

**High School – Lesson 3 Lesson Plan**
**Theme:** Biodiversity

**Subject:** Physical, Life, and Social Sciences

<b>Objective</b>	Students understand the interconnected relationship between living and nonliving organisms in the River ecosystem.
<b>Standards</b>	<p><b>LS 6.e.</b> Students know a vital part of an ecosystem is the stability of its producers and decomposers.</p> <p><b>LS 8.b.</b> Students know a great diversity of species increases the chance that at least some organisms survive major changes in the environment.</p> <p><b>HS-ESS3-1.</b> Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.</p> <p><b>HS-ESS3-3.</b> The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources.</p>
<b>Vocabulary</b>	<p><b>Biodiversity</b> Variety of species of plants or animals in an environment.</p> <p><b>Habitat</b> A place where something or someone lives.</p> <p><b>Ecosystem</b> A community of living and non-living things interacting with their environment.</p> <p><b>Native species</b> A species that is naturally found in that habitat.</p> <p><b>Non-native species</b> A species that is <i>not</i> naturally found in that habitat. Can be brought into the habitat by animals, people, or naturally (wind, scat).</p> <p><b>Invasive species</b> A species that is non-native and harmful to the habitat. It takes resources from native species (space, sunlight, water, food).</p> <p><b>Food Chain</b> A linear transfer of energy within an ecosystem</p>

	<p><b>Food web</b> A series of interconnected food chains that show how organisms in an ecosystem transfer energy.</p>
<p><b>Materials</b></p>	<ul style="list-style-type: none"> <li>● Projector</li> <li>● Lesson 3 powerpoint</li> <li>● Worksheets</li> <li>● Web of Life cards and string for activity</li> </ul>
<p><b>Key Points</b></p>	<ul style="list-style-type: none"> <li>● Biodiversity was, and still is, affected by changes in the River web of life; this change can be attributed to human impact (cause and effect relationships).</li> <li>● Human impact has altered the environment and affected organisms' ability to reproduce and survive. Impacted species die or migrate to find resources. Some have adapted, like the native coyote.</li> <li>● Native species (like the ones on the biodiversity cards) have been replaced by, and have competed for habitat with, non-native and invasive species that adapted to the changing environment. Non-native species were brought into the LA River habitat by humans, spread through scat, or through migration patterns (Canadian Geese).</li> <li>● Food chains connect to form a food web, a system similar to a web of life. Without a single component of the food web, the system may not function.</li> <li>● The web of life of the LA River has been disrupted by human use through loss of habitat, introduction of non-native/invasive species, chemical contamination, and a lack of nature based solutions.</li> <li>● Humans can impact the ecosystem positively.</li> </ul>
<p><b>Possible Extensions</b></p>	<ul style="list-style-type: none"> <li>● Web of Life activity</li> <li>● Understanding Macroinvertebrates activity</li> </ul>