

**LESSON 5: APPALACHIAN STREAM CONSERVATION**

**MIDDLE SCHOOL STANDARDS ADDRESSED:**

Virginia	<p><b>LS.10: The student will investigate and understand that ecosystems, communities, populations, and organisms are dynamic, change over time, and respond to daily, seasonal, and long-term changes in their environment. Key concepts include</b></p> <ul style="list-style-type: none"><li>a) phototropism, hibernation, and dormancy;</li><li>b) factors that increase or decrease population size; and</li><li>c) eutrophication, climate changes, and catastrophic disturbances.</li></ul> <p><b>LS.11: The student will investigate and understand the relationships between ecosystem dynamics and human activity. Key concepts include</b></p> <ul style="list-style-type: none"><li>a) food production and harvest;</li><li>b) change in habitat size, quality, or structure;</li><li>c) change in species competition;</li><li>d) population disturbances and factors that threaten or enhance species survival; and</li><li>e) environmental issues.</li></ul>
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**HIGH SCHOOL STANDARDS ADDRESSED:**

Virginia	<p><b>BIO.8: The student will investigate and understand dynamic equilibria within populations, communities, and ecosystems. Key concepts include</b></p> <ul style="list-style-type: none"><li>a) interactions within and among populations including carrying capacities, limiting factors, and growth curves;</li><li>b) nutrient cycling with energy flow through ecosystems;</li><li>c) succession patterns in ecosystems;</li><li>d) the effects of natural events and human activities on ecosystems; and</li><li>e) analysis of the flora, fauna, and microorganisms of Virginia ecosystems.</li></ul>
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