APPENDIX M

Specific Management Recommendations for Javelinas

The javelina, or collared peccary, evolved in South America and migrated north, arriving in Texas, New Mexico, and Arizona relatively recently (past several hundred years). Javelina bones are not found in archaeological sites in the United States, and early settlers made infrequent references to their occurrence. It is probable that the javelina expanded into south and west Texas simultaneously with the encroachment of brush and cacti into Texas' native grasslands.

Biology

Adult javelinas generally weigh 35 to 60 lbs., with the male being slightly heavier than the female. Behavior toward predators and humans suggest that javelinas can see fairly well up to about 75 yards. They rely heavily on their sense of smell, not only for foraging but also for avoidance of danger. Their primary activity periods are early morning and late evening. When temperatures are cool, the herds become more active throughout the day. Although somewhat active at night, their night-vision is believed to be only fair. Javelinas are extremely territorial, and the boundaries of the territory are marked by scent emitted from the conspicuous musk gland located on the animal's rump. Home ranges of adjacent javelina herds may overlap slightly, but the "common ground" is normally used by only one herd at a time. The average gestation period is about 145 days, considerably longer than the common pig (112 to 116 days). Litters range from one to five piglets, with an average litter size of two. The young are born throughout the year, with a peak occurring in early summer. Newborn javelinas weigh about one pound, and they continue to grow until they reach adult height in about 10 months. At this age, javelinas are reproductively mature. They are capable of breeding throughout the year, the only wild ungulate in the western hemisphere with a year-long breeding season. This long breeding season, early sexual maturity, and the ability to have two litters each year gives them the greatest reproductive potential of any North American big game animal.

Home Range

Herd territories may extend over 700 to 800 acres. A South Texas study found that size of territories was associated with brush density. Territories averaged 250 acres in dense brush, 400 acres in moderately dense brush, and 700 acres in relatively open brush. A study in New Mexico reported herd home ranges that ranged from 140 to 700

acres. In Arizona, size of territories was extremely variable, ranging from 250 to 1,150 acres. The reported mean home range for collared peccaries in Big Bend National Park was 533 acres. Recent research in the Davis Mountains indicated home ranges that varied between 400 and 600 acres.

Mortality

Winter snows, ice storms, and extremely cold weather can result in substantial mortality among javelinas. However, because their distribution is restricted to southern climes, they are seldom exposed to extended, severe winter weather. Of much greater significance to herd survival is habitat loss and habitat degradation (eg., herbicidal prickly pear control, mechanical brush clearing, etc.). Sport hunting is another source of mortality, but javelina hunting in west Texas seldom occurs at an intensity that will impact herd numbers. The primary predator of javelinas in west Texas is the mountain lion. Although limited in numbers and distribution, black bears are efficient predators of javelinas when the opportunity occurs. Coyotes and bobcats will occasionally prey on javelinas, although the usual targets are the young. However, adult javelinas are extremely protective, and preying on their young is a dangerous and probably infrequent undertaking for mid-size predators like coyotes and bobcats. Although not a frequent occurrence, golden eagles will sometimes prey on young javelinas.

Diet

Javelinas will consume a wide variety of forage types, including cacti, fruits, tubers, bulbs, beans, nuts, and forbs. A diet study in the Trans-Pecos indicated that lechuguilla was extremely important to javelinas in this region, representing as much as 50% of the diet in some seasons. Acorns were also very important on a seasonal basis (fall and early winter), providing a key source of energy. Other important foods were mesquite pods, sotol, woody plants (browse), and grasses. A minimal amount of animal matter was found in the diets, although worms and insects were taken on occasion. Probably the most important food item to the javelina in Texas and throughout its range is prickly pear (represents 30-80% of the annual diet). However, its importance does not stem from palatability or nutritional quality. In fact, prickly pear is somewhat deficient in protein, carbohydrates, and most minerals. It appears that the cacti's importance is associated with its water content, its availability, and the javelina's ability to survive on the plant until forage conditions improve. Prickly pear cladophylls (pads) consist of up to 90% water, and can easily provide the daily water needs of javelinas. Cactus plants are fairly abundant in most areas of the Trans-Pecos, and adequate quantities can be taken with a minimum of energy expenditure. Javelinas prefer quality forages such as forbs, bulbs, tender grass shoots, and fruits/mast from woody plants, and they can easily meet their nutritional requirements on a diet of these quality forages. However, in the arid conditions of the Trans-Pecos, quality forages are rarely abundant and are usually available (i.e., green) only for a brief period. This is why prickly pear is a critical component of javelina habitat in the desert southwest. Prickly pear and other cacti could be referred to as "emergency" foods, but this seems a misnomer in the Chihuahuan Desert where these forage emergencies are the prevailing situation rather

than the exception. Prickly pear becomes less important as a habitat component in areas with higher annual rainfall (eg., Edwards Plateau), where quality forages are more abundant and available for longer periods of time.

Water Requirements

Javelina water requirements are influenced by temperature, humidity, diet, and physiological state. They will use water if available, but its presence is not essential if succulent vegetation (i.e., green forbs, grass shoots, prickly pear, other cacti) is available. An adult javelina can meet its daily water requirements by consuming 3.5 lbs./day of green cactus in the summer and about 3 lbs./day of green cactus in the winter. Javelinas minimize water requirements in summer (i.e., water loss from thermoregulation) by seeking shade in dense woody cover.

Herd Management

As with any wildlife species, habitat quality is the overriding influence on the presence and productivity of javelina herds. For reasons described above, prickly pear, lechuguilla, sotol, and several species of cacti are important components of javelina habitat. Not only are they important as key forages, but they are the predominant source of water for javelinas, especially on ranges where other forms of water are absent. When controlling prickly pear with a herbicide such as picloram, leaving several clumps of untreated plants within key areas is important in maintaining healthy herds of javelinas. When moisture conditions are more favorable, forbs, grasses, and browse are important in boosting the nutritional plane of javelinas. Therefore, livestock grazing can have a significant impact on the condition and productivity of javelina herds. Sheep and goats may compete with javelinas for limited forages, and at heavy stocking rates or during drought, even cattle can compete for available forage.

Another critical habitat component is dense thickets of woody cover. Dense woody vegetation is important in providing shade and loafing areas in summer and protective cover from inclement winter weather. When implementing broad scale brush management programs, managers can inadvertently destroy prime javelina habitat by failing to identify and protect a few key areas of dense, protective cover for javelinas. A certain amount of brush is desirable for screening cover as javelinas move about and forage, but even more important for survival are the dense thickets used for escape cover, shade, and protection from winter storms.

The size of herd territories will depend on brush density and overall habitat quality. But given that most herds will range over about a mile, one watering site per 2,000-2,500 acres will allow each herd access to free-standing water (if water is a concern). Particularly in areas where water sources are absent and prickly pear and other cacti are in short supply, watering facilities will probably provide realistic benefits to javelina herds in the area.

Concerning the impact of predators on javelina numbers, once again the greatest factor

of influence is the quality of the habitat. If there is adequate screening cover, escape cover, and year-round nutrition to support good reproduction, the herd can sustain a reasonable amount of pressure from mountain lions, bobcats, and coyotes. The only time predators may present a problem is in the rare circumstance when predator numbers (especially lions) are abnormally high and habitat components are marginal for javelinas. A similar relationship exists for sport hunting as a potential threat to javelinas. The greater the habitat quality, the lesser the likelihood that hunting will impact javelina numbers. On ranches where javelinas are intensively hunted, it is recommended that herd numbers and average herd size be monitored annually to ensure that the population is not declining. Reproductive success will vary from year to year, depending on drought and resulting forage conditions; but a conservative harvest rate of 15% of the fall population will generally not impact herd numbers.