

## JAVELINA MANAGEMENT GUIDELINES

Procedure 1: To determine annual recruitment rates and herd size to note general conditions of javelina and their habitat.

- A. Field Operations personnel will conduct surveys in each management unit having huntable population of javelina.
1. Javelina surveys will be conducted between October 1 and March 15. When possible, weekends should be avoided for surveys when a javelina hunt is in progress, and an effort will be made to allow disturbed herds to regroup before classification counts are made.
  2. Javelina surveys may be conducted using several methods, depending on the habitat to be surveyed. Hunted areas should receive preference over areas where hunting is not allowed. Whenever possible, aerial surveys should be the primary survey protocol. Javelina will be classified during bighorn sheep and deer helicopter surveys. Additional fixed-wing surveys may be conducted. Survey routes will be designed to provide for annual consistency and to avoid duplicate observations.
    - a. Each aerially-surveyed hunt unit will contain at least 3 survey monitoring blocks that can be surveyed in about 30 minutes each. These blocks should be placed in areas mostly accessible to the hunting public. If a unit contains more than 1 major vegetation association, monitoring blocks should represent all major associations, unless surveying them is infeasible.
    - b. The entire unit may be surveyed using a grid and systematically sampled.
    - c. Fixed-wing surveys should be conducted in sparsely vegetated rolling hills or flats. Fixed-wing aerial surveys should be conducted in specific survey blocks similar to helicopter surveys.
  3. During ground surveys, the observer will attempt to classify the animals without disturbing them. Once the classification is complete, the herd should be deliberately disturbed (predator calls work well for this) and to verify count and classification. Foot, horseback, and vehicle surveys should be conducted along specific routes that remain consistent each year. The identification of observation points is recommended. If a unit contains more than 1 major vegetation association, ground routes should represent all major associations, unless surveying them is infeasible.

The number of animals in each herd will be determined and classified as adults, juveniles (less than 1/2 grown in body mass), and red piglets (pelage still red) will be recorded. Record the time, date, and location for each herd observed on Deer-Javelina Survey Record Form.

- B. Game Branch staff will assist Field Operations personnel to design and schedule surveys to sample javelina in each unit.
- C. Regional Game Specialists with Game Branch assistance will, with past years' survey information, determine desirable sample sizes to obtain average herd size confidence intervals of  $\pm 2$ . Where insufficient herds are tallied to obtain reliable estimates, additional survey effort may be expended or data may be pooled with adjacent units and areas having similar vegetation and hunt characteristics. The Wildlife Manager should enter survey data daily and cease surveys when desired confidence intervals are achieved.
- D. Wildlife Managers should maintain a survey data file for each management unit or hunt area. Data from various survey methods will be collected and maintained separately, but pooled to calculate ratios and confidence intervals.
- E. Wildlife Managers should annually maintain a map(s) of their district, with survey routes and all javelina observations plotted. Observations, recorded as waypoints with associated coordinates, should be numbered and correspond to the classifications on the survey data sheet. This information should be maintained in both the Wildlife Manager's and the Regional Game Specialist's files.

Procedure 2: To collect data on the age classes and condition of harvested javelina.

- A. When the need for biological data is justified, hunt check stations will be established to sample selected populations. Station locations will be determined by the Big Game Supervisor and Regional Game Specialist. Station operation will be the responsibility of the Regional Game Specialist. The Game Branch will provide assistance if needed.
- B. Age of hunter-harvested javelina should be determined in the field during routine patrol activities. Field ages will also be summarized on the Javelina Management Summary Form.
- C. Hunt questionnaires will be sent to javelina hunt permittees within two weeks of the last day of the season. The hunt questionnaire will be designed to provide statistically valid hunt success data on a hunt basis (i.e., statewide or regional data will be generated for statewide or regional archery hunts; data on individual units will be generated for unit hunts). Exceptions may be when harvest data and population characteristics suggest that javelina populations in a particular unit or group of units are below the desired level. More intensive sampling may be prescribed for these units. Information, including confidence intervals for hunt data, will be tabulated, summarized, and sent to the Regional Game Specialists within 60 days of the initial mailing. The collection and distribution of these data will be the responsibility of the Game Branch.

Procedure 3: To use survey and hunt data to determine a prescribed annual harvest of javelina in each management unit or hunt area.

- A. Annual survey data will be summarized by hunt area on Javelina Management Summary Form. This form will compare the number of herds observed, the mean herd size (excluding singles), and the total juvenile (including reds): adult ratio of animals observed with those of previous years.
- B. The Wildlife Manager and respective Regional Game Specialist will analyze survey and hunt data and to determine whether a huntable javelina population exists in each unit and make recommendations for hunts and permit numbers. The Javelina Management Summary Form will be forwarded to the Game Branch in accordance with the Hunt Recommendation Schedule.

Those units or areas where fewer than 50 animals are harvested may be recommended for inclusion with 1 or more adjacent units. Exceptions are units or sub-units that need closer management than the regular hunt guidelines can accommodate.

- D. Javelina permit numbers will be based on population characteristics. Other factors to consider will be unit characteristics, herds and javelina seen per hour of helicopter, population estimates, and demand rates for various hunt types. A mean annual harvest of no more than 20% of the estimated population should be the harvest goal.

Permit modifications should be made in accordance with the following table:

Permits change indicated	Decrease	Stay the Same	Increase
Average Herd Size	Below 7	7 to 10	Above 10
Average Adults per Herd	Below 6	6 to 8	Above 8
Juveniles per 100 Adults	Below 20	20 to 30	Above 30

Procedure 4: To index javelina population levels and annually estimate the size of particular populations.

- A. Population estimates are made by applying average herd size to the estimated number of herds in the unit, sightability indices, or limited computer modeling. We recognize the need for additional advances in survey methodology that will provide consistent population estimates
- B. Survey effort will be designed to randomly or systematically sample survey areas. Population estimates and indices (e.g., average adults/herd, groups/hour, animals/hour) will be derived through the use of annual surveys. Herd size and young survival data should be compared with climatic data and correlation coefficients for these variables.

Procedure 5: Manage and enhance habitats through partnerships with public agencies, property owners and lessees, and wildlife conservation organizations.

- A. Protect and maintain current water sources. Where water is lacking and the distribution and abundance of javelina can be influenced, develop new water sources.
- B. Work in cooperation with land management agencies to assure forage use levels are appropriate and provide for the habitat structure and nutritional needs of javelina.
- C. Work with land management agencies and private landowners to protect and enhance key javelina habitat. Encourage the maintenance of migration corridors or other key habitats, including during planning for roadways and developments, as well as for standard land management activities.