RAIN GARDENS

TEACHING RUNNING WATER HOW TO WALK

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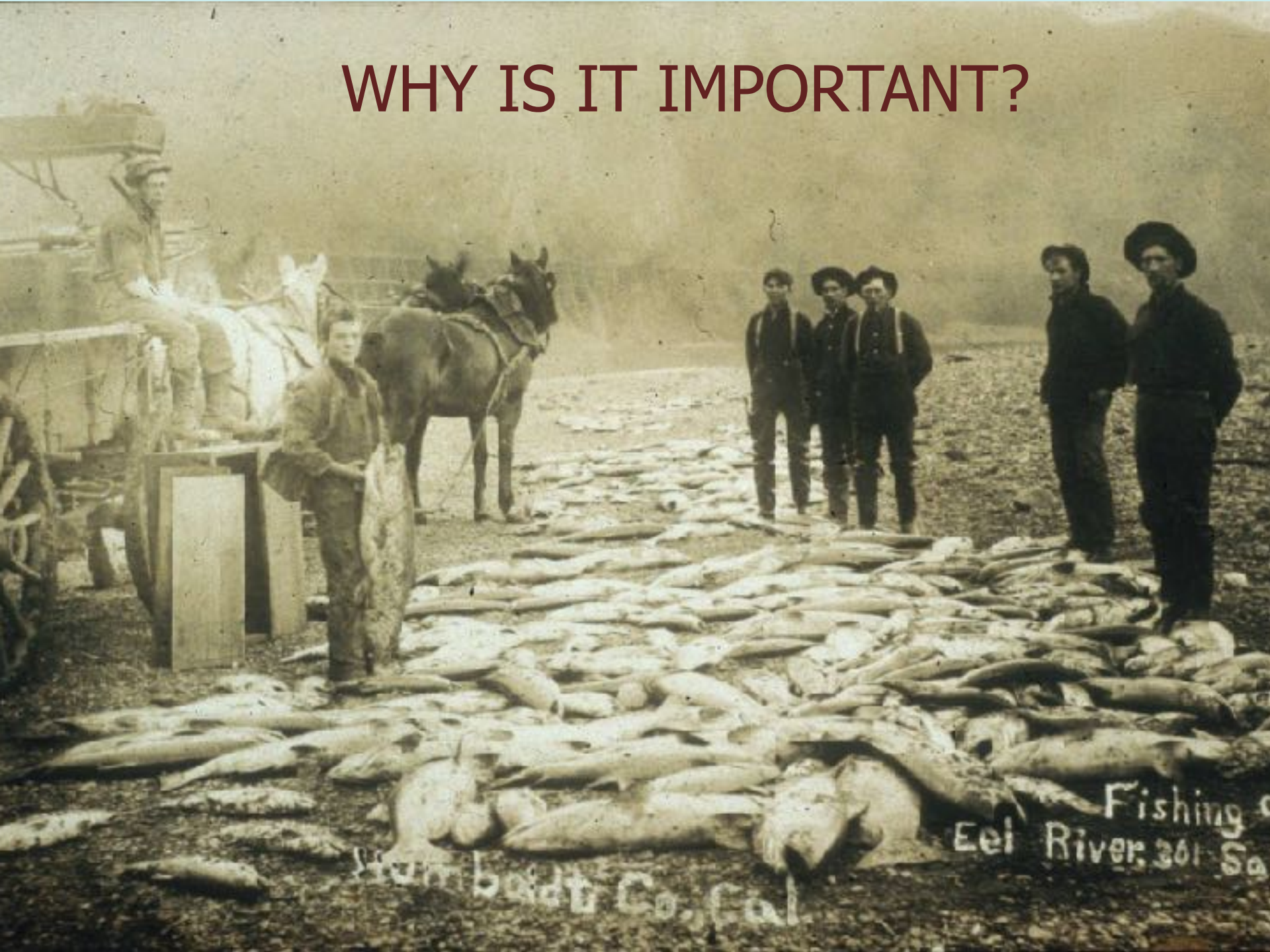
WHY IS IT IMPORTANT?

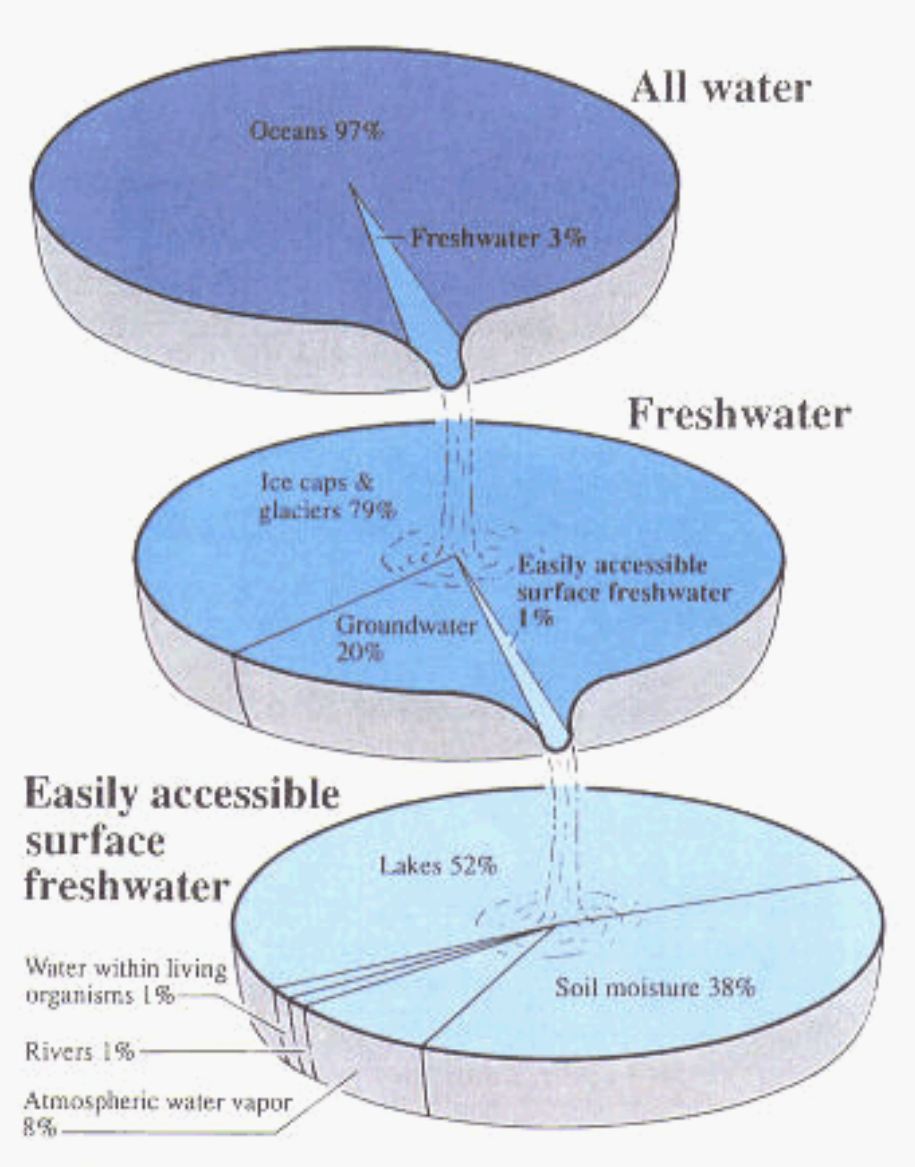


Credit: Brock Dolman

STORM WATER FROM STORM DRAINS BRINGS POLLUTANTS TO WATERWAYS

- Fertilizers
- Oil and Gas
- Rubber from Tires
- Pesticides
- Bacteria from pet waste
- Eroded soil
- Road salt
- Litter

Distribution of the World's Water



97% of the world's water is salt.

3% is freshwater

80% of all freshwater is locked in ice caps and glaciers.

Of the 20% remaining in ground water, only 1% of that is easily accessible in lakes, springs, creeks, rivers etc.

That leaves less than .0025% of the earth's water that is available for humanity's needs – agricultural, manufacturing, residential, personal, and community needs.

BENEFITS OF RAIN GARDENS

RECHARGES AQUIFERS

SOIL STORAGE IS LIKE AN UNDERGROUND TANK

PROVIDES WATER TO ROOT ZONE OF PLANTS

ELIMINATES SURFACE RUNOFF - EROSION

REDUCES OR ELIMINATES FLOODING

NATURAL FILTER

REVITALIZES SPRINGS AND STREAMS
ADDRESSES SALTWATER INTRUSION

ATTRACTS BENEFICIAL INSECTS, BIRDS
AND BUTTERFLIES

GROUND SUBSIDENCE

The ground DROPPED
9 meters, or 29.5 feet
because water that had supported
the ground was pumped out

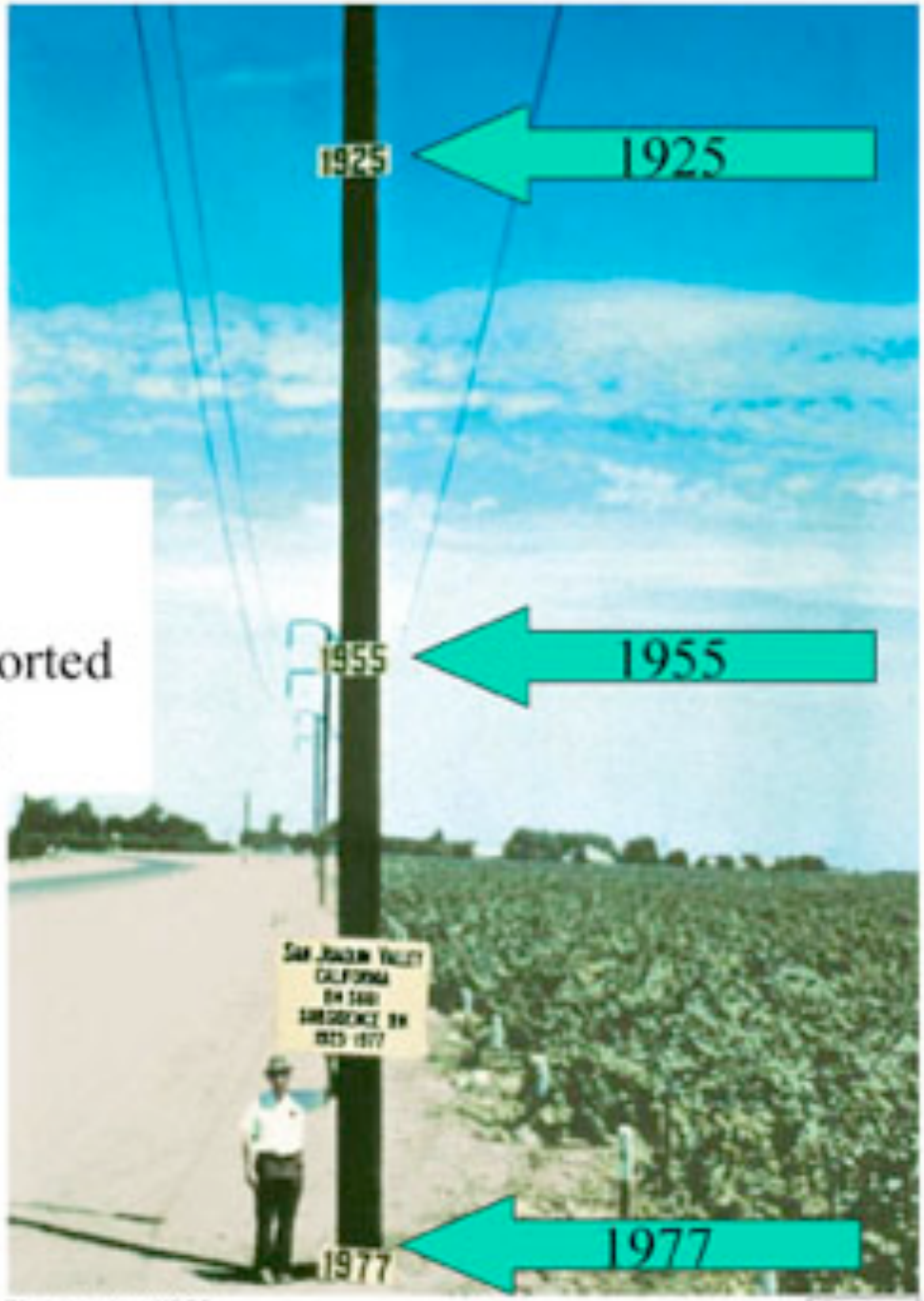
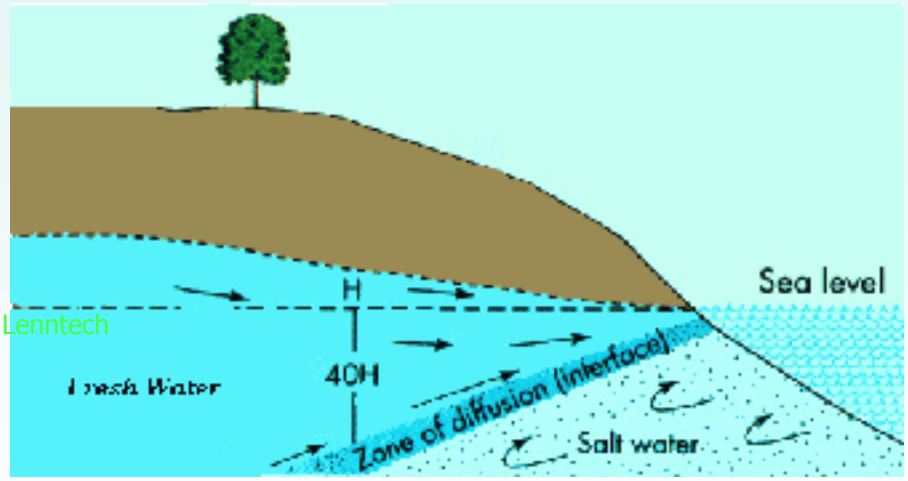
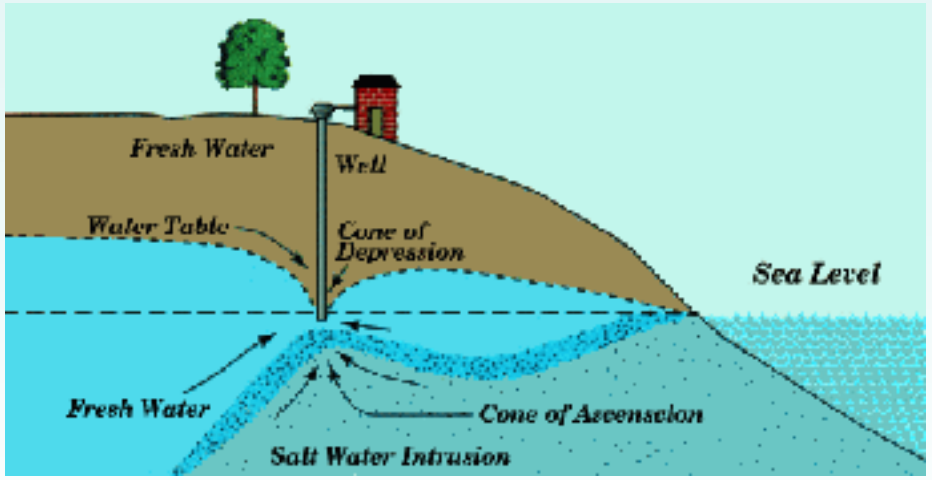
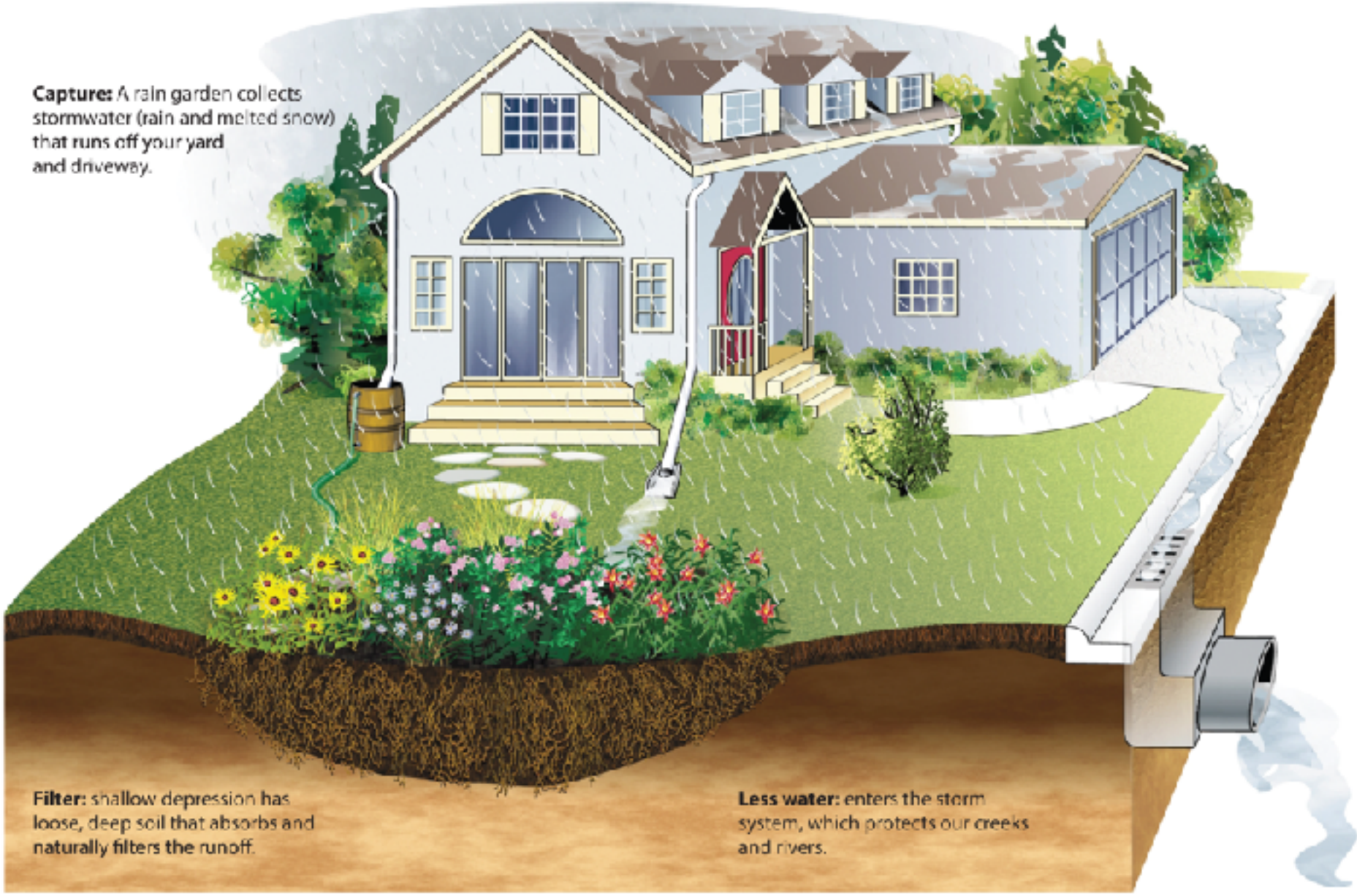


Photo courtesy USGS

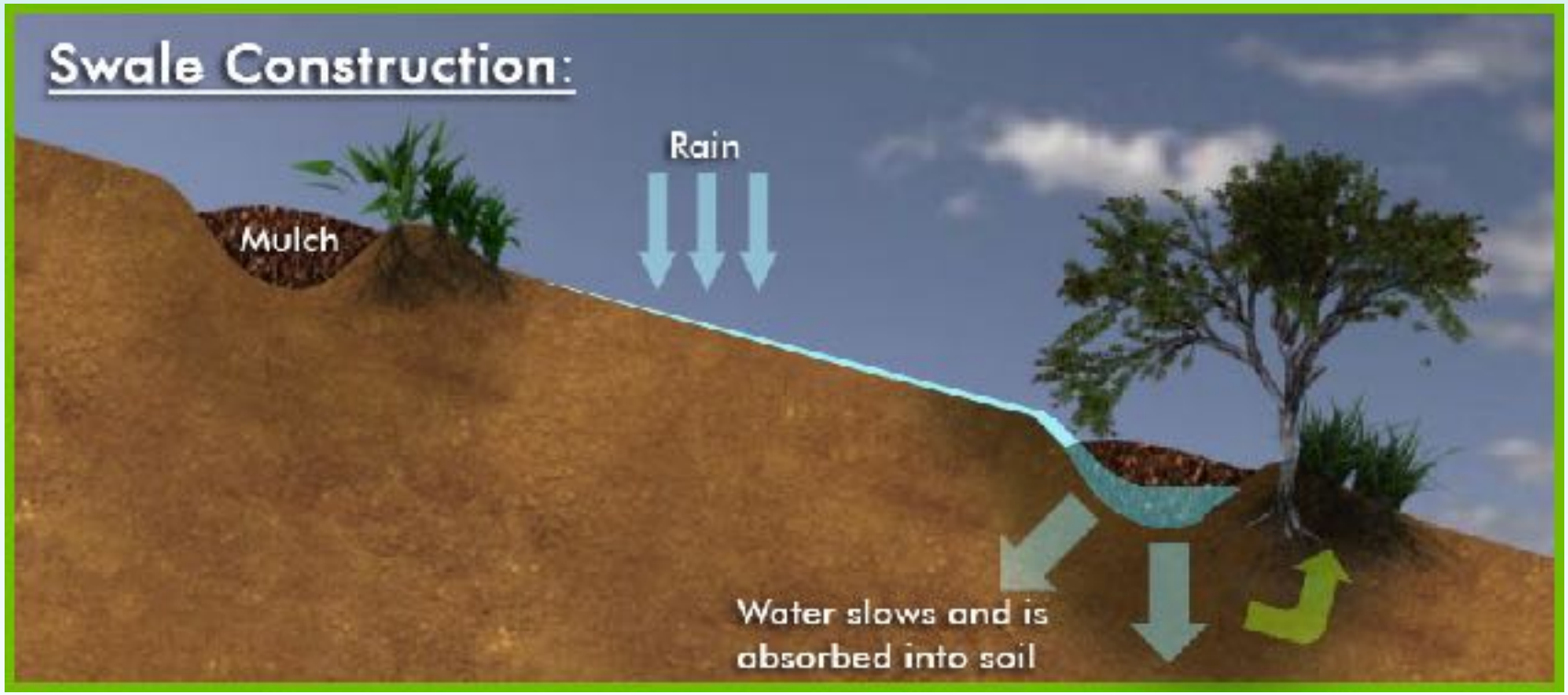
SALT WATER INTRUSION






Capture: A rain garden collects stormwater (rain and melted snow) that runs off your yard and driveway.
Filter: shallow depression has loose, deep soil that absorbs and naturally filters the runoff.
Less water: enters the storm system, which protects our creeks and rivers.

CURB CUT
ON SIDEWALKS

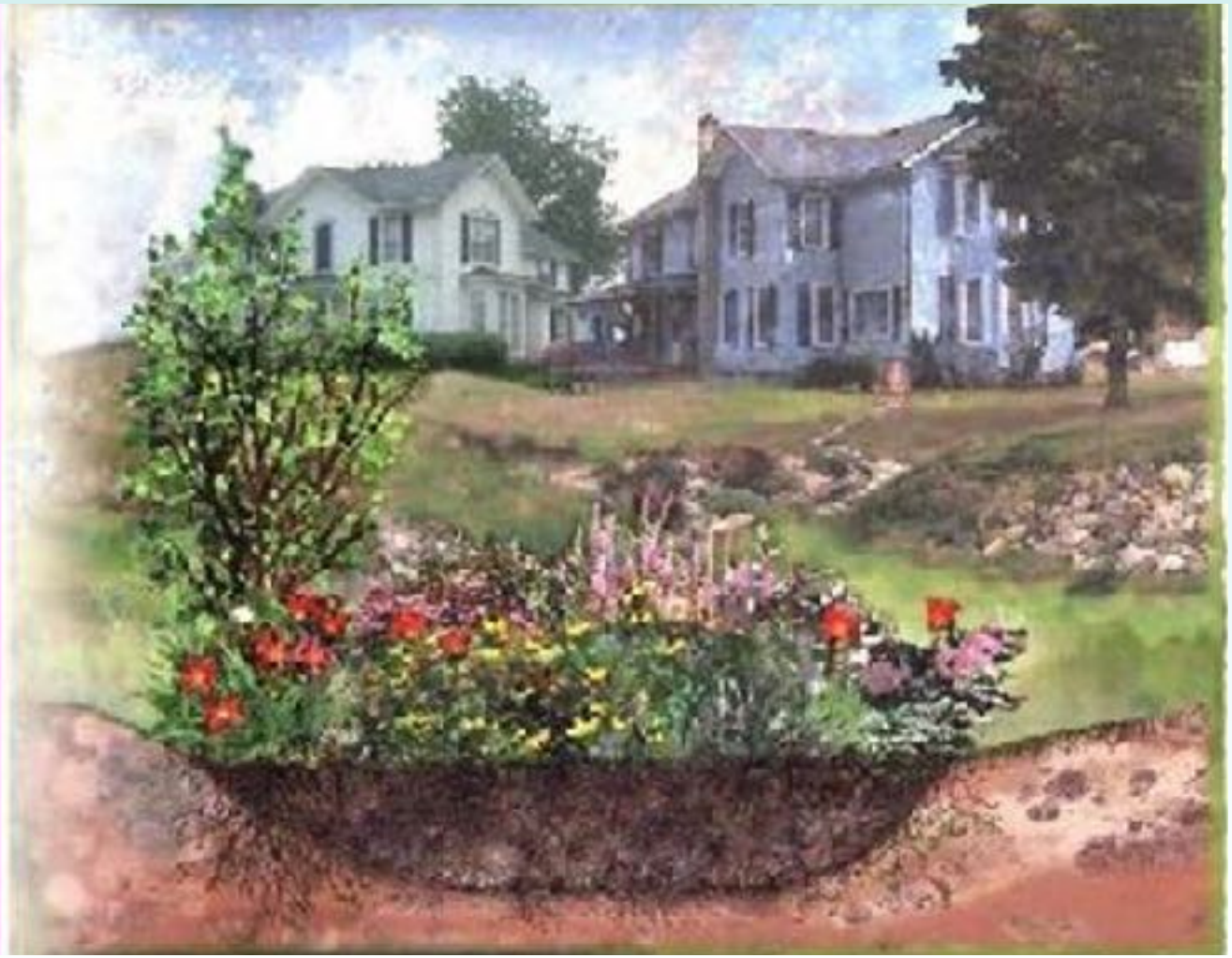

Swale Construction:
Rain
Mulch
Water slows and is absorbed into soil

RAINWATER HARVESTING FROM ROOFS AND NON-PERMEABLE SURFACES

SEPP HOLTZER: WATER RETENTION LANDSCAPES

PERMEABLE PAVING

HOW TO BUILD A RAIN GARDEN



STEP 1. LOCATION LOCATION LOCATION

WHERE NOT TO PUT A RAIN GARDEN

- UPHILL FROM A BUILDING FOUNDATION
- OR SEPTIC LEACH FIELD
- NEAR STEEP CLIFF OR EROSIVE BANK OVER 15%
- SOIL WITH POOR DRAINAGE
- CHECK FOR UTILITIES

WHERE TO PUT A RAIN GARDEN

- BELOW HOUSE OR SEPTIC FIELD
- UPHILL FROM A SPRING, STREAM OR WETLAND
- ABOVE WELLS OR WATER SOURCES
- UPHILL FROM WATER LOVING PLANTS
- BELOW ANIMAL PENS AND BARNS
- WHERE THERE IS STORM WATER RUNOFF
- WELL DRAINING EROSIVE SOILS
- ON CONTOUR IF HARVESTING RUNOFF

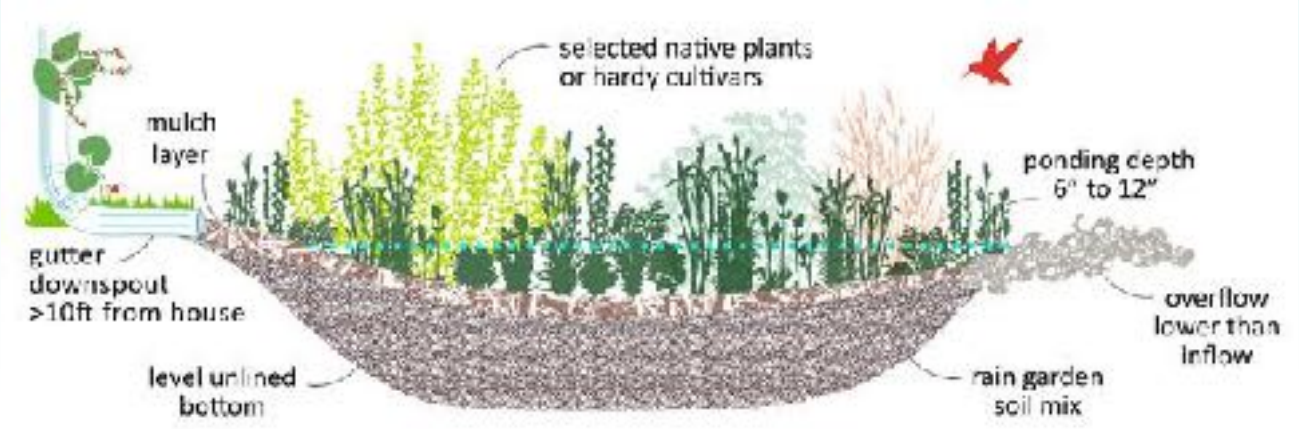
STEP 2. DRAW OUTLINE PERIMETER WITH WHITE FLOUR OR USE A GARDEN HOSE. DESIGN INFLOW AND OUTFLOW TO LAWN EXISTING DRAIN OR GARDEN

STEP 3. DIG HOLE 30” DEEP APPROXIMATELY 4-6’ WIDE DEPENDING ON WATER VOLLUME SHAPE CAN VARY DEPENDING ON SLOPE AND DESIGN

STEP 4. BACKFILL WITH SANDY SOIL MIX TO 6”-12” FROM GRADE

STEP 5. PLANT

STEP 6. TOP WITH DECORATIVE STONE TO HOLD SOIL IN PLACE



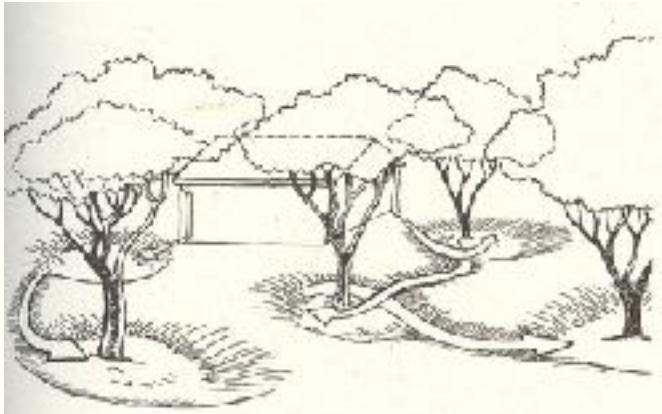
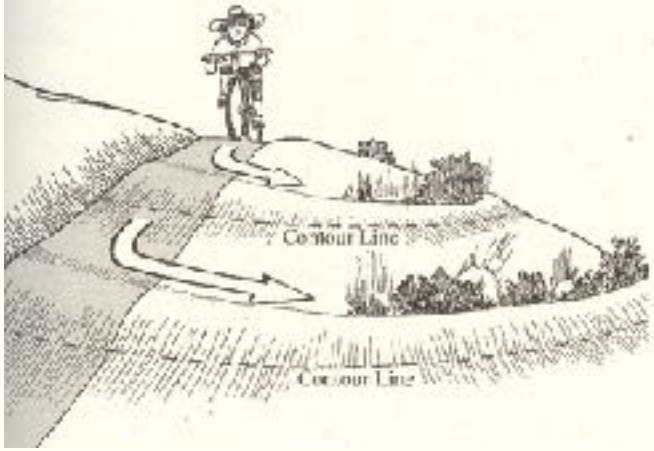
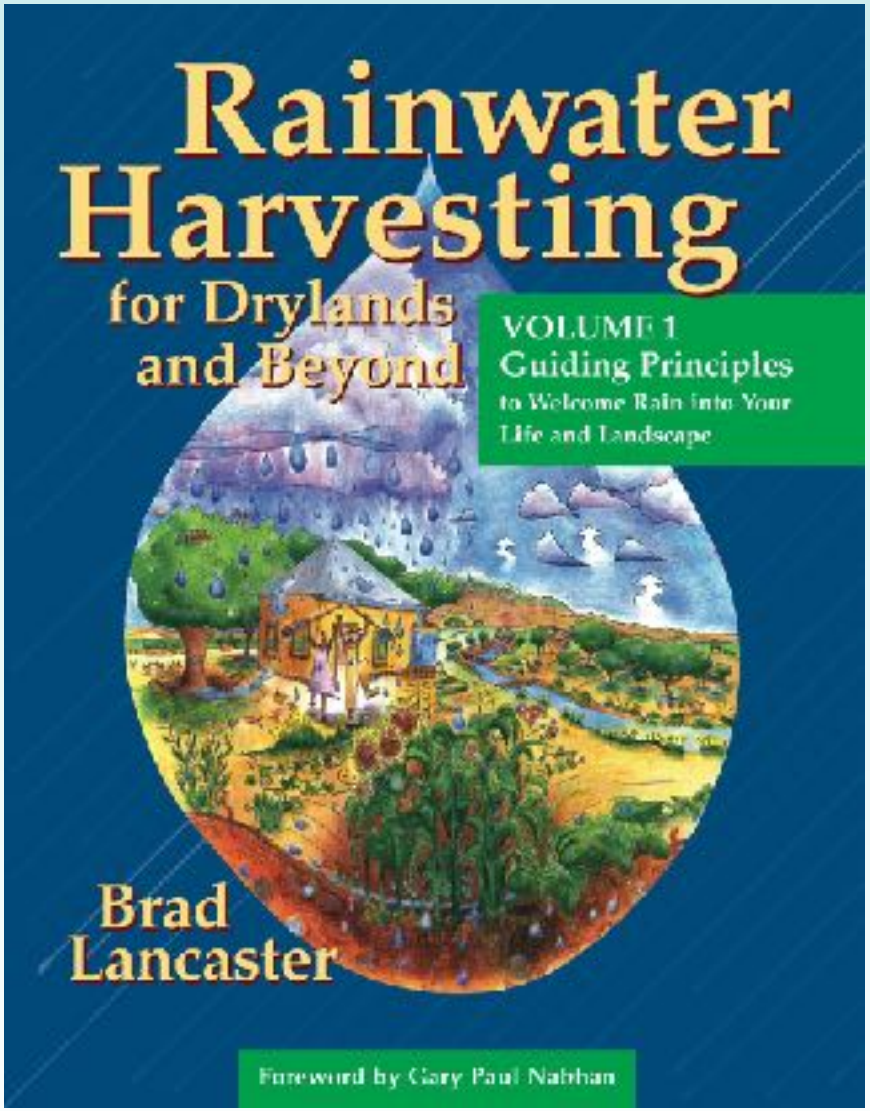
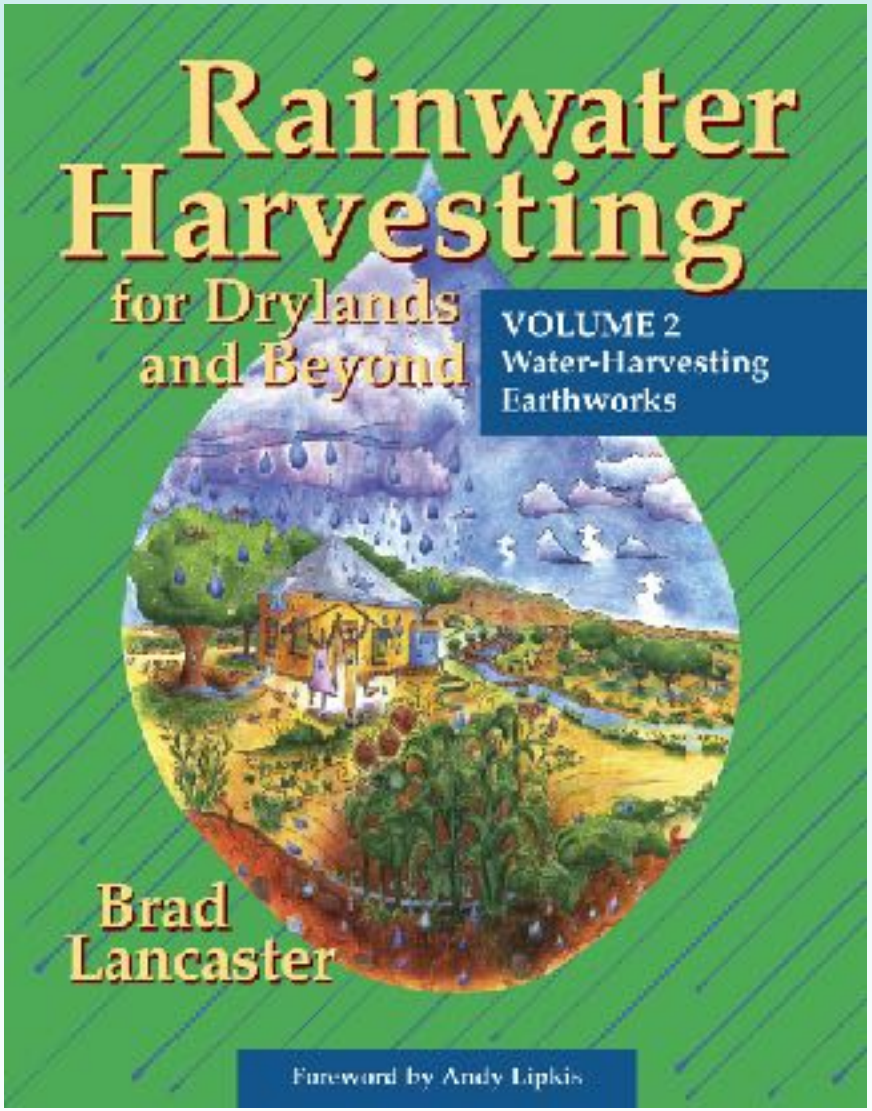


Fig. 3.20. A series of diversion swales as a water-harvesting overflow route from one infiltration basin to another







www.HarvestingRainwater.com


THANK YOU!