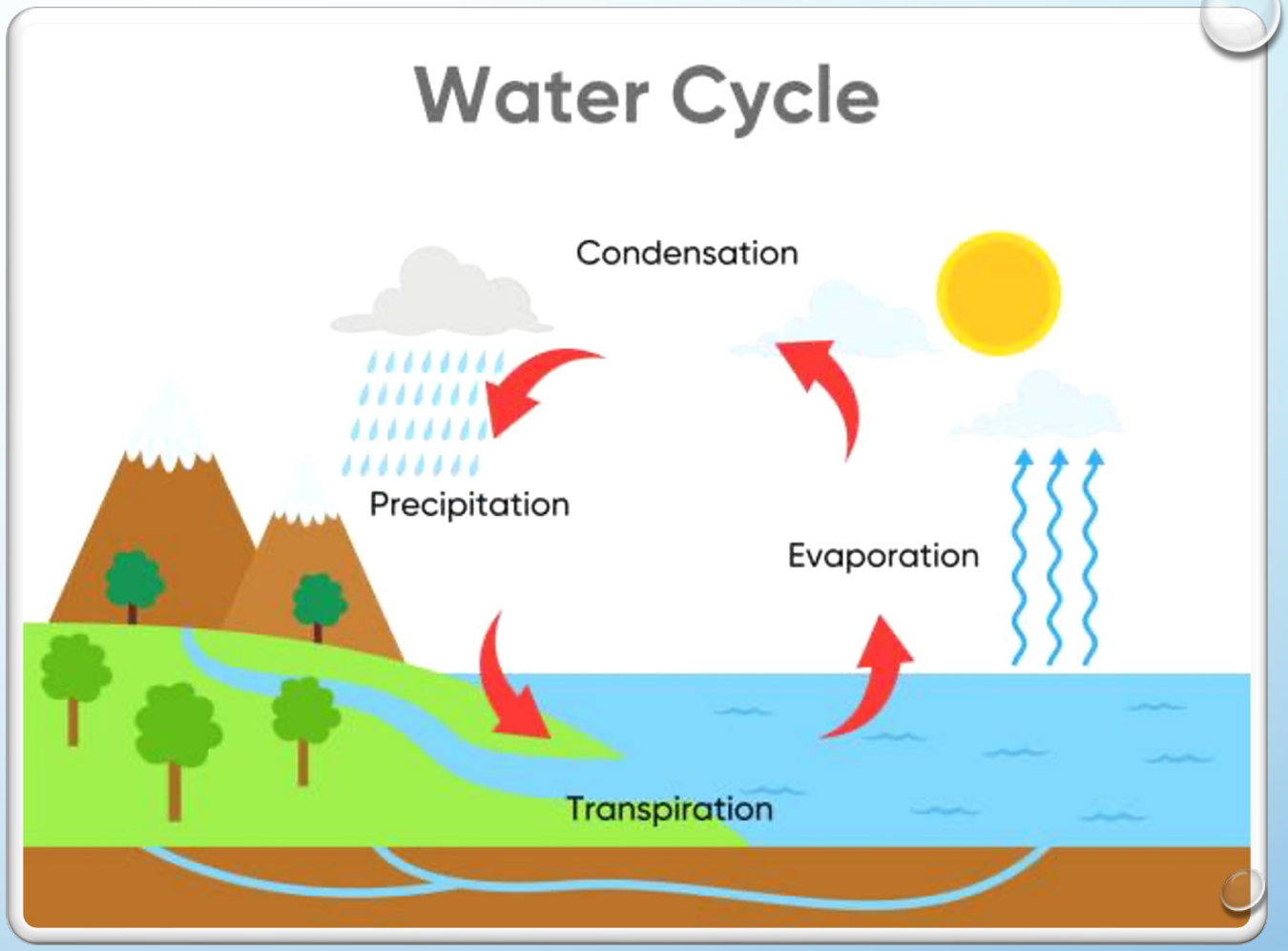
DISTRICT IV
HORTICULTURE PRESENTATION
MARCH 31, 2025

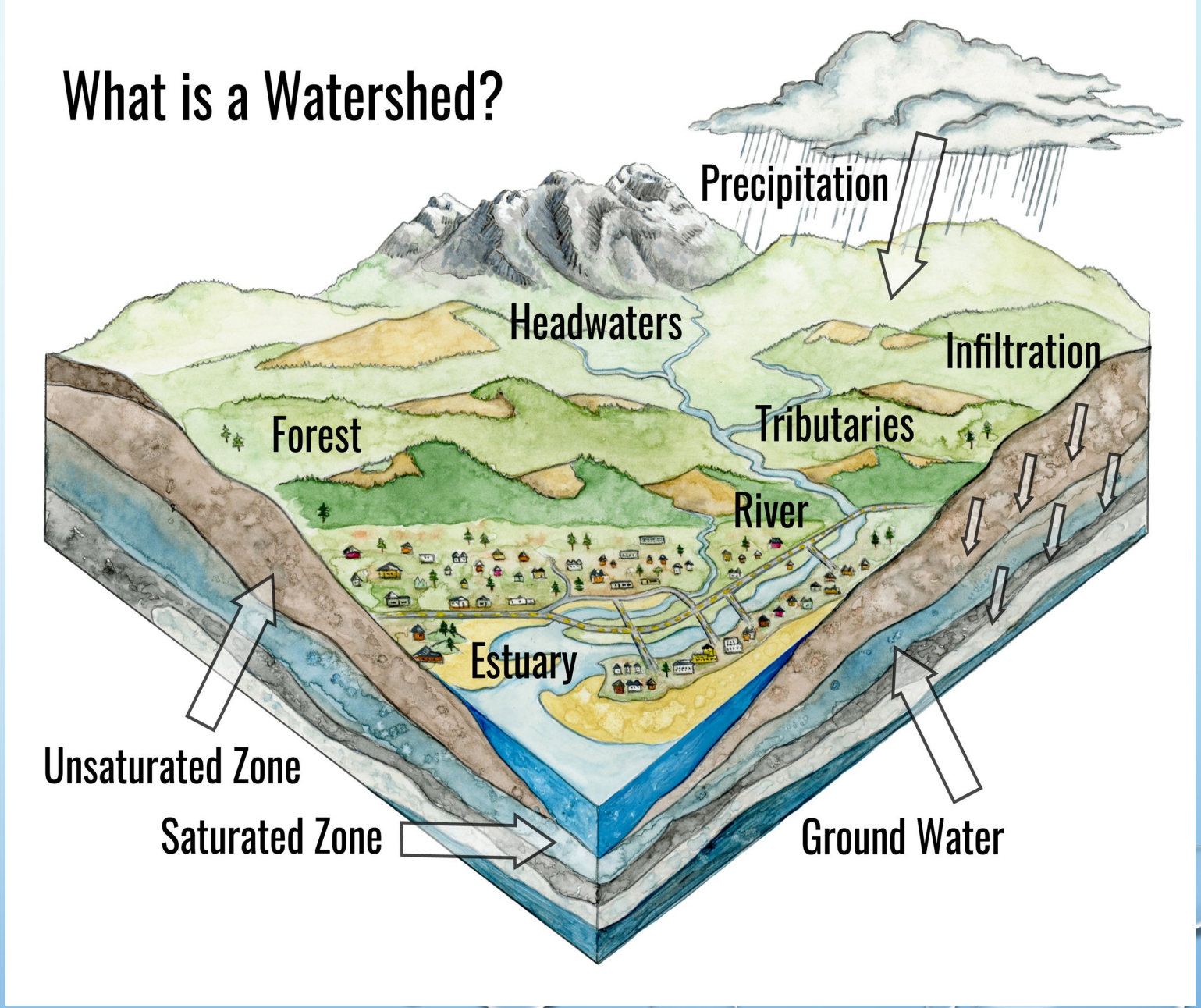
CLEAN WATER

THE WATER CYCLE

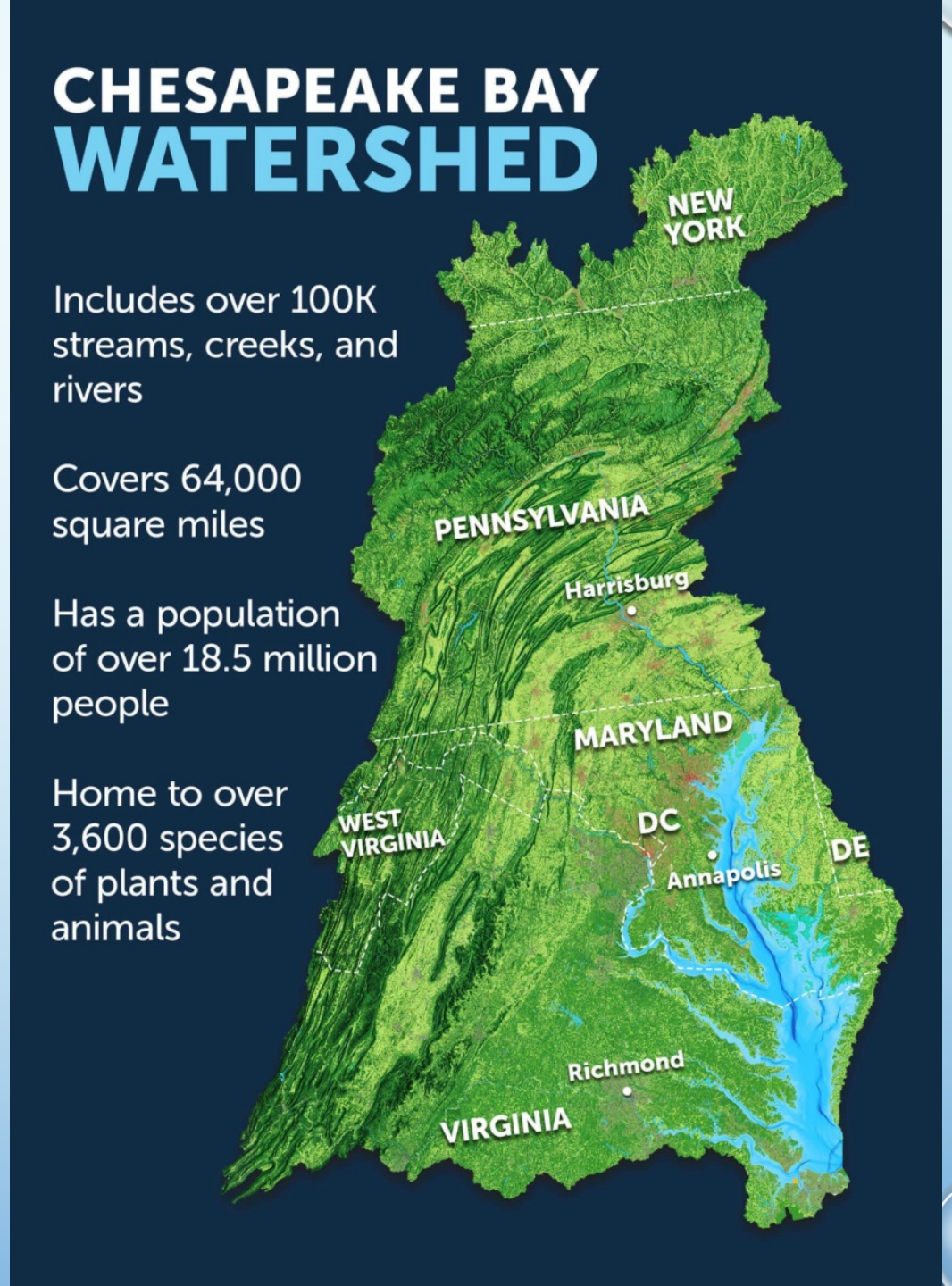
WE KNOW THE WATER CYCLE. ALL LIFE IS SUPPORTED BY IT.



- EVERYONE LIVES IN A WATERSHED.
- A WATERSHED IS AN AREA OF LAND THAT DRAINS TO A PARTICULAR BODY OF WATER. SOME ARE SMALL AND WITHIN A LARGER WATERSHED.
- WE ALL KNOW “THE GREAT DIVIDE”, WHERE WATER ON ONE SIDE DRAINS TO THE PACIFIC AND THE OTHER SIDE DRAINS TO THE ATLANTIC.



- WE LIVE IN THE CHESAPEAKE BAY WATERSHED.
- SOME OF US ARE IN THE SUSQUEHANNA WATERSHED AND
- OTHERS IN THE POTOMAC WATERSHED.
- SMALLER ONES ARE WITHIN THEM.



ADAMS COUNTY

- IF YOU LIVE N ADAMS COUNTY, EVERY ONE OF 1300 MILES OF STREAMS ORIGINATES IN THE COUNTY.
- THE WATER TABLE HERE IS VERY HIGH AND THE GROUND VERY ROCKY. MANY OF US HAVE SEEN A SPRING LIKE THIS ONE ON OUR OWN PROPERTIES.

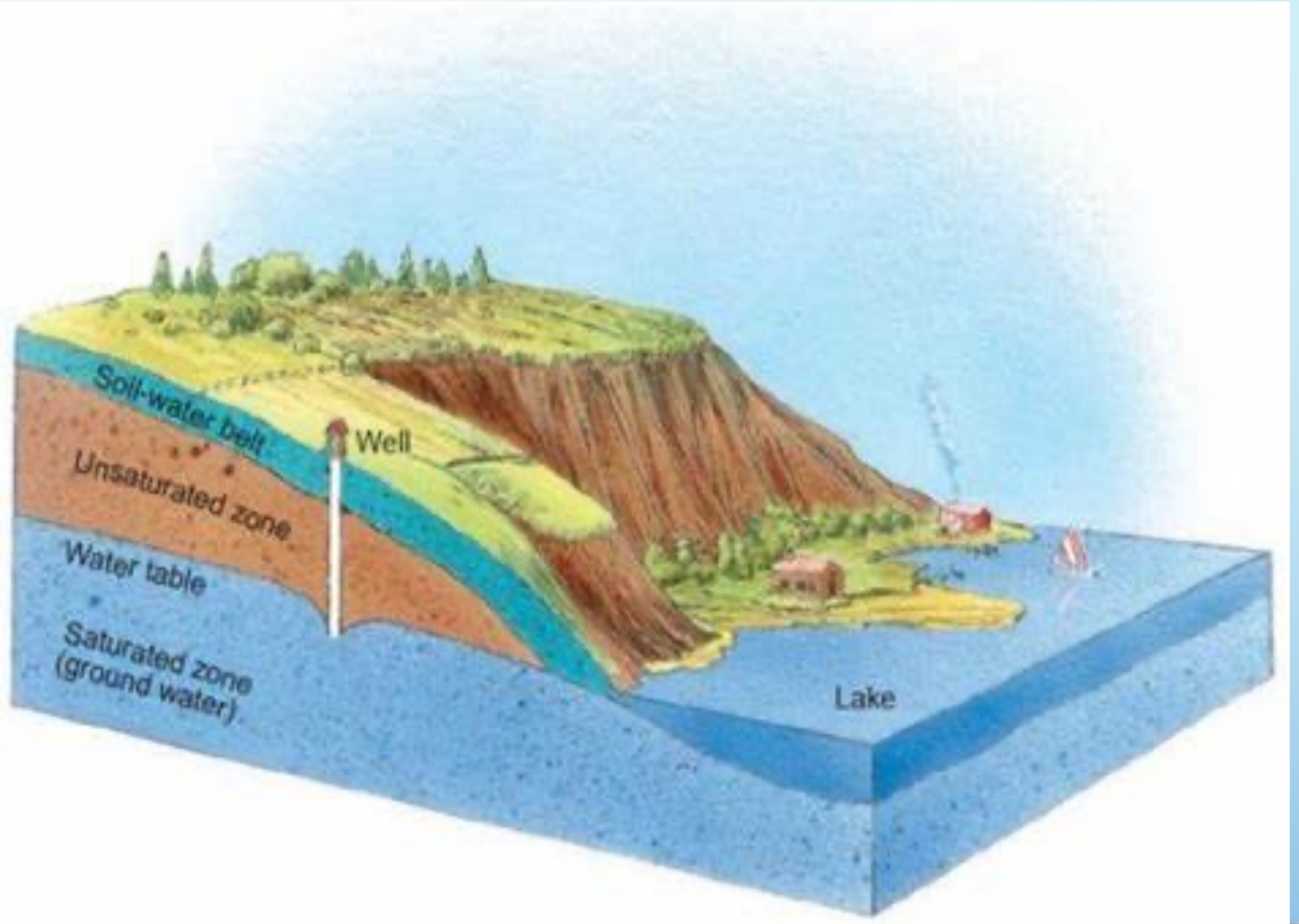
THE TRUE PICTURE

THE WATERSHED ALLIANCE OF ADAMS COUNTY HAS BEEN TESTING THE STREAM WATERS FOR NITRATES, PHOSPHOROUS, PH, CONDUCTIVITY, FOR OVER 20 YEARS. IN 2024 THEY ALSO TESTED FOR PATHOGENS.

THE LATEST DATA (2024) SHOWED THAT OF 21 TEST SITES ONLY 4 WERE CLEAN ENOUGH FOR WATER RECREATION. THAT IS ONLY A VERY SMALL NUMBER OF THE TOTAL NUMBER OF STREAMS AND SITES. OTHER COUNTIES MIGHT HAVE EVEN MORE DUE TO THE FACT THAT ALL ADAMS COUNTY'S STREAMS ORIGINATE WITHIN THE COUNTY. THERE IS NO COLLECTIVE ACCUMULATION FROM OUTSIDE THE COUNTY BEING CARRIED DOWNSTREAM.

WATER TABLE AND AQUIFERS

- AS SHOWN IN THE WATER CYCLE SLIDE, ALL WATER ON EARTH COMES FROM PRECIPITATION.
- IN THIS SLIDE WE SEE A CUTAWAY OF THE EARTH FROM THE SURFACE TO THE SATURATED ZONE UNDERGROUND.
- WHAT WE WANT IS FOR THE RAIN THAT HITS THE SURFACE TO INFILTRATE INTO THE GROUND TO THE WATER TABLE.

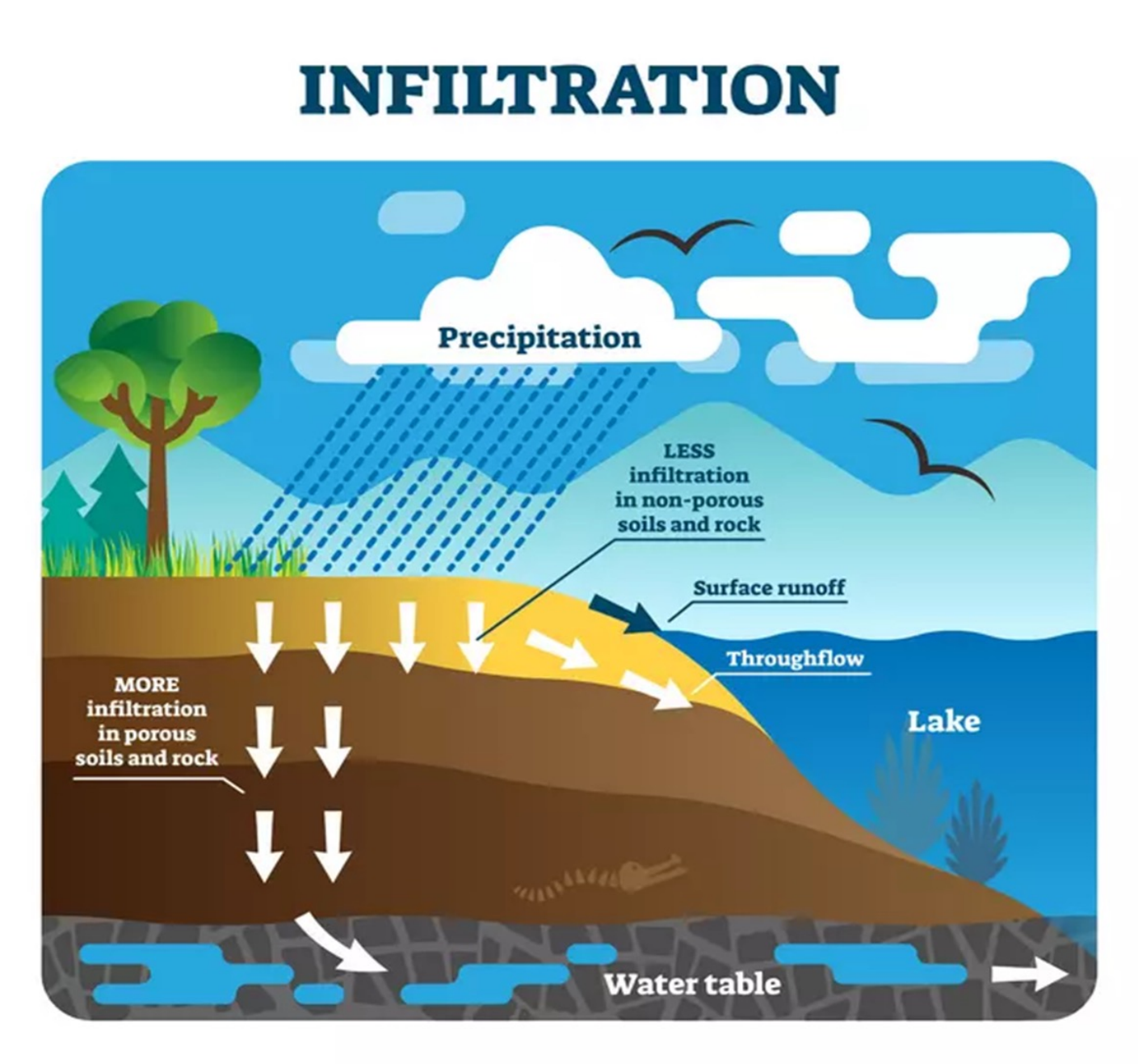


14.6 Zones of subsurface water

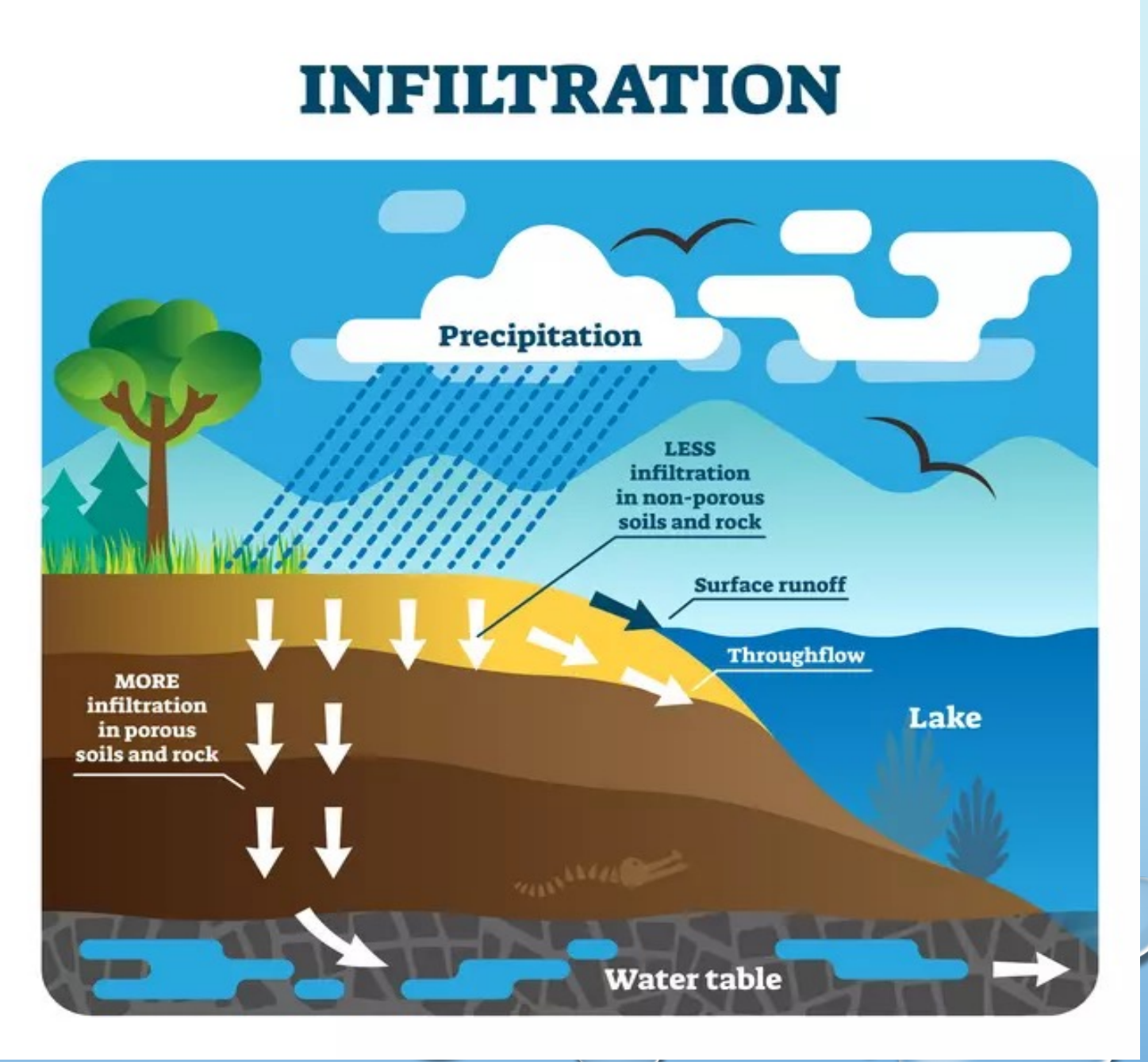
Water in the soil-water belt is available to plants. Water in the *unsaturated zone* percolates downward to the *saturated zone* of ground water, where all pores and spaces are filled with water.

RUNOFF

- RUNOFF IS THE WATER THAT IS CARRIED ON TOP OF THE EARTH'S SURFACE DUE TO IMPERVIOUS SURFACES: ROADS, ROOFTOPS, COMPACTED SURFACES, CLAY SOIL, ETC.
- LOOK AT THE PICTURE. ALL THE POLLUTANTS, CONTAMINATION, CHEMICALS, ANIMAL WASTE, SALT, INADEQUATE SEPTIC SYSTEMS, LOOSE SOIL AND SILT ARE ON THE TOP OF THE SOIL.
- ALL RUNOFF CARRIES THOSE INTO SURFACE WATER: LAKES, STREAMS, PONDS, ETC.



- INFILTRATION IS THE KEY WORD IN THIS PRESENTATION.
- IN NATURE WATER INFILTRATES THROUGH PERMEABLE SURFACES.
- DIRT, SAND, STONES AND MICROORGANISMS FILTER THE WATER AS IT MOVES THROUGH THE PARTICLES.
- ROOTS REMOVE MANY POLLUTANTS, STOP EROSION, AND CREATE PATHWAYS FOR WATER.
- SURFACE WATER SHOULD PRIMARILY COME FROM GROUND WATER.
- THE RESULT IS CLEAN WATER.
- THE CHALLENGE IS TO KEEP RUNOFF FROM HAPPENING AND INFILTRATION OCCURRING.
- NATURE DOES IT BEST!



WHAT WE CAN DO

- TAKE CARE TO USE CHEMICALS CORRECTLY AND ONLY WHEN NEEDED. USE ORGANIC PRODUCTS.
- PLANT NATIVE PLANTS AND TREES.
- REMOVE INVASIVES.
- MINIMIZE TURF.
- ALL LIFE NEEDS CLEAN WATER.

WHAT WE CAN DO

DISPOSE OF THESE CAREFULLY AND CORRECTLY:

- MOTOR OIL
- PESTICIDES
- LEFTOVER PAINTS OR PAINT CANS
- MOTHBALLS
- FLEA COLLARS
- HOUSEHOLD CLEANERS
- A NUMBER OF MEDICINES….(DO NOT FLUSH THESE, BUT USE DISPOSAL OPPORTUNITIES.)

WHAT WE CAN DO

- A FOREST CAN HAVE FROM 100 TO 1000 TREES PER ACRE.
- 10,000 TREES CAN SAVE 1 MILLION GALLONS OF WATER PER YEAR.
- 10 PERCENT OF RAIN IN A FOREST RESULTS IN RUNOFF.
- 100 PERCENT OF RAIN ON CONCRETE RESULTS IN RUNOFF.
- PLANT A TREE!!