Peer review of U.S. Fish and Wildlife Service foreign species status review for the Scarlet-chested Parrot *Neophema splendida*
Peer review by Dr Rohan Clarke

This is a well written and well referenced document. Comments with some suggested responses follow.

Species description: suggest replace the term 'immature' with the term 'juvenile' as this is more technically accurate. Juvenile plumage is the first feathered plumage (ie not down) gained after hatching. Immature plumage is generally considered to represent all plumages between full juvenile plumage and full adult plumage. From an identification standpoint it is the juvenile plumage that is of interest here.

Habitat/Life History: page 5. Recent fire is not a climatic condition so suggest "…be in response to favorable climatic conditions (including rainfall and recent fire) and the resultant availability of food resources" be rendered as "…be in response to favorable climatic conditions (including rainfall), appropriate fire age classes of vegetation communities and the resultant availability of food resources"

Page 6. Note that if the species only raises one clutch per year then this is inconsistent with an irruptive population ecology as it would take years to respond to short-term boom conditions (which in arid lands typically only span one or two years). Consider adding "consistent with an irruptive population ecology" after "…may be capable of producing two broods under good conditions"

Current Range/Distribution:
western Australia = Western Australia as it is referring to the state

At the very end of this section it may be worth adding that there are "No recent (since 1995) confirmed records from the state of Victoria."

Factor A:
"However, one study concluded that, for unlike the case for mammals, altered fire regimes do not seem to have had a direct impact for avian species using semi-arid or arid landscapes (Reid and Fleming, 1992, p. 80)." A growing body of literature dealing explicitly with threatened mallee birds (the habitat occupied by Scarlet-chested Parrots in a large portion of the species range) demonstrates most birds are sensitive to altered fire regimes. It seems inappropriate to highlight a now dated piece of evidence without qualification that this view is now not widely supported in the literature.

Some examples follow:

Brown, S., Clarke, M.F. & Clarke, R.H. (2009) Fire is a Key Element in the Landscape-scale Habitat Requirements and Global Population Status of a Threatened Bird: the Mallee Emu-wren (*Stipiturus mallee*). *Biological Conservation* **142**, 432-445.

Clarke, R.H., Boulton, R.L. and Clarke, M.F. (2005) Estimating population size of the black-eared miner, with an assessment of landscape-scale habitat requirements. *Pacific Conservation Biology* **11**, 174-188.

Taylor R.S., Watson S.J., Nimmo D.G., Kelly L.T., Bennett A.F., & Clarke M.F. (2012) Landscape-scale effects of fire on bird assemblages: does pyrodiversity beget biodiversity? *Diversity and Distributions*, **18**, 519–529.

Page 12: "A recent study found that threatened species used for pets tend to belong to the lower categories of endangerment (Olah *et al.* 2016, p. 219)." This and the subsequent sentence imply that the Scarlet-chested Parrot is threatened but recent Australian reviews have concluded it is not threatened.

Page 13: orange-belied parrot = orange-bellied parrot

Page 15: "However, others have noted that the scarlet-chested Bourke's parrot co-occur over most of the scarlet-parrot's range (BLI 2016 unpaginated), suggesting that competition may be less of a factor." Typos - should read "However, others have noted that the scarlet-chested parrot and the Bourke's parrot co-occur over most of the scarlet-chested parrot's range (BLI 2016 unpaginated), suggesting that competition may be less of a factor."

Climate change Pages 18-19. Much of the referencing in this section is relatively dated (1990s and early 2000s) given the impact of climate change is a fast moving field with considerable recent focus. The following two papers explicitly look at the capacity of woodland birds (in dry woodlands and riparian areas in south-eastern Australia) to resist the pressures of drought and then recover once drought conditions are lifted. In combination these two papers suggest a worrying trend for long term decline in the face of more frequent and extended droughts in southern Australia as predicted by recent climate modelling (IPCC 2013). On this basis arid land species that occupy southern Australian range distributions and are characterised as 'irruptive' may be particularly susceptible to more frequent and extended droughts.

Selwood, K., Clarke, R.H., Cunningham, S.C., Lada, H., McGeoch, M. and Mac Nally, R. (2015). A bust but no boom: Responses of floodplain bird assemblages during and after prolonged drought. Journal of Animal Ecology **84**: 1700-1710. doi 10.1111/1365-2656.12424

Bennett, J.M., Nimmo D.G., Clarke, R.H., Thomson, J.R., Cheers, G., Horrocks, G.F.B., Hall, M., Radford, J.Q., Bennett, A.F. & Mac Nally, R. (2014) Resistance and resilience: Can the abrupt end of extreme drought reverse avifaunal collapse? Diversity and Distributions **20**: 1321–1332 doi: 10.1111/ddi.12230

Also:

IPCC (2013) Climate change 2013: the physical science basis. Working group I contribution to the fifth assessment report of the intergovernmental panel on climate change, summary for policymakers, IPCC (ed. by T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley), pp. 1535. Cambridge University Press, Cambridge, UK and New York, NY, USA.