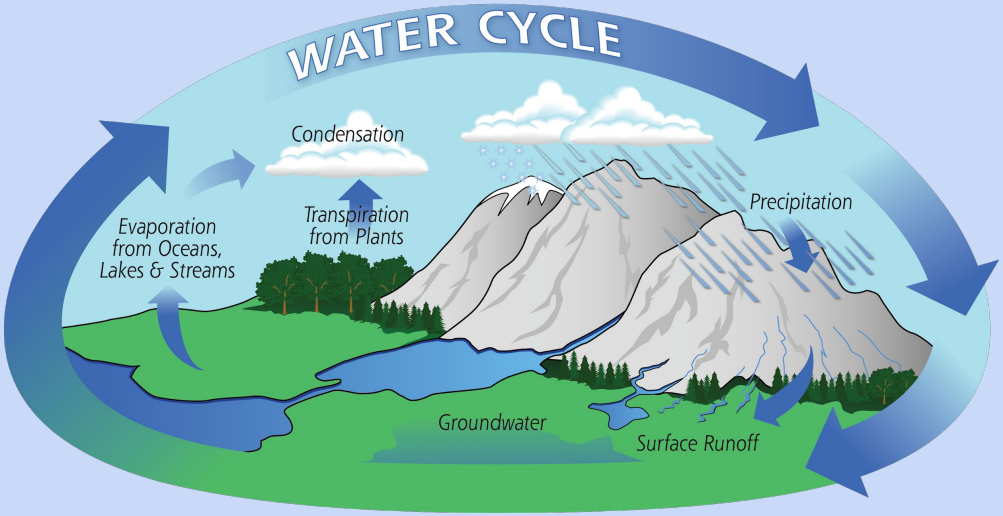
Idaho's Water and the Environment

How Idaho's natural resources affect and are affected by its water systems

By: Gooding Team A

The Water cycle



- Evapotranspiration: process by which water is transferred from the land (water bodies) or from plants to the atmosphere as water vapor.
- Condensation: Water vapor cools into droplets and condenses around microscopic dust particles that form clouds.
- Precipitation: When water in clouds gets heavy enough if falls in the form of rain, snow, sleet, or hail.
- Surface Runoff: When excess water flows down mountains or hills and infiltrates/percolates into the soil and possibly into aquifers.

Aquatics

- The water cycle heavily affects the climate. During winter and early spring, there is more carbon dioxide in the air because of the reduced amount of photosynthesis which then causes temperatures to fluctuate. An increase in temperature, leads to more evaporation. This causes bodies of water to become more shallow, and therefore increasing in temperature which proves harmful to aquatic life.
- This is important to us because the aquatic life is an important food source, and if all of our water is evaporating, it can't percolate into the aquifers and be utilized.
- To help restore aquifers, it's important to limit water use, and help reduce pollution in the air, as well as in the water. This is especially important in Southern Idaho, because we are in a desert climate.

Wildlife

- The four components of a habitat are food, space, shelter, and water.
- Protecting a habitat benefits several species.
- One animal that benefits from the protection of water habitats is fish.
- Fish such as the sockeye salmon need healthy stream beds to spawn.
- One problem with irrigation canals is that they are built straight and don't have any of the natural resting pools like in natural streams and don't have any of the sallow areas to spawn fish and often don't have shaded areas.
- By working with landowners we can more efficiently use the water and keep the wildlife safer as well.

Forestry

Forestry and Water

- Forests play an important role in maintaining both groundwaters and aquifers.
- They help hold snowpacks and let them melt slowly, reducing flooding and increasing recharge.
- Trees can provide shade that reduces amount of evaporated water coming off rivers.

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- Forests promote soil health and infiltration by breaking up soil and introducing organic matter.
- Natural and non-invasive recharge systems and assistors.
- Detritus and root systems filter water and help improve water quality and reduce soil erosion by holding material in place.

Soils

Soil's connection to water.....

- "*Soils store and filter water improving food security and our resilience to floods and droughts.*"- *FAO*
- Soils play an important role in ensuring healthy waterways, and ecosystems.
- The health of the soil can often determine the health of a water source.
- Healthy soils ensure better crops and work hand in hand with water to grow food.

Soil without Water.....

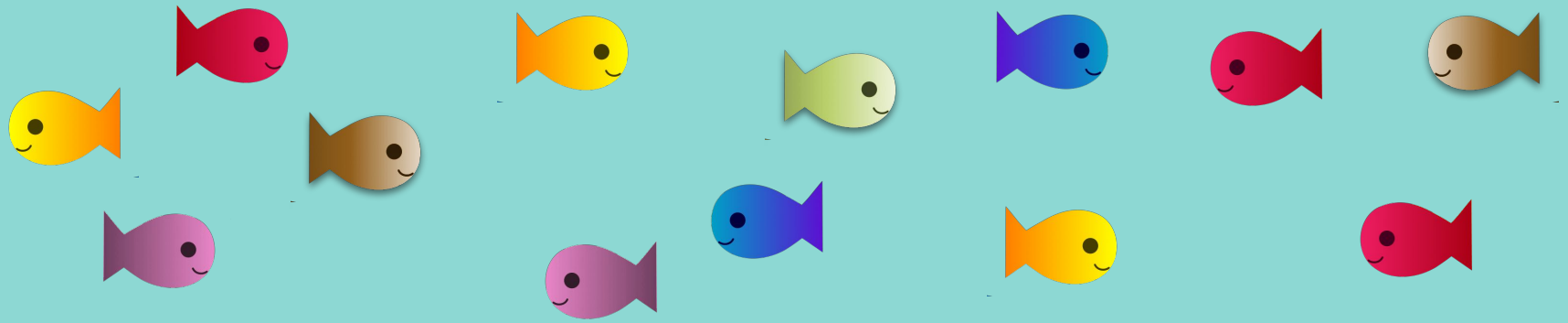
- Soils are partly created in connection with the climate. This allows soils to function best in whatever region of the world they are located.
- However all soils systems depend on water in many ways.
- Without consistent water, in which the soil was created many regions can expect desertification.
- Many current agricultural systems today are not regenerative and lead to disruptions in local water systems, leading to many issues with soil health.

Managed Recharge

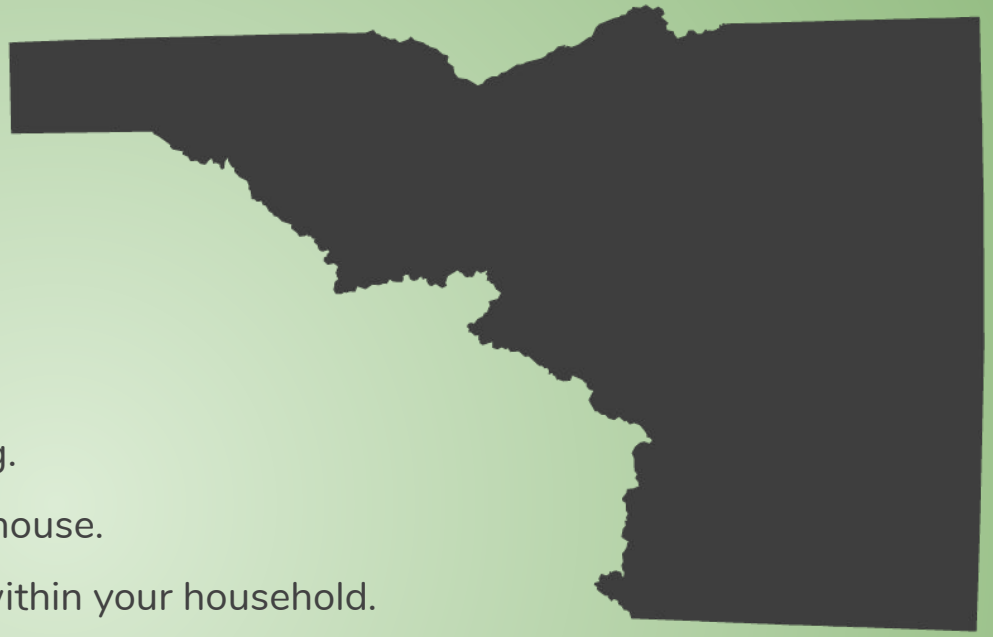
- Manage recharge is when surface water or treated wastewater is intentionally added to an aquifer or the zone of saturation below the water table.
- Can be done through injection wells or applying water to land surface, allowing infiltration into the water table.
- Excess water should be used to recharge the aquifer so there will be more there for later years.
- Recharge zones are monitored to track the water quality and amount of water in the aquifer.
- There are many recharge zones throughout Idaho.

Solutions

- Monitor statewide water levels and health above and below ground.
- Practice responsible water use and management strategies.
- Maintain stands of Whitebark Pine to hold snowpack.
- Keep stream and riparian areas healthy and intact.
- Recharge the Aquifer with unused and excess surface water.



Local Support



Support your local waterways by:

- Using desert or native landscaping.
- Limit extra water use within your house.
- Upgrade to low-flow appliances within your household.
- Increase organic matter through farming practices, grow low water consuming fruits and vegetables in your garden.
- Stay updated with new technology to increase water efficiency and decrease your water footprint.

Resources

http://www.deq.idaho.gov/media/522428-managed_recharge_faqs.pdf

http://www.fao.org/soils-2015/news/news-detail/en/c/326283/

https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_010130.pdf

https://www.fs.fed.us/psw/publications/mcpherson/psw_2016_mcpherson001_livesley.pdf

https://climate.nasa.gov/climate_resources/24/graphic-the-relentless-rise-of-carbon-dioxide/

https://www.youtube.com/watch?time_continue=1347&v=2xLVT2jOAGw&feature=emb_logo