Title: Effect of Nile tilapia (*Oreochromis niloticus*) on the ecosystem of aquaculture ponds, and its significance to the trophic cascade hypothesis

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Abstract: The trophic cascade hypothesis holds that an increase in fish biomass causes a decline in food organisms of the fish, which cascades down to regulate lower trophic levels by altered consumptive demands. This hypothesis was evaluated by stocking Nile tilapia (*Oreochromis niloticus*) at densities of 0, 1, 2, or 3 fish/m³ in triplicated 220-m³ ponds near Bangkok, Thailand. All ponds were fertilized with 500 kg chicken manure·ha⁻¹·wk⁻¹ (sic). We measured phosphorus, nitrogen, chlorophyll *a*, primary productivity, zooplankton abundance, and fish yield in all ponds. Increased stocking density resulted in decreased adult fish growth but similar yields among the three density treatments. Regressions relating the abundance of each trophic level to the next higher trophic level were either positive or nonsignificant, which is contrary to trophic cascade predictions. Zooplankton became significantly more dense over time in fishless ponds than the other three treatments, but no other trophic level differed among treatments. These results indicate that presence of fish had a significant effect on zooplankton in ponds, but biomass of fish or abundance of zooplankton did not significantly affect other trophic levels.

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