High Temperatures causing early metamorphosis in spadefoot toad species

Background
Pond drying due to evaporation can alter the developmental plasticity in the New Mexico Spadefoot Toad (Spea multiplicata). This frog species, native to the western U.S., adapts to drying ponds via accelerated metamorphosis. This hastened metamorphosis induces harmful phenotypes in the adult frogs, as it requires significant metabolic energy.

What's the Harm?
The increase in ROS and alteration in hormone levels in juvenile frogs due to accelerated metamorphosis results in adult frogs with smaller body sizes, intestinal defects and dietary changes, and delayed sexual maturation and gamete production. This can lead to shorter adulthood times in adult frogs, as well as altered trophic levels and changes in nutrient cycling.

What actions can we take?
Reduction in habitat fragmentation can reduce the harmful phenotypes afflicted by pond drying. Efforts for limiting the habitat loss, including introduction of trees and shrubs into the area, reduce evaporative effects contributing to pond dryness, thereby decreasing the likelihood for juvenile Spadefoot frogs to enter metamorphosis prematurely.
References: