acorns/acre
Bumper	>250,000
Good	125-250,000
Fair	65-125,000
Poor	20 - 65,000
Trace	<20,000

Continuation of investigation will develop a rating chart specific to Black Rock Forest. Data should lead to a greater understanding of this important food source, and provide a foundation for future forest stand stocking.

ACORN PRODUCTON AT BLACK ROCK FOREST

1995	Northern Red Oak	Chestnut Oak	White Oak	Black and Scarlet Oak	Totals
Sound acorns per acre	5,085	0	0	3,751	8,836
Lbs. acorn per acre	40	0	0	15	45
1996					
Sound acorns per acre	2,626	27,233	11,888	3,870	45,619
Lbs. acorn per acre	21	272	99	16	408
1997					
Sound acorns per acre	31,864	0	0	27,579	59,443
Lbs acorns per arce	254	0	0	115	369