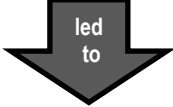



# Aim: What causes the reduction in soil quality and arable land?

**ARABLE LAND** – land capable of being plowed and used to grow crops (U.S. #1)

<p><b>1. SOIL EROSION</b></p>	<p>soil erosion = movement of soil components – especially surface layers (O and A) in the U.S., soil is eroded 16X faster than it forms</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p><u>Natural Agents of Erosion</u></p> <p>water wind gravity ice (glaciers)</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p><u>Anthropogenic Causes of Erosion</u></p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; width: 60%;"> <p>deforestation overgrazing logging farming construction</p> </div> <div style="font-size: 2em; margin: 0 10px;">}</div> <div style="border: 1px solid black; padding: 5px; width: 35%;"> <p>anything that destroys plants which help anchor soil in place</p> </div> </div> </div> </div> <p><u>Associated Negative Effects</u> - soil is less fertile, less able to retain water sediment causes water pollution, less drinkable water, kills fish, increases flood potential</p> <p>1930's <b>Dust Bowl</b> – Great Plains poor cultivation practices (plowing and overgrazing) and prolonged drought (1926-1934)</p> <div style="text-align: center;">  </div> <p>1935 <b>Soil Erosion Act</b> – established the <b>Soil Conservation Service (SCS)</b> which promoted sound soil conservation practices</p> <div style="text-align: center;">  </div> <p>1994 – SCS name changed to <b>National Resources Conservation Service (NRCS)</b> – reflects broader mission to improve, protect, and conserve natural resources (with a focus on agriculture)</p>
<p><b>2. SALINIZATION</b></p>	<ul style="list-style-type: none"> <li>- saltwater intrusion into soils</li> <li>- natural weathering of rocks and minerals</li> <li>- accumulation of salts from irrigated water</li> <li>- stunts growth and lowers crop yield</li> <li>- most impact: Australia, Arabian Peninsula, China</li> </ul> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: auto; margin-top: 10px;"> <p>as water flows over surface, it picks up salts that get deposited in the farmland when water evaporates</p> </div>
<p><b>3. DESERTIFICATION</b></p>	<ul style="list-style-type: none"> <li>- decline in agricultural potential of semiarid lands (arable → desert)</li> <li>- caused by overgrazing, deforestation, irrigation practices that increase erosion all of which cause a lack of water retention</li> <li>- most impact: Africa</li> </ul>
<p><b>4. WATERLOGGING</b></p>	<ul style="list-style-type: none"> <li>- irrigation water or precipitation saturates soil</li> <li>- water table rises to root levels – restricts air flow and “suffocates roots”</li> <li>- root rot</li> </ul>