

of the current quality of kangaroo management in Australia. These comments (A–M) are treated together in this assessment because they are closely related and actually pertain to a larger issue, which is “How much management is sufficient?” The comments and Service responses are listed below for comments A–M and this is followed by a discussion of the “sufficiency of management” question.

A. *Comment:* Survey methods, especially in Queensland, are unreliable. *Response:* Nichols *et al.* (1990) stated that “Australian biologists have been leaders in the development of aerial survey methods for estimating animal population size. Current surveys are very extensive, properly standardized and well thought out. Some additional work needs to be done on the estimation of visibility correction factors, but such work is well underway. Current research indicates that previously-used correction factors may be too small. Published estimates of kangaroo population size thus are based on sound methodology but are probably too small.” Additional studies have been conducted since 1990. Queensland is especially concerned about methods to more reliably estimate animal numbers in woodland habitats. Queensland has annually accomplished fixed-wing aerial surveys from 1984 to 1992, and helicopter surveys since 1991. Queensland plans to further review the results of population surveys using fixed-wing aircraft and helicopters to establish revised correction factors for use in surveys of woodland habitats.

B. *Comment:* The Commonwealth and State governments have failed to implement measures to make kangaroo plans adequate to protect kangaroos. *Response:* It is unclear whether this comment pertains to the apparent contradiction wherein different domestic statutes provide both protective status to the species and allow a commercial harvest of the species or to some perceived inadequacy in the kangaroo management plans. Any conflict in domestic legislation is an Australian domestic matter. The Service has found that the kangaroo management plans developed by the States and agreed to by the Commonwealth are sufficient to allow the species to be delisted.

C. *Comment:* The commercial slaughter of kangaroos constitutes a very real threat to the survival of the species. *Response:* For the reasons stated above, and later in this final rule, the Service has found that the current commercial harvest of these managed kangaroo species does not threaten the survival of these species in mainland Australia at

present nor is it likely to in the foreseeable future.

D. *Comment:* The kangaroo slaughter is unnecessary. *Response:* The necessity and desirability of commercially harvesting kangaroos is an Australian domestic matter. The Service’s assessment is only that the present managed harvest does not cause the Service to conclude that the kangaroo populations should be listed as threatened.

E. *Comment:* The development of a meat market will increase demands on kangaroo populations. *Response:* The decision to seek domestic and international markets for kangaroo meat is an Australian domestic issue. The Service believes that the present management is sufficient and notes that extensive non-use of kangaroo protein accompanies a skins-only harvest, and that a well run meat industry can more fully and more efficiently use the current harvest.

F. *Comment:* The adoption of a sustained use management principle for a protected species was accomplished without a public debate. *Response:* The Service considers this to be an Australian domestic matter and not a factor in making a listing decision under the Act.

G. *Comment:* The “threatened” listing was valuable because it allowed the Service to act as an international watchdog on the kangaroo industry. *Response:* The Service promotes the international conservation of species and the international enhancement of biodiversity. The Service is obligated to properly classify these species based on the criteria stipulated in the Act.

H. *Comment:* Kangaroos routinely carry such a high parasite load that they are unfit for human consumption. *Response:* It is the responsibility of the Commonwealth government to assure the citizens of Australia and the world, if such exports are allowed, about the quality of any kangaroo meat product. The Service notes this is clearly not an issue to consider when making an evaluation under the Act.

I. *Comment:* Tags placed on carcasses and skins are not species specific. *Response:* The Service agrees that species specific kangaroo tags would likely allow the States to have a better control over the kangaroo harvest and over the marketing of kangaroo products. The Service notes that the kangaroo harvest is sufficiently monitored in other ways such as the assessment of shooter’s records, dealer’s records, sex-age composition of the kill and descriptors of other biological attributes. These records help ensure

that the kangaroo harvest is adequately managed.

J. *Comment:* Customs officers do not inspect all consignments of kangaroo products prior to their export. *Response:* The kangaroo harvest and exports are thoroughly reported and State and Federal enforcement personnel have authority for search and seizures that the Service believes will adequately control any significant illegal activities.

K. *Comment:* Harvest quotas do not include animals killed for the domestic market or for nuisance purposes. *Response:* The Service agrees that it would be beneficial to management if all kangaroos killed were tagged and reported. This effort would benefit the estimate of total harvest and would help curtail any movement of untagged animals into commerce. The Service notes that harvest quotas are based on estimates of the living population so that the establishment of a harvest quota is a function of all sources of mortality that have impacted kangaroo populations up to the time of quota determination. The Service further notes that kangaroos killed for the domestic market are part of the kill regulated by the harvest quotas but that kangaroos killed for pest control are outside the harvest quota. The kill for pest control, however, is limited. For example, the number of kangaroos killed for damage mitigation purposes is believed to be less than 1 percent of the population.

L. *Comment:* There is inadequate enforcement of animal welfare requirements. *Response:* The Service agrees that any wildlife harvest should be conducted in as humane a manner as is possible, but this is not a criterion to be considered in making listing determinations under the Act.

M. *Comment:* The State and Commonwealth governments have inadequate resources for kangaroo management. *Response:* The Service finds that resources available to conservation agencies in Australia are sufficient so these three species of kangaroos are adequately protected under present management.

A decision to list or delist species under the Act often requires a decision about the “sufficiency of management.” No government or agency provides perfect management but many governments and agencies provide sufficient management so individual wildlife species can be used in a sustainable manner. A reasonable standard for the Service to use to determine sufficiency of management in any country is to compare the management of the foreign species with the management of a comparable species within the United States. The