

A Beginner's Guide to Garden Ponds





College of Agriculture,
Food and Environment
Cooperative Extension Service

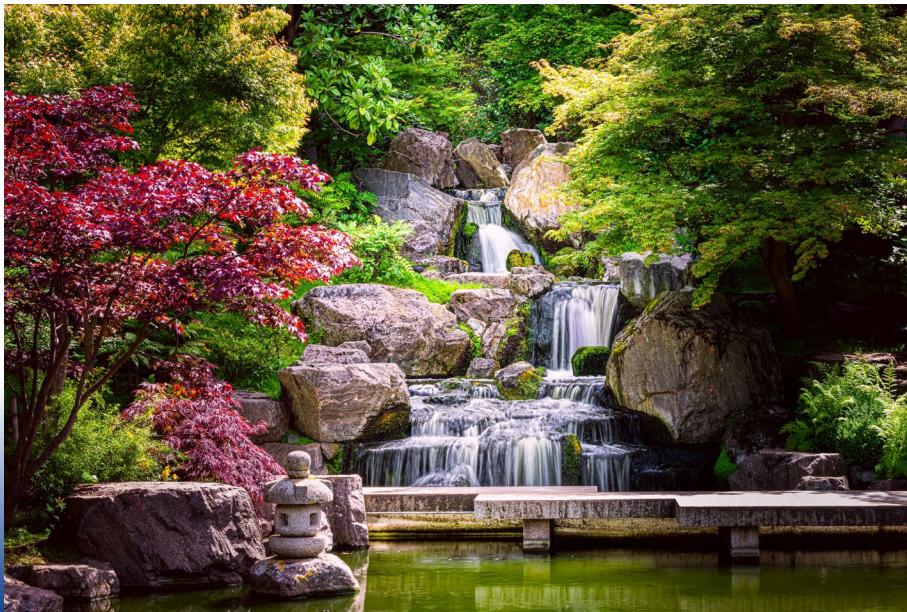
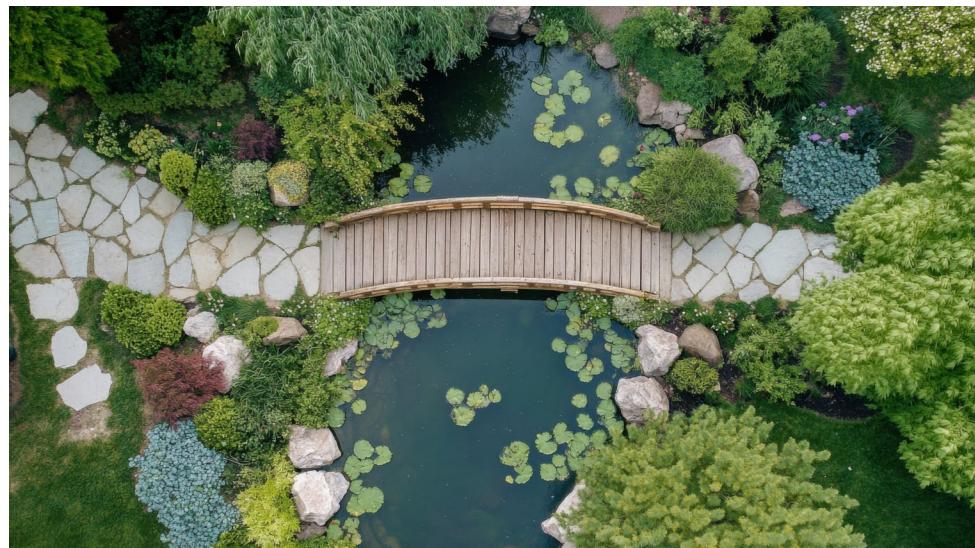
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Dream VS Reality



Planning: Site Selection

- Near a water source.
- Near an electrical outlet.
- Underground lines?
- Any city limitations?
 - Some require anything deeper than 18" be enclosed by fence.



Planning: Site Selection

- Avoid planting near large trees.
- Roots damage liner.
- Leaf cleanup.



Planning: Site Selection



- Full sun promotes algae growth.
 - If in sun, cover water with floating plants.
- Filtered light or half sun/half shade is ideal.

Planning: Size

- Water Depth: 1.5-2' minimum for goldfish to overwinter.
- Deeper than 3' may be hard to maintain.



Liner Choice



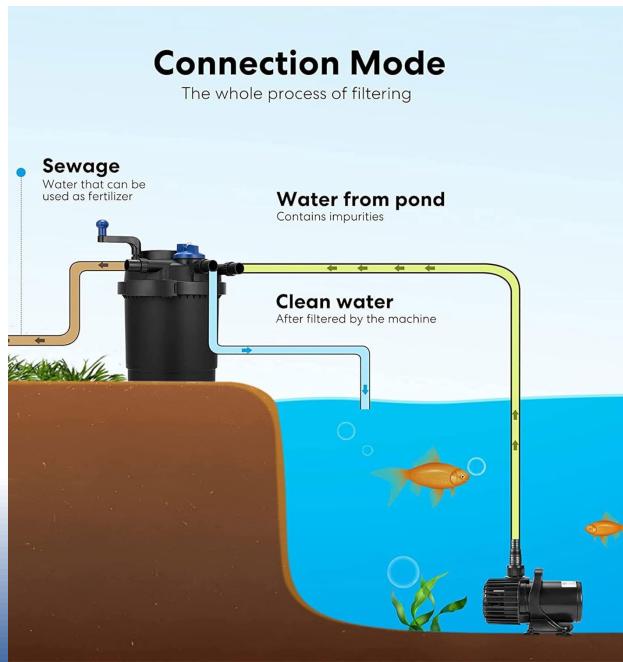
Liners

- Don't try to save \$ on liners.
- Felt underlayment (optional?)
 - Carpet?
- Liner: 45mil, EPDM material.



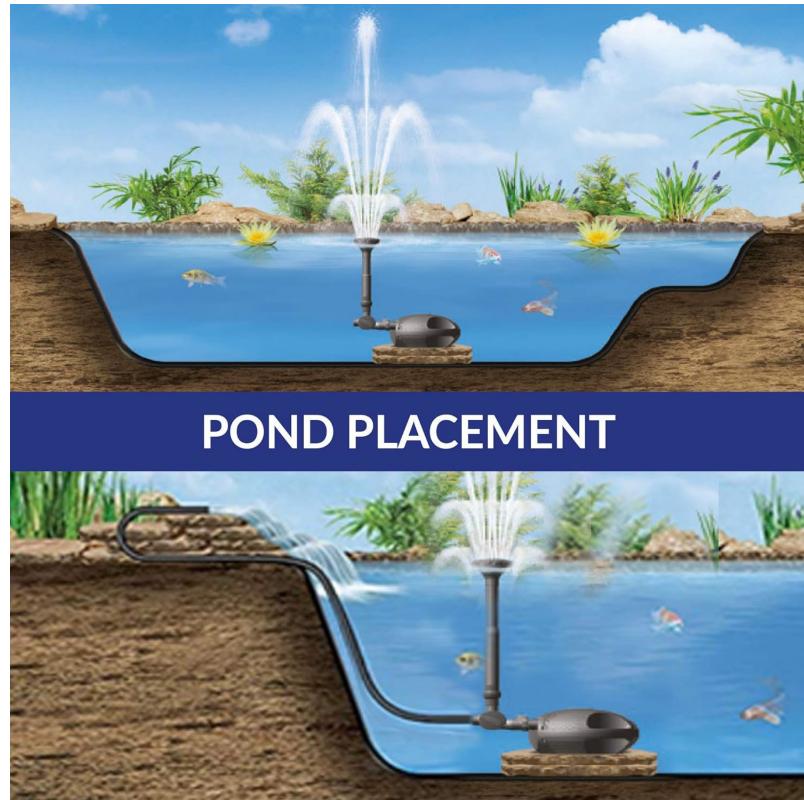
Filter

- Good water filtration is key for a healthy pond.
- Several styles available.



List of materials: Water Pump

- Waterfall
- Fountain
- Both?



List of materials: Air Pump

- Fish need oxygen.
- Important if pond freezes over.
 - Won't need heater.



Planning

- Draw out on ground
- Start digging
- Where will you put the soil that you are digging?



- Consider leaving space for plant shelves.



Underlayment



Pond Liner



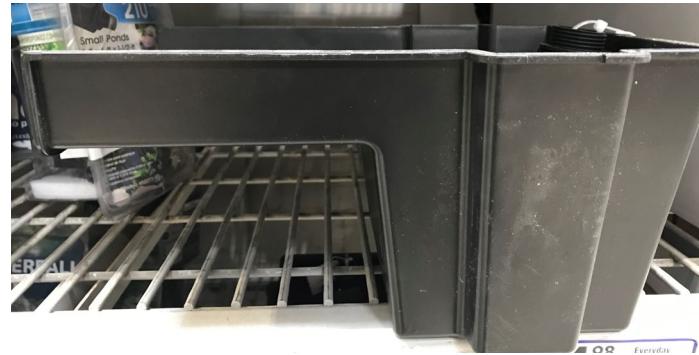
- Will have some creases in liner.
- Fold over.
- Make sure you have several inches extra.
- Liner make “settle” when filling.



- River rock in bottom is optional. Rinse rock first.
 - Hide bottom of liner.
 - Surface for beneficial bacteria growth.
- Adding rock to sides is optional.
 - Damage to female fish during spawning?



Waterfall Construction



Waterfall Construction









How much water is in my pond?

- Took a 1-gallon container and timed how long it took to fill.
 - Took 13 seconds
- 3,600 seconds in an hour.
- How long did it take my pond to fill? 2hrs, 20min
- $8400 \div 13 = 646$ gallons?





Didn't cut extra liner
and underlay until
pond was full.





Wildlife





Water Quality

- Chlorine is harmful to fish.
- Burns the gills.
- Destroys protective mucus coating on body.
- Kills beneficial bacteria.
- Add chlorine remover when adding tap water to pond.



Water Quality

- Fish pH: 7.0-8.4
 - Most tap water: 7.4-7.6
- Fish produce ammonia.
Harmful to fish.
- Strive for low ammonia
and nitrate levels.



Water Quality: Test Kits



String Algae

- Causes:
- Excess nutrients in water.
- Overfeeding fish
- Fertilizer runoff
- Decaying leaves in pond.
- Sunlight.
- Stagnant water.



Pond Scum

- Grows on the bottom of pond and rises due to oxygen.
- Excessive algae can reduce oxygen levels in water.



Pond Plants: submerged plants

- Provide oxygen
- Absorb excess nutrients from water.
- Ex.) Anacharis, hornwort



Anacharis

Pond Plants: emergent plants

- In pots underwater.
- Foliage and flowers emerge over water.
- Flowering plants need at least 6 hours of sun.
- Supplemental fertilizer.
- Help shade water.

- Ex.) water lilies, lotus, water hawthorn



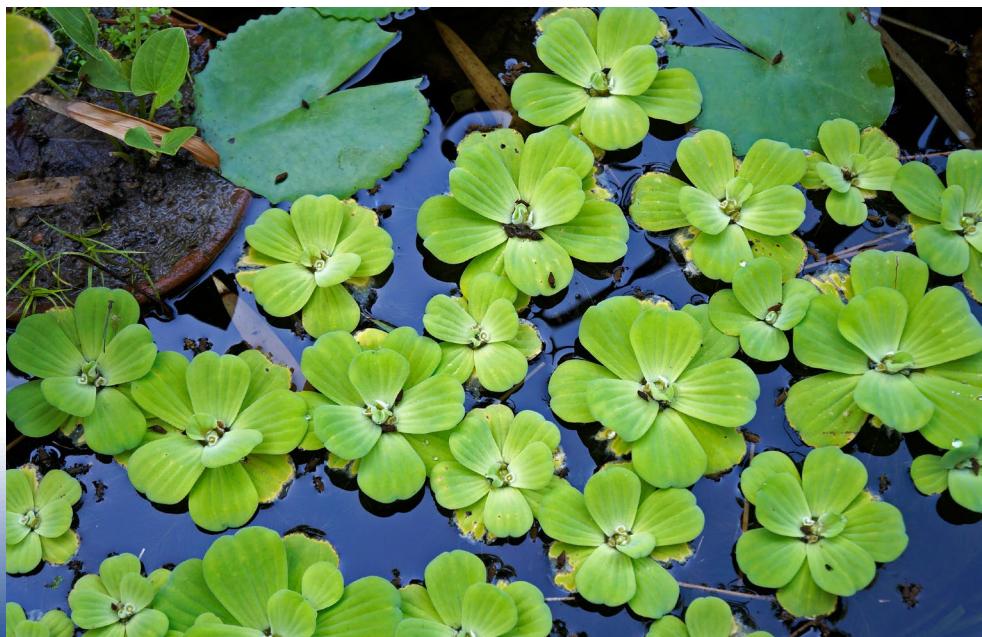


Pond Plants: floating plants

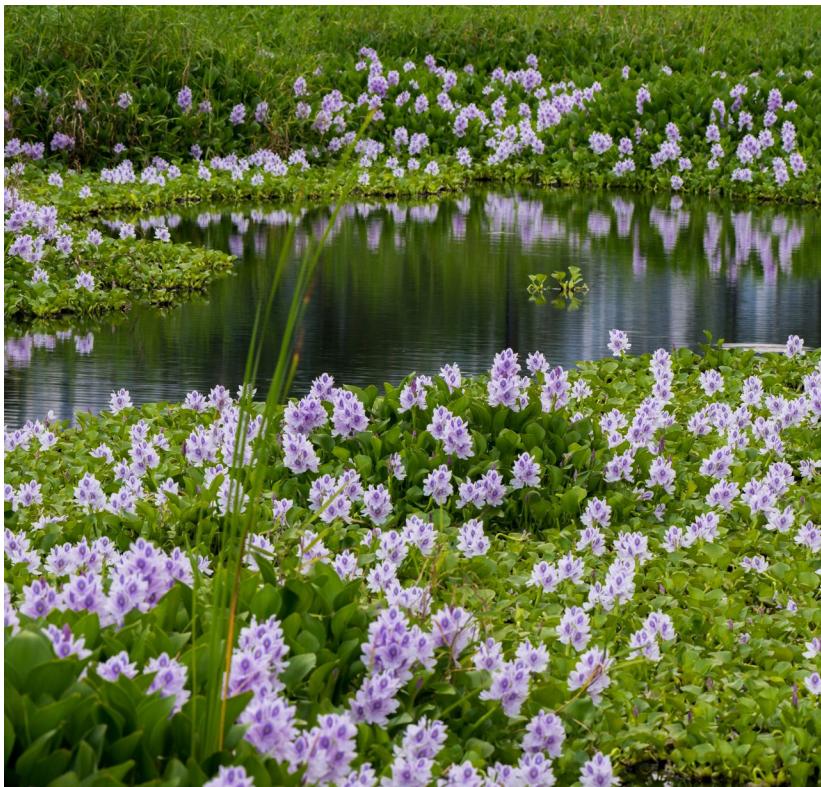
- Roots grow in water.
- Good place for fish to lay eggs.
- Help shade water.



- Ex.)
- Water hyacinth
- Water lettuce



Invasive in the wild



Pond Plants



PURCHASING FISH



Goldfish or Koi?



Koi?

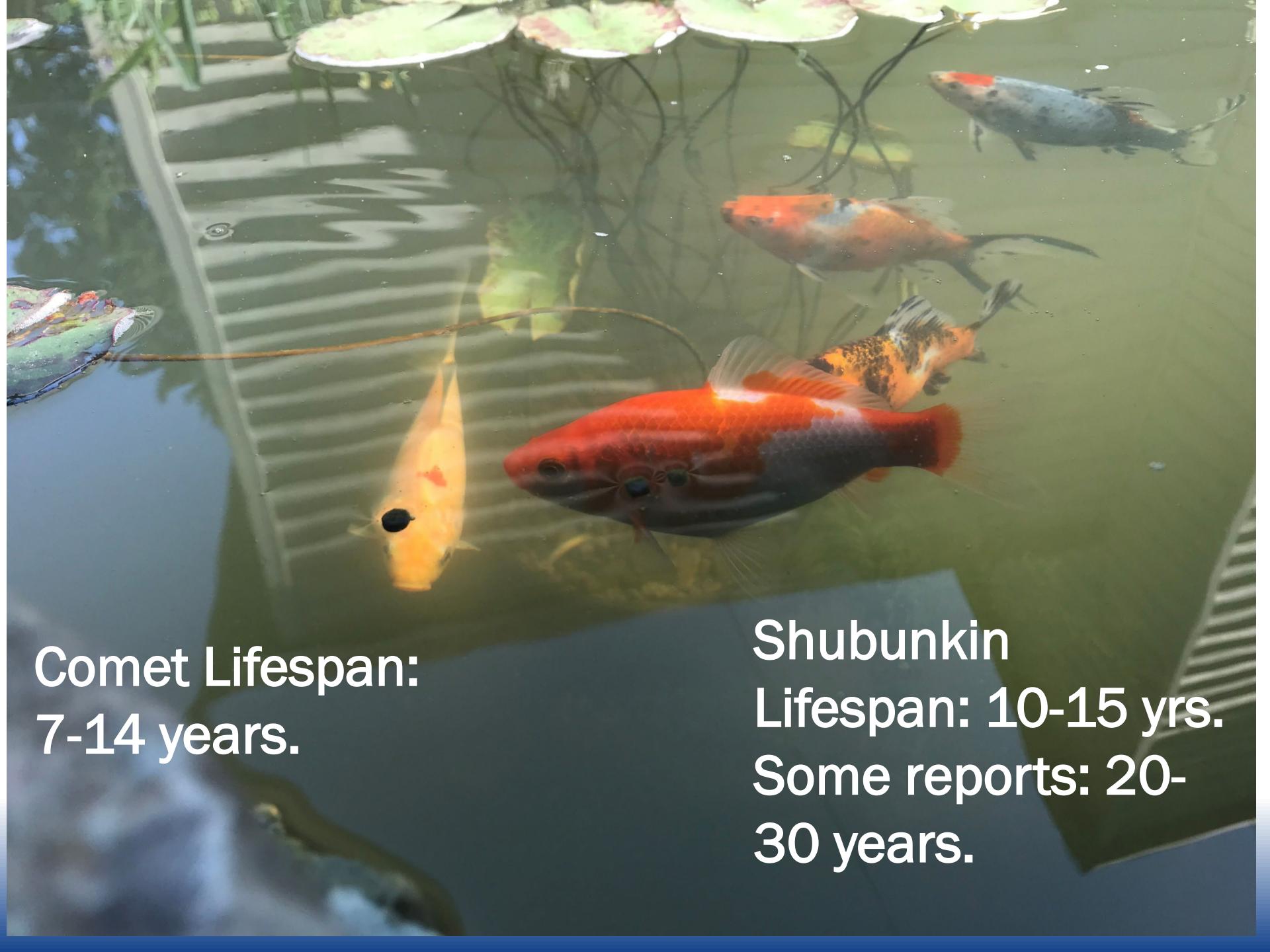
- Colorful variety of carp.
- Koi have barbels (whiskers). Goldfish do not have barbels.
- Japan
- Dig more in pots. Messy.
- In Japan: a Sign of luck, prosperity and fortune.
- Can be expensive



A photograph of a pond with several goldfish swimming over a bed of light-colored, rounded stones. The water is clear with some ripples. The goldfish are of different breeds and colors, including orange, white, and patterned varieties. The text 'Shubunkin Goldfish' is overlaid in the upper left area, and 'Comet Goldfish' is overlaid in the lower left area.

Shubunkin Goldfish

Comet Goldfish



Comet Lifespan:
7-14 years.

Shubunkin
Lifespan: 10-15 yrs.
Some reports: 20-
30 years.

Can Goldfish & Koi Breed?



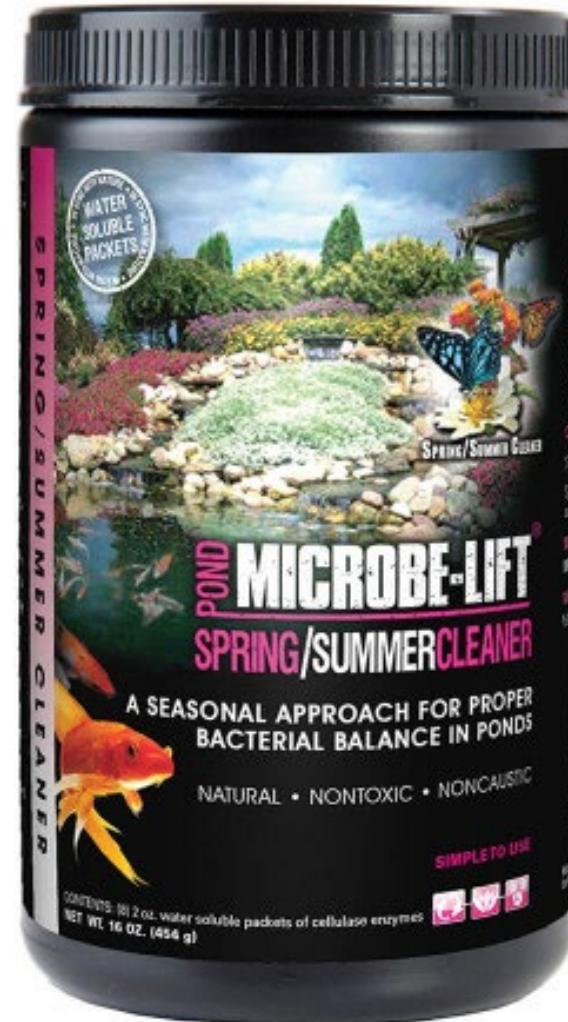
Yes. They are different species so offspring will be sterile.





Spring Cleanup

- Cleanout filter
- Skim pond for debris
- Consider products to replace winter bacteria loss.
 - Helps breakdown leaves and debris that have accumulated over the winter.
 - Nontoxic.



Questions?

