OBSERVATIONS ON EUROPEAN WILD BOARS RELEASED IN SOUTHERN WEST VIRGINIA

WILLIAM K. IGO, West Virginia Department of Natural Resources, White Sulphur Springs, WV 24986
THOMAS J. ALLEN, West Virginia Department of Natural Resources, Elkins, WV 26241
EDWIN D. MICHAEL, Division of Forestry, West Virginia Univ. Morgantown, WV 26506

Abstract: Thirty pen-reared European wild hogs (*Sus scrofa*) were released in 1971 in southwestern West Virginia with the purpose of establishing a huntable population. The stocking involved construction of pens in a remote area followed by artificial feeding and gradual release of sows that had recently farrowed. Size of release area and sow-piglet introductions are considered major factors resulting in establishment of a wild population. Wild boars have produced litters annually and are presently occupying 130 sq km. Observations from monitoring activities on reproduction, foods, seasonal movements, and behavior closely conform to similar data of other researchers. A limited permit hunt is scheduled for November 1979.

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Big game populations in southwestern West Virginia have historically been low. White-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris galapavo*), and black bear (*Ursus americanus*) are relatively scarce. Fall hunting for bear and turkey has not been permitted for many decades. Several southern counties have been closed to deer hunting periodically since the mid-1950s. Socio-economics of the area and free-running dogs are thought to be major reasons for the existing big game situation. The Department of Natural Resources' Wildlife Division elected in 1970 to release European wild boars hoping this relatively prolific species could better cope with illegal hunting and free-running dogs and thereby provide this portion of the state with a substantial big game population.

To our knowledge, release of pen-reared wild boars has not previously resulted in a successful introduction. An effort to establish European hogs in Tennessee in 1962 by releasing pen-reared stock was unsuccessful (Lewis 1966), apparently because the release animals were too tame. Due to low wild boar populations in Tennessee in 1970, live-trapping for transporting to West Virginia was not feasible. Wildlife officials therefore decided to purchase pen-reared hogs, believing release in a large, remote area would result in establishment of a wild population. Other advantages of pen-reared stock were higher purity of European strain and ease of procurement.

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STUDY AREA

A 260-km^2 area centering around the Spruce-Laurel drainage of Boone and Logan Counties was selected as the release site. This area was chosen because of its relatively large size, remoteness, and cooperation from private landowners (Bailey 1970). Most of the area is owned by land and coal companies.

The Spruce-Laurel drainage lies in the extreme southern portion of Boone County, approximately 50 km south of Charleston WV. This area is characterized by steep slopes and narrow ridges frequently dissected by scattered, rapidly decending streams. The rugged hilly terrain is 90-95% woodland with a total relief of 853 m and a mean elevation of 394 m (Lee et al. 1973).

South-facing slopes are comprised chiefly of oak (*Quercus spp.*) and hickory (*Carya* spp.), while cove hardwood species such as tulip tree (*Liriodendron tulipifera*), basswood (*Tilia americana*), cucumber magnolia (*Magnolia acuminata*), and yellow buckeye (*Aesculus octandra*) dominate north-facing slipes. Mixed hardwoods on east and west slopes include beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), yellow birch (*Betula alleghaniensis*), and white ash (*Fraxinus americana*). The study area is described in detail by Igo (1973).

METHODS

West Virginia wildlife personnel believed that the release of sows with piglets would enhance chances for a successful stocking. Therefore, pregnant sows were included in the stock of 15 adult hogs purchased from D. Cole, Tellico Plains TN. The boars were taken to the French Creek Game Farm near Buckhannon WV on 28 January 1971. Three sows had litters totaling 13 piglets between 29-31 January and 2 sows had a total of 7 piglets on 22 March. Sows with piglets were isolated until stocking.

Three 6m^2 pens were erected in a central drainage of the release area. Pens were made of 1.2 m hog wire topped with 2 strands of barbed wire. Each pen was equipped with an automatic feeder and artificial shelter. Pens were adjacent to and intersecting a small stream to allow watering and wallowing (Allen 1971).

Thirteen piglets and 8 adults (6 females and 2 males) were eartagged at French Creek and transported to the release site by truck on 25 March 1971. One sow had 3 piglets enroute, 1 of which was born dead. This sow and both remaining piglets died in less than a week. Dead piglets were taken in utero from another sow which recovered; she was released into the wild 14 April. Two other sows appeared to reabsorb litters after 1 week in the pens (Allen 1971).

The 2 sows with 13, 8-week old piglets were placed in 1 pen. These piglets were small enough to move freely in and out of the pen. After 1 week in the enclosure, this group was released. Two adult male wild boars and 2 sows that had apparently reabsorbed litters were released after 2 weeks of enclosure.

On 14 April the 2 sows with 7 4-week old piglets were eartagged at French Creek and transported to the pens. They were released by unauthorized persons on 19 April. An additional adult male was transported to the area 27 April, but escaped from the pen within 24 hours.

A total of 10 adults and 20 young (14 males, 16 females) were successfully released. These boars remained in the general drainage, rooting nearby streams and hillsides as well as occasionally utilizing feeders. Activity around feeders appeared to be nocturnal. Hogs were fed commercial hog chow and shelled corn during April.

An additional 12 wild boars (5 adults and 7 shoats, 5 males and 7 seven females) were released in the same general area 6 March 1973. These hogs had been confined at French Creek for study, but high maintenance costs prompted a decision for their release. This additional stocking occurred after an intensive 6-month field study in 1972 (Igo 1973) and is believed to have had no effect on the ultimate success of the original release.

Observations concerning status, reproduction, dispersal, seasonal habitat usage, foods, and behavior were gathered during July-December 1972 (Igo 1973). Additional observations on population status, reproduction, and range were made periodically (winter and/or summer) during 1973-1979. Transects were established in 1972 in a 5 km^2 area near the release site. Hillsides (north and south facing exposures), drainages, and ridges were included in all routes where possible. Transects were walked weekly from July-December 1972 and all wild boar sign and other observations recorded. If a wild boar was observed or fresh sign noted, an attempt was made to follow or backtrack the animal(s) to gather specific information on foods, litter size, or behavior. Food items

utilized by wild boars were determined by field observations of feeding animals, sign left at rooting areas, and gross field examination of fecal samples.

A primary objective was to determine dispersal. All boundaries except the southern extremity were established by field checking outer limits of areas where hog sign or sightings were observed or reported. Ridges and drainages were then traversed until wild boar sign was no longer found. All use areas were recorded on 7.5 min. topographic maps. A line (boundary) was then drawn between the last observed sign and the area where sign became nonexistent. The southern boundary was determined by interviews and reports from local residents and wildlife personnel. This range was updated in December 1974 (Igo 1975) using the same method. During 1975-1979 boundaries for the boar-use area were arbitrarily moved to the nearest highway, and interviews with local residents along these routes and concurrent spot field checks were used to ascertain if the boars' range had appreciably expanded.

RESULTS AND DISCUSSION

Release Success

The stocking is considered successful based on annual production (1972-1979) of European wild boars in the wild. Since most wild boars remained in their pens only 1-2 weeks or less, use of pens and artificial feeding may not be important to the release success. Unlike Lewis' 1962 release, this pen-reared wild boar stocking involved release of sows with young piglets into a large remote area.

Status Following Release

Similar to Lewis' (1966) stocking, many of the hogs were quite tame following release. Residents of a community 3 km south of the pens reported (as early as April) 2 adult wild boar visited their small farms and ranged in mountainous pastureland with their livestock-often sleeping in small sheds with their cattle. These people had to chase the animals from their small gardens several times. Both were reportedly shot later in the summer at a nearby coal refuse. Numerous reports of domesticity came from persons frequenting the release area in the summer and early fall of 1971. Picnickers, campers, and hunters related that wild boar often came into campsites for handouts. Observations of sow-piglet groups were uncommon. When sighted, these groups displayed wilder behavior than other sex-age groups.

With the onset of small game hunting season in mid-October, reports of tameness lessened. Between this period and early summer of 1972 wild boars were observed infrequently. Local residents still reported an abundance of boar sign, which may have indicated that animals became more wary or became more nocturnal. Following the release of additional pen-reared wild boars from French Creek in March 1973, reports of tameness were again received. There have been no reports of tameness since the fall of 1973.

There were 9 confirmed mortalities between the release and December 1972, all illegally killed. Four confirmed illegal kills occurred during 1973-1978. Illegal shooting is considered to be an important mortality factor, possibly limiting range expansion.

Reproduction

Litters were produced each year from 1972-1979. Four separate litters were observed 1 year after release. Litter groups have ranged from 1 sow with 3 piglets and 2 sows with 2 piglets to 4 sows with 8 piglets. Farrowing has occured in all seasons as also reported by Conley et al. (1972) in Tennessee, Jones (1959) in North Carolina, and Pine and Gerdes (1973) in California.

Insufficient data have been collected to determine main farrowing periods, although evidence indicates a late spring-early summer peak. Of 23 litters reported by wildlife

personnel, 15 (65%) are believed to be late spring or summer births. Four (17%) are believed to have been farrowed in late summer or early fall months and 4 were known to occur during winter. There is a lack of striped piglet observations during late fall. Of 12 wild boar sightings (totalling 21 adults and 24 juveniles) by deer hunters in Spruce-Laurel in late November 1974, no juvenile pigs were described as striped (Igo 1975). Since European wild boar piglets normally maintain stripes for 2-4 months (Conley et al. 1972) these juveniles were probably born prior to October. Wild boars in Tennessee (Conley et al. 1972) had 2 main farrowing periods, one peaking in January, the other in May.

Range

Average dispersal of boars in 1971 was not determined. However, 3 months after stocking 3 separate adult males were reported 8.5 km, 6.4 km, and 6.4 km from the release site. Wild boars utilized 90 km^2 in 1972. Average dispersal from the release pens was 6.5 km (2.7-10.0 km) with hogs moving in directions away from permanent human habitation. In 1974, wild boars occupied 110 sq km. Boars were using 130 km^2 in 1975. Dispersal varied from 2.7-15.7 km, with an average of 7.2 km. Based on interviews with residents along highways adjacent to known boar range, the total area occupied by wild hogs has not exceeded the 1975 range. No confirmed crossings of these highways by wild hogs have occurred.

Additional Observations

Annual observations corroborate other findings on certain life history data. Seasonal habitat usage by wild hogs in West Virginia is similar to that found in Tennessee (Conley et al. 1972, Fox 1972). Boars utilized northerly-facing slopes, ridges, and drainages during spring and summer months and southerly exposures during the fall-winter period. As suggested by Conley et al. (1972), this is apparently correlated with food availability. Plant food items utilized by West Virginia boars are similar to those reported by Henry and Conley (1972) and Scott and Pelton (1975). A list of specific foods and details of seasonal habitat usage are presented by Igo (1973).

Minimum daily movements of 3 km for 2 separate adult males and 7 km for another adult hog were recorded in Spruce-Laurel (Igo 1973). Lewis' (1966) released pen-reared boars moved 4.2 km in a 24-hour period on 2 occasions. A recaptured adult female in California moved 3.5 km in 1 day (Pine and Gerdes 1973) and Matschke and Hardister (1966) reported a transplanted adult male traveling 7.2 km overnight. Details of daily activity, wallowing and bedding, and other behavior were reported by Igo (1973). This information also conformed closely with other researchers findings.

FUTURE MANAGEMENT

Wild hogs will be monitored for general status and dispersal using the method described by Igo (1975). Legislation was passed in 1977 allowing the West Virginia Department of Natural Resources to hold permit hunting seasons for wild boars when feasible. A 3-day season has been established for the first week of November 1979 with 200 permits issued. All participating hunters must report to check stations where interviews will be conducted for information on hogs and for comments on the boar program. Though the kill is not expected to be high, basic biological information (age, sex, condition, etc.) and parasite fauna will be collected from harvested hogs. The possibility of future stockings in other southwestern West Virginia sites will depend on an evaluation of biological and socio-economic benefits of the current release.

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