



***Physa natricina* Taylor 1988, junior synonym of *Physa acuta* Draparnaud, 1805 (Pulmonata: Physidae)**

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Abstract

Physa natricina Taylor, 1988 is reported as a narrow range endemic species from the Snake River in Idaho, USA and is currently protected under the federal Endangered Species Act. We examined all available type material as well as more than 1,500 specimens of *Physa* collected from the Snake River and adjacent areas over the past twelve years and compared them to the original descriptions and the type material. No material collected from the Snake River, nor from the paratype series, could be confidently ascribed to *P. natricina* using both the internal and external morphological characters defined in the original description, nor by direct comparison to the holotype. Furthermore, the holotype and paratypes all have internal and external morphology that is accommodated within the natural range of variation of the polymorphic *Physa acuta* Draparnaud, 1805. Therefore *P. natricina* is conspecific with *P. acuta*, a common, widespread species.

Key words: Morphological species concept, Snake River, Idaho, endangered species, conservation, mollusks, Gastropoda, freshwater snails

Introduction

Physidae is one of the most common and widely distributed families of pulmonate gastropods in the world (Burch 1989; Dillon 2000; Dillon *et al.* 2002; Taylor 2003). Recent studies involving sequence data, isozyme data, behavior and no choice breeding experiments (Dillon *et al.* 2002; Wethington & Guralnick 2004; Wethington 2004; Dillon & Wethington 2004; Dillon *et al.* 2005; Wethington & Lydeard 2007) have revealed that the family is not as species rich as previously reported (Te 1975; Te 1978; Te 1980; Burch 1982; Burch & Tottenham 1980; Turgeon *et al.* 1998; Taylor 2003), but is in reality composed of a few, phenotypically plastic species (Crowl & Covich 1990; Covich *et al.* 1994; DeWitt 1998; DeWitt *et al.* 1999; DeWitt *et al.* 2000; Burnside 1998; Britton & McMahon 2004).

Recently it has been demonstrated that two physid species believed to be rare, threatened or endangered are not genetically or morphologically separable from *P. gyrina* Say, 1821 (Taylor 2003; Wethington & Guralnick 2004). However, other narrow range endemics such as *P. zionis* Pilsbry, 1926, long been recognized as morphologically distinct (Chamberlain & Jones 1929; Te 1975; Te 1978; Te 1980; Burch 1982; Burch & Tottenham 1980; Taylor 2003), have been shown to be genetically unique (Wethington & Guralnick 2004; Wethington 2004; Wethington & Lydeard 2007). Here, we examine the validity of *Physa natricina* Taylor, 1988 using morphological methods.

Physa natricina was described as a narrow range, endemic species from recent material collected from Idaho and from fossil material collected from Idaho, Utah and Nevada (Taylor 1988). Recent material came