A better way to grow

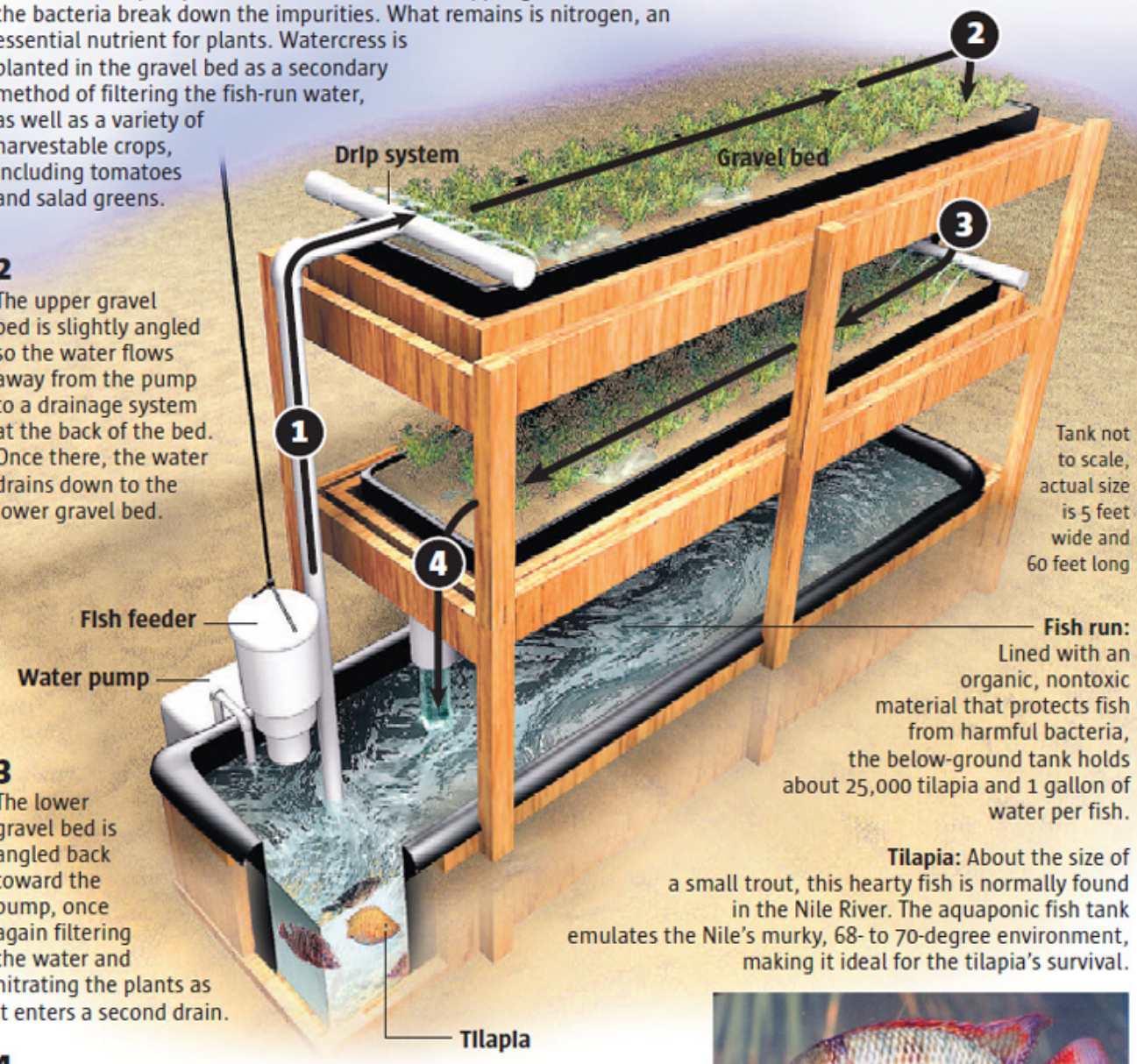
Aquaponics uses a recirculating process to grow and harvest plants, and farm fish. Fish waste works with the beneficial bacteria in gravel and plants, creating a recyclable, concentrated compost.

1
Wastewater is pumped from the fish run to the upper gravel bed, where the bacteria break down the impurities. What remains is nitrogen, an essential nutrient for plants. Watercress is planted in the gravel bed as a secondary method of filtering the fish-run water, as well as a variety of harvestable crops, including tomatoes and salad greens.

2
The upper gravel bed is slightly angled so the water flows away from the pump to a drainage system at the back of the bed. Once there, the water drains down to the lower gravel bed.

3
The lower gravel bed is angled back toward the pump, once again filtering the water and nitrating the plants as it enters a second drain.

4
The filtered water drains from the lower growing bed back into the fish run, and the cycle begins anew. Every nine months, the fish (tilapia and more recently yellow perch) are ready to be harvested.



Tank not to scale, actual size is 5 feet wide and 60 feet long

Fish run: Lined with an organic, nontoxic material that protects fish from harmful bacteria, the below-ground tank holds about 25,000 tilapia and 1 gallon of water per fish.

Tilapia: About the size of a small trout, this hearty fish is normally found in the Nile River. The aquaponic fish tank emulates the Nile's murky, 68- to 70-degree environment, making it ideal for the tilapia's survival.

Associated Press photo, Moapa Valley National Wildlife Refuge

Additional text by Colleen O'Connor, The Denver Post

Source: Paul Tamburello, founder Urban Organics, Growing Power Inc.

Jonathan Moreno, The Denver Post

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