

FOREIGN GAME BIRD STOCKINGS AND RESULTS IN VIRGINIA

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ABSTRACT

In order to determine the status of the Foreign Game Investigation Program in Virginia, an evaluation of releases was begun in 1969 and completed in 1971. All foreign game releases made between September 1958 and June 1969 were checked by District Biologists in 1969-70 fiscal year and a report completed which included species, sex and numbers of birds released; if birds still remained in area or when last seen; whether young were observed during 1969; distance birds moved; estimated numbers in area and limiting factors known to exist in the area. These reports were sent to the author for compilation of the data.

Eight species of pheasants, the Black Francolin and French Redleg partridge were received from various sources, reproduced and releases made.

Some species of pheasants were cross-bred and the hybrid birds released. Crosses of the Western Iranian blackneck (*Phasianus colchicus Talischensis*) and Chinese ringneck (*P. c. torquatus*) have been produced in greatest numbers and appear to have become established in two areas. The Eastern Iranian blackneck (*P. c. persicus*) crossed with the Chinese ringneck (*P. c. torquatus*) show promise in the Northern section of Virginia. The pure Japanese green pheasants (*P. versicolor robustipes*) have increased in numbers in Tidewater Virginia since their introduction in 1960.

The study indicates that the other species introduced have not adapted to any areas in Virginia.

INTRODUCTION

The primary purpose of this study was to compile a complete record of the Foreign Game stocking in Virginia under the Foreign Game Investigation Program. It was apparent that most efforts had been unsuccessful so far as the objective of the program was concerned; that is, to establish a pheasant population in Virginia for hunting purposes. The study was designed to accumulate and analyse all information possible in order to determine those varieties of pheasants that had been most successful. We were also interested in listing any factors in the release areas that might have influenced the success or failure of the birds.

HISTORY

Earliest recorded successful pheasant introduction in the U. S. was made by O. N. Denny in 1881 when he imported 100 pairs of Chinese ringnecks from Shanghai to the Willamette Valley of Oregon. Many other states and individuals followed Oregon's example but pheasants became established in only 19 Northern and Western States.

Virginia had its share of unsuccessful exotic releases. One early private release (1947) of Ringnecked Pheasants on Cedar Island in Back Bay was considered successful for years but was only sustained by almost yearly restocking. Attempts were made from 1956 to 1959 to propropagate coturnix (Japanese Quail); however, they disappeared very rapidly and after raising and releasing 12,548 during three breeding seasons stocking was discontinued.

Brood stock of eight different species or subspecies of pheasant and two species of partridges were obtained through cooperation in the Foreign Game Investigation Program, and used at the game farm for production of pure strains and crosses for experimental stocking.

The first pheasants were *Phasianus colchicus talischensis* Western Iranian and *P. c. persicus* Eastern Iranian obtained in December 1957, Imperial Valley Chinese ringnecks *P. c. torquatus* were obtained in

March 1958 and cross breeding with the two varieties of blacknecks was begun. The first releases were made on September 26, 1958; 300 birds released at Sandy Point in Charles City County and 50 birds released on Hog Island Refuge. A follow up was made on March 20, 1959 by releasing 400 birds at Sandy Point and 50 birds on Hog Island. These birds were *P. c. talischensis* crossed with *P. c. torquatus*. The Hog Island birds all moved off the refuge or died within two years. The Sandy Point birds remained and produced and have continued to be one of the most successful of the entire stocking program.

Japanese green, *P. versicolor robustipes* and Reeves *Symaticus Reevesi* were obtained in 1959. The Reeves were unable to tolerate Virginia weather at the Game Farm and the brood stock was disposed of after attempting one release which soon disappeared. Japanese greens have been produced and stocked in Tidewater, Northern Piedmont and Shenandoah Valley.

Black Francolin, *Francolinus francolinus* and Red Junglefowl, *Gallus gallus murghi* were acquired in 1960. A stocking of wild trapped Black Francolin shipped from India by Dr. Bump were released on Hog Island Refuge in 1959. They persisted for about two years. The Junglefowl developed Staphylococcus in the feet after cracking due to freezing. After two years the brood stock was transferred to South Carolina.

French Redleg Partridge, *Alectoris rufa rufa* and Korean ring-neck pheasant *Phasianus colchicus karpowi* were obtained in 1966. The Korean has been used to cross with the Iranian blackneck. The Redleg has been stocked with little success.

The Kalij pheasant, *Lophuri hamiltoni*, were shipped to Virginia from India by Dr. Bump in 1960.

DESCRIPTION OF SPECIES AND ORIGIN

Brood stock was secured for use in experimental stocking under the Foreign Game Investigation Program guidance of Dr. Gardiner Bump.

The Eastern Iranian blacknecked pheasant is about the size of the ringneck and similar in coloration except for the absence of the white neck ring. Dr. Bump (1968) reports that this bird comes from the Southeastern shores of the Caspian Sea in Northern Iran. The habitat was mostly dry-farmed croplands and adjacent open forest or brushland with rainfall of fifteen to thirty inches per year; Northern Virginia was similar habitat.

The Western Iranian pheasant is similar in size to the Eastern Iranian pheasant. This pheasant prefers (Bump 1968) flat or rolling country with open to thick brush or woodland interspersed with grainfields where annual rainfalls reach thirty to sixty inches. It is native to Northwestern Iran (Bump 1968). It was chosen as a possible species for the Piedmont coastal plain and to cross with the Chinese ringneck for release in most of Virginia.

The Chinese ringneck (Imperial valley strain) was chosen for crossing with the Iranian species.

The South Korean ringnecked pheasant was also obtained for crossing with the Iranian. It is native to Korea and Southern Manchuria (Bohl 1970) and is similar in appearance to the Chinese ringnecked pheasant. It occurs from sea level to about 2,000 feet elevation in grass, brushland and forest edges associated with cultivated fields where rainfall varies from thirty-seven to sixty inches.

The Japanese green pheasant is a resident of Japan's larger islands (Bohl 1970). It is similar to the Chinese ringneck except in coloration of males which have a green crown, blue throat, purplish-violet neck, back and rump green tinged olive or bluish grey and green underparts. It prefers lowlands and rolling hills of croplands such as rice, soybeans, barley, wheat and other grains. This bird was chosen for use in the coastal plain which is similar habitat.

The Kalij pheasant (Bump 1958) is found in the southern flanks of the Himalayas from India to Nepal and Burma. This species was chosen for use on the fringes of Virginia's ruffed grouse range.

The black Francolin is a native of Northeastern Iran and Afghanistan east through Pakistan and India in dense-to-open grassy areas and on cultivated lands with rainfall of twenty to 150 inches. They were selected for releases in Tidewater Virginia.

The French redleg partridge (Bump 1968) is a native of Northeastern Europe. They were selected for trial in Southern Piedmont Virginia.

METHODS AND MATERIALS

An evaluation project was initiated in 1969 to 1971 to determine the status of Virginia's Foreign Game stocking program.

All releases made prior to June 1969 were checked by touring the area, interviewing local landowners and observers, and discussion with the Game Warden in the area. Census methods used included crow counts, brood census and field census with dogs. A report on each release was completed by the District Game Biologist and submitted with location maps to the author.

Information reported included estimated number of birds remaining in the release area, young birds seen during 1969, how far birds traveled and limiting factors.

Limiting factors included avian and mammalian predation, poaching or illegal hunting, cover and food habitat, disease and weather. The factors shown in this report are not intended to be interpreted as an explanation as to why the stocking program may have met with success or failed in some areas. These factors are listed because they have been observed carefully and are known to exist where the birds were released.

RESULTS

The Talichensis-ringneck cross birds were the first released and have been produced in greatest numbers. From September 1958 to June 1969, 13,983 birds were released on 79 release areas, Table 1. They have been widely distributed throughout the state, Figure 1. Thirty-two of these releases were less than two years old in 1969. Two in Charles City county were ten and eleven years old, Table II. Twenty releases have birds after two to five years; eight releases have birds five to ten years later. Sixteen releases are reported failures with birds disappearing in one to seven years, Table III. Many of the releases had replenishment stocking which made analysis of the true results very difficult. The earlier releases were in most instances the ones that have had the best reproduction, particularly the Charles City release on

TABLE 1. Release data by species, number releases, number birds released, percent of releases with birds still in the area and percent of releases where young were observed in 1969.

Species	* Number of releases	Number of birds released	% of releases still having birds in 1969	% of releases where young were observed in 1969
Tali-X	79	13,983	82	70
Tali	2	1,035	100	100
Persi-X	9	3,822	44	66
Persicus	2	2,067	50	100
Japanese Green	20	5,476	90	89
Tali-X, J, Green	5	1,272	80	50
Mix-Tx-Px-J.G.-Korean	1	298	100	60
Tali-X-Korean	15	2,604	93	71
Tali-X, Persicus-X	5	3,375	80	0
Kalij	5	1,228	0	0
Black-Francolin	13	2,008	0	0
Redleg Partridge	3	220	0	0
TOTAL	159	37,388

* 1958 through 1969.

TABLE 2. Number of years birds have been on release site—reported in 1969.

Species	Years since release: *					Total releases
	0-1	1-2	2-5	5-10	10+	
Tali-X	18	14	20	8	2	62
Talischensis				2		2
Persicus-X				4		4
Persicus				1		1
Japanese Green		1	9	8		18
Tali-X, J. Green						0
Mix-Tx-Px-J.G.Korean				1		1
Tali-X, Korean	9	3	1	1		14
Tali-X, Persicus-X				4		4
Kalij.			1			1
Black Francolin				1		1
Redleg Partridge						0
TOTAL	27	18	31	30	2	108

* For number of releases and number of birds released, see Table 1.

TABLE 3. Number of years birds have remained on release site before disappearing—reported in 1969.

Species	Years birds remained in release area: *				Releases Unknown	Total
	0-1	1-2	2-5	5-10		
Tali-X		5	8	2	1	16
Talischensis						0
Persicus-X			2	1	2	5
Persicus			1			1
Japanese Green		1	1			2
Tali-X, J. Green			5			5
Mix-Tx-Px-J.G.-Korean						0
Tali-X, Korean	1					1
Tali-X, Persicus-X				1		1
Kalij.		2	1		1	4
Black Francolin	1	4	2		5	12
Redleg Partridge	1	2				3
TOTAL	3	14	20	4	9	50

* For number of releases and number of birds released, see Table 1.

Sandy Point. This release continues to have good reproduction each year after eleven years.

Limiting factors most frequently reported were mammalian predation 56 percent, and poaching 51 percent Table IV. Other factors reported were avian predation 23 percent, cover 9 percent, and food 5 percent.

Two releases of pure Talischensis, 1,035 birds released in New Kent 1961-62 and King William 1962-63, continued to have straggling populations which remain small but some reproduction was reported in these two areas.

The Persicus-ringneck cross of birds was released on nine areas, 3,822 birds in 1959 to 1966, before being discontinued, Figure II. Releases were made in Northern and Central Piedmont and Northern Shenandoah Valley. One release near Luray in Page County made in April and August 1963 has had good reproduction and dispersed 15-20 miles from the original release site and appears to be well established. Two other releases have straggling populations. Luray was the most northern release area. Straggling populations also remain in the two most northern

VIRGINIA

STATE OF VIRGINIA

Releases 1959 thru 1966

Persicus (2,067 Birds)

Persicus - Ringneck Cross (3822 Birds)

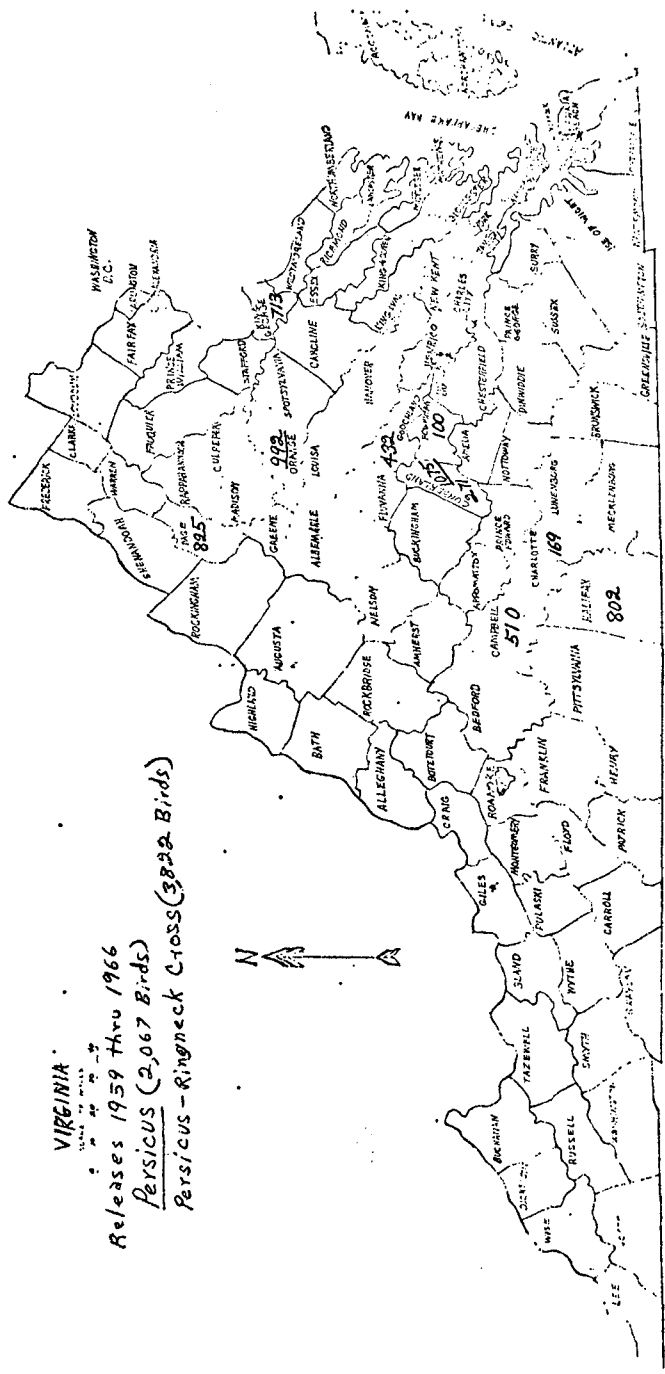


TABLE 4. Limiting factors by species, number of releases and percent of releases reporting factors.

Species	No. of releases	Predation:			Habitat:		Dis-ease	Weather
		Avian	Mam-malian	Poach-ing	Cover	Food		
Tali-X	79	23	56	51	9	5	0	0
Tali	2	0	100	100	0	0	0	0
Pers-X	9	11	78	66	0	0	0	0
Persicus	2	0	100	100	0	0	0	0
Japanese Green	20	20	85	80	6	10	0	0
Tali-X, J. Green	5	60	60	80	0	0	0	0
Mix-Tx-Px,J.G.-Korean ..	1	0	100	100	0	0	0	0
Tali-X, Korean	15	20	60	33	20	7	0	0
Tali-X, Per-X	5	20	80	100	0	0	0	0
Kalij.	5	0	20	20	0	0	0	20
Black Francolin	13	8	46	38	8	0	0	16
Redleg Partridge	3	33	67	0	0	0	0	33
TOTAL	159	20	62	55	8	5	0	3

Piedmont releases after five to ten years. Six remaining releases in southern Piedmont disappeared after two to five years, Table III.

Two pure *Persicus* releases, 2,067 birds, yielded a straggling population (Orange release) with some reproduction after eight years and a complete failure (Cumberland release) in three years. Both releases included about 1000 birds, 1961-62 (Orange) and 1963 (Cumberland). It appears that the more northern releases of *Persicus* and *Persicus-X* survived best.

The Japanese green pheasant, 5,476 birds, released on twenty areas in 1961 to 1969 have shown promise in Tidewater and northern Shenandoah Valley, Figure III. Releases made on Eastern Shore and Northern Neck appear to have survived best with continued reproduction on the older releases after eight years. Three releases in Shenandoah and Frederick counties in the northern Shenandoah Valley continue to have reproduction and good populations after three to five years. Northern Piedmont and southern Blue Ridge have few birds remaining after four or five years. Japanese green pheasants released near water appear to be doing the best. Only two releases reported not having any birds remaining in 1969 and both were small releases of only twelve and fifteen birds.

Green pheasants and other varieties, either pure or crossed, released in the same area did not survive more than two to five years, Table III.

Fifteen releases, 2,604 birds, *Talichensis*-cross crossed with the Korean ringneck, have not been released long enough (1966 to 1969) to give a good indication of success, Table 1. One release was first stocked in 1963 in King William county with *Talichensis*-cross and was replenished with Korean in March 1969. All birds on one release (Amelia) were reported to have disappeared in less than one year. All other releases reported some reproduction during 1969.

Mixed releases of *Talichensis-X* and *Persicus-X* on five areas have survived five to ten years in central Piedmont. All releases were originally stocked with *Persicus-X* and later restocked with *Tali-X*, after the *Persicus-X* had about disappeared.

The Kalij pheasant, Black Francolin and the Redleg partridge have shown very little promise with birds disappearing in one to four years.

CONCLUSIONS AND RECOMMENDATIONS

From studies made thus far, it appears that two crosses and one pure strain of pheasants have shown some success in Virginia. The *Talichensis*-ringneck cross in Charles City county (Sandy Point), the *Persicus*-ringneck cross in Page County (Luray), and the Japanese green pheas-

ant on Eastern Shore, Accomack and Northampton counties, are releases that have had encouraging reproduction and birds have remained there five to ten years. Each of the above strains have also had failures or straggling populations in other locations. The Talichensis-X has been the most widely distributed but has had about the same success as the Persicus-X. The Persicus and Persicus-X have had the most success the further north they were released. The Japanese green appears best suited to wet lands along the coast or large streams. It appears that when the Japanese green and any other species were released in the same area both species soon disappeared. The Korean ringneck pheasants have not been released long enough to determine its adaptability to conditions in Virginia. The Kalij, Black Francolin and French Redleg Partridge do not appear to be able to adapt to conditions in Virginia and should be discontinued.

It is believed that serious attempts should be made to live trap and transplant birds from the known reproducing releases and transplant to suitable release sites and also to replenish brood stock if the Game Farm is to continue to operate.

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