

**Figure S2**. a) Relationship between energy allocation to female gonad development and vitellogenin computed from field estimates of vitellogenin concentrations and gonadosomatic index in pre-spawning female shovelnose sturgeon reported in Wildhaber et al. (2007); and b) simulation scenarios tested for the maternal investment in egg production (energetic perturbation). In a, Stage I, II, III, IV, and V represent immature, developing, vitellogenesis, pre-spawning, spawning, and spent (post-spawning) of the female gonad development (Wildhaber et al. 2007). In b, the baseline relationship is based on data reported in Wildhaber et al. (2007).

**Reference**

Wildhaber, M.L., Papoulias, D.M., DeLonay, A.J., Tillitt, D.E., Bryan, J.L. & Annis, M.L. (2007) Physical and hormonal examination of Missouri River shovelnose sturgeon reproductive stage: a reference guide. *Journal of Applied Ichthyology,* **23,** 382-401.