

Should you capitalize Copperbelly?

Traditionally, copperbelly macrohabitat has been described as shallow, quiescent swamps and woodland pools (Conant 1934, Diener 1957, Minton 2001). More recent studies conducted on populations in the southern part of this species' range have been more specific on the structure of the macrohabitat the copperbelly is typically associated with. Using radio-telemetry, Coppola (1999), found copperbellies in southern Indiana and northwestern Kentucky to be correlated with shrub-scrub wetlands dominated by buttonbush (*Cephalanthus occidentalis*), palustrine forested wetlands associated with shrub-scrub wetlands, and emergent aquatic habitats. Likewise, Hyslop (2001), reported copperbellies to show a preference for shrub-scrub and forested wetlands. These general trends of macrohabitat use were also reported by Laurent (2000) who used survey and mark/recapture techniques to build a predictive model of copperbelly occurrence based on habitat context. One hypothesis for the copperbelly's preference for ephemeral woodland and shrubby pools may relate to its diet, which consists almost entirely of anurans (Diener 1957, Wright and Wright 1957, Mushinsky and Hebrard 1977, Roe et al. in press). Anuran species richness is often greater in ephemeral wetlands due a lack of predation by fish (Bradford 1989, Hecnar and M'Closkey 1997, Snodgrass et al. 1996). This is principally due to the sporadic drying of such wetlands preventing fish communities from establishing (Snodgrass et al. 1996). Habitat use by predatory species can be strongly linked the habitat requirements of its prey (Reinert 1993).

Among water snakes the copperbelly is also noted as one of the most terrestrial species (Diener 1957, Wright and Wright 1957, Conant and Collins 1991, Kingsbury 1996, Minton 2001). Indeed, in a small study conducted in the northern part of the species range, Kingsbury (1996) reported that snakes may spend the majority of the

active season in terrestrial habitats. Several snakes in his investigation had shifted the majority of their habitat use upland as early as mid-May; <sup>with</sup> one copperbelly ~~was~~ located 1km away from open water. Copperbellies in the southern region of the snakes range have not exhibited such a high degree of upland use. Coppola (1999) and Hyslop (2001) both reported uplands to be the least preferred macrohabitats in their studies.

This study was the first large scale telemetry study aimed at identifying macrohabitat use, among other ecological facets, of the copperbelly in the northern extent of its range. By comparing macrohabitat use between the copperbelly and the common, sympatric Northern Water Snake (Nerodia s. sipedon), the first goal of the study was to uncover proximal factors, related to habitat use within the landscape, that may be causing the decline of the former. More specifically, the question is, "what differences in habitat use between these two species allow the northern to exist in relative abundance while putting the copperbelly at risk of extirpation?"

The second goal of the study was to compare and contrast macrohabitat use between distinctly separate copperbelly populations at opposite ends the species range. ~~From~~ <sup>†</sup> previous studies, there exists evidence that habitat use differs significantly. To reiterate, the most visible difference in habitat use being a greater reliance upon upland habitats by copperbellies in the north (Kingsbury 1996, Coppola 1999, Laurent 2000, Hyslop 2001). Knowledge of these differences in habitat use between population centers may require current conservation strategies to be rethought in order to adequately provide for copperbellies in the north. Thus, the final goal of this study was to amend current conservation strategies for this species in order to specifically address ~~x~~ and provide for

† Because it's the first time you're using the genus-species name, should you spell it all the way out?