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COPPER-BELLIED WATERSNAKES – COPING IN A MAN'S WORLD

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Populations of the Copper-bellied Watersnake (*Nerodia erythrogaster neglecta*) are threatened with extirpation throughout much of their range, especially the northern populations. These declines are the result of habitat loss and degradation from agriculture, surface mining and the draining of wetlands within the large wetland complexes they need to persist. Knowing the ecosystem requirements of copperbellies and how anthropogenic alterations impact their behavior are critical for producing effective management guidelines and recovery strategies. To examine the response of copperbellies to anthropogenic impacts, we tracked individuals over two years using radio-telemetry at Muscatatuck National Wildlife Refuge. While Muscatatuck is large (several square miles), it has been extensively modified by roads, agriculture, reservoirs, levees and development, and thus provides an environment to examine anthropogenic impacts. Movement patterns and habitat preferences were analyzed and, consistent with previous studies, copper-bellies at Muscatatuck prefer shallow water areas and shorelines near or within bottomland forests. Agricultural lands were strictly avoided, along with deep water and adjacent shorelines. Conservation strategies for copperbellies would include maintaining, creating and protecting shallow wetlands with partial emergent vegetation, shrub cover and surrounding bottomland forests. Elimination of agriculture in lowland areas with drainage tile removal would allow flood adapted forest to reestablish and create new habitat and migration corridors. Also, when lowland development is unavoidable, maintaining forest around remaining wetlands is critical. Several snakes utilized anthropogenic edge habitats for thermoregulation and refuge so long as the adjacent forested wetlands remained intact. The fact that copperbellies persist at Muscatatuck in apparently high numbers suggests that pristine habitat is not required, provided that the remaining landscape is both appropriate and extensive.