

BUTTERFLY SOCIAL CLUBS

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Fig. 1. Temperate butterfly mud-puddlers: tiger swallowtails, *Papilio (Pterourus) glaucus* Linnaeus, plus one spicebush swallowtail, *Papilio (Pterourus) troilus* Linnaeus, both Papilionidae, and the small blues called spring azures, *Celastrina ladon* (Cramer), family Lycaenidae, puddling on a U.S. Forest Service road, Coweeta Hydrologic Laboratory, Otto, North Carolina, August 1996.

Many diverse species of butterflies engage in a characteristic behavior that is commonly termed "puddling" and defined as a type of social behavior in which assorted butterflies, usually males, congregate at a damp site, often a mud puddle or stream bank. The butterflies siphon up water solutions rich in nitrogen compounds, salts and trace minerals that have become concentrated from seepage or spillage. The water is rapidly excreted, whereas the other chemicals are retained and utilized in the production of pheromones

and sperm. Entomologists theorize that females can secure all components vital for egg production from more typical food sources such as flower nectars, fruit juices and other plant secretions. Lepidopterists often take advantage of this phenomenon by artificially "baiting" the ground with a variety of concoctions: urine, brine, putrefied fish "soup" and fermented plant juices. Although puddling occurs most commonly within tropical habitats, it does also exist throughout temperate zones.