**Fundamental niche unfilling and potential invasion risk of the slider turtle *Trachemys scripta***

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Supplemental Tables S2 – S4

**Table S1.** Literature review from where information about occurrence records, physiological optimums and tolerance limits for *Trachemys scripta* was obtained. Complete references are listed at the bottom.

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| --- | --- | --- |
| **Title** | **Year** | **Ref.** |
| The growth of the Slider turtle, *Pseudemys scripta elegans.* | 1946 | 1 |
| Acute and chronic temperature effects on cardiovascular regulation in the red‑eared slider (*Trachemys scripta*). | 2015 | 2 |
| Varying Hydric Conditions during Incubation Influence Egg Water Exchange and Hatchling Phenotype in the Red‐Eared Slider Turtle. | 2008 | 3 |
| Anoxia tolerance and freeze tolerance in hatchling turtles. | 2005 | 4 |
| *Trachemys scripta* (Slider terrapin). | 2012 | 5 |
| An experimental study of the influence of embryonic water availability, body size, and clutch on survivorship of neonatal red-eared sliders, *Trachemys scripta elegans*. | 2002 | 6 |
| Basking Behavior of the Turtle *Pseudemys scripta*: Effects of Digestive State, Acclimation Temperature, Sex, and Season. | 1988 | 7 |
| Dietary and Habitat Shift with Size of Red-Eared Turtles (*Pseudemys scripta*) in a Southern Louisiana Population. | 1983 | 8 |
| Critical Thermal Maxima in Turtles. | 1966 | 9 |
| Experimental Test of the Effects of Fluctuating Incubation Temperatures on Hatchling Phenotype. | 2007 | 10 |
| Living at Extremes: Development at the Edges of Viable Temperature under Constant and Fluctuating Conditions. | 2009 | 11 |
| Acute and persistent effects of pre- and posthatching thermal environments on growth and metabolism in the red-eared slider turtle, *Trachemys scripta elegans*. | 2012 | 12 |
| Preferred body temperatures in five neartic freshwater turtles: a preliminary study. | 1993 | 13 |
| Cold Tolerance in Hatchling Slider Turtles (*Trachemys scripta*). | 1997 | 14 |
| Temperature, phenotype, and the evolution of temperature-dependent sex determination: how do natural incubations compare to laboratory incubations? | 2010 | 15 |
| Immigration and Dispersal of Slider Turtles *Pseudemys scripta* in Mississippi Farm Ponds. | 1984 | 16 |
| Basking Behavior of Emydid Turtles (*Chysemys picta, Graptemys geographica*, and *Trachemys scripta*) in an Urban Landscape. | 2009 | 17 |
| Effects of body temperature on righting performance of native and invasive freshwater turtles: Consequences for competition. | 2012 | 18 |
| Feeding status and basking requirements of freshwater turtles in an invasion context. | 2012 | 19 |
| Translating natural history into geographic space: a macroecological perspective on the North American Slider, *Trachemys scripta* (Reptilia, Cryptodira, Emydidae). | 2009 | 20 |
| Sexual and Seasonal Differences in Behavior of *Trachemys scripta* (Testudines: Emydidae). | 1999 | 21 |
| Response of Red-Eared Slider, *Trachemys scripta elegans*, Eggs to Slightly Differing Water Potentials. | 1998 | 22 |
| Year-to-Year Variation in Growth in the Red-Eared Turtle, *Trachemys scripta elegans*. | 1995 | 23 |
| Natural history notes on nesting, nests, and hatchling emergence in the red-eared slider turtle, *Trachemys scripta elegans*, in west central Illinois. | 1997 | 24 |
| Annual and Local Variation in Reproduction in the Red-Eared Slider, *Trachemys scripta elegans*. | 1998 | 25 |
| Temperature-Dependent Sex Determination in the Red-Eared Slider Turtle, *Trachemys scripta*. | 1998 | 26 |
| Linking climate and physiology at the population level for a key life-history stage of turtles. | 2005 | 27 |
| Temperature, Genes, and Sex: a Comparative View of Sex Determination in *Trachemys scripta* and *Mus musculus*. | 2005 | 28 |

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**Table S2.** Comparison between climatic covariance matrices for *Trachemys scripta*, showing their corresponding Akaike information criterion (AIC) values. (Step-up and model building approaches).

|  |  |  |
| --- | --- | --- |
| **Model** | | **AIC** |
| **higher** | **lower** |
| Equality | Proportional | 6634.758 |
| Proportional | CPC | 2443.042 |
| CPC | CPC(4) | 1710.512 |
| CPC(4) | CPC(3) | 1587.103 |
| CPC(3) | CPC(2) | 1509.213 |
| CPC(2) | CPC(1) | 1205.078 |
| CPC(1) | Unrelated | 732.403 |
| Unrelated | --- | 42.000 |

**Table S3.** Contribution of the evaluated variables to the total hypervolume differences between *Trachemys scripta* native and non-native niches. The importance score reported is the ratio of the n-dimensional hypervolume relative to each of the n-1 dimensional hypervolumes, where larger values indicate that a variable contributes proportionally more to the overall volume.

|  |  |  |
| --- | --- | --- |
| **Variable** | **Native occupied niche** | **Non-native occupied niche** |
| **bio01** | 0.9686791 | 0.9576779 |
| **bio10** | 1.1684712 | 1.1302481 |
| **bio11** | 1.0670855 | 0.992571 |
| **bio12** | 1.1333105 | 1.2999334 |
| **bio14** | 1.152466 | 1.1045099 |
| **radAnual** | 1.1497316 | 1.110255 |