

Research projects suitable for Science, Social Studies, and English Language Arts

Objective: students will compare farm versus city life and the state of our natural resources now to a century ago during John Burroughs's lifetime.

John Burroughs grew up on a farm in Roxbury, New York. As an adult he became friends with some of the leaders in the industrial age who created factories for manufacturing some of the major polluters in our lifetimes, such as Henry Ford and his automobile. As factories, large and small, became centered around cities, urban areas grew as people left their farms to earn a living. In 1921 Burroughs described one such industrial city—Pittsburg, Pennsylvania, famous for its manufacture of steel—as “a city that sits with its feet in or very near the lake of brimstone and fire, and its head in the sweet country air of the hill-tops” and that “we live in an age of iron and have all we can do to keep the iron from entering our souls” (“A Strenuous Holiday,” *Under the Maple*; Walker, p. 184).

A century ago John Burroughs wrote about his ecological concerns for the planet: “From one point of view, what a ruin the globe is!—worn and crumbled and effaced beyond recognition, had we known it in its youth. Where once towered mountains are now only their stumps—low, fertile hills or plains. Shake down your great city with its skyscrapers till most of its buildings are heaps of ruins with grass and herbage growing upon them, and you have a hint of what has happened to the earth. Again, one cannot but reflect what a sucked orange the earth will be in the course of a few more centuries. Our civilization is terribly expensive to all its natural resources; one hundred years of modern life doubtless exhausts its stores more than a millennium of the life of antiquity. Its coal and oil will be about used up, all its mineral wealth greatly depleted, the fertility of its soil will have washed into the sea through the drainage of its cities, its wild game will be nearly extinct, its primitive forests gone, and soon how nearly bankrupt the planet will be!” (“The Grist of the Gods,” *Leaf and Tendril*, 1908)

Burroughs, John. “The Grist of the Gods.” *The Art of Seeing Things: Essays by John Burroughs*. Ed. Charlotte Zoe Walker. Syracuse, NY: Syracuse University Press, 2001. 138.

Assessments:

Research how life has changed since John Burroughs's time and what the effect has been on the environment. Write your results in a paper and present to the class.

Write about your local environment, including descriptions of nearby animals, water, and trees. How do you interact with your surroundings?

Objective: students will discuss how water gets from the Catskill Watershed to New York City, how much is used everyday, and how the water is prepared to be drinkable. This process will be compared to other areas in this country and the world, including the desert area of Las Vegas and the densely populated areas of China.

John Burroughs was born and raised in Roxbury, New York in the heart of the Catskill Watershed. A watershed is “the area that drains to a common waterway, such as a stream, lake, estuary, wetland, aquifer, or even the ocean”

(<http://www.epa.gov/owow/watershed/>). According to the Catskill Watershed Corp., “Ninety percent of the 1.3 billion gallons of water consumed daily by 9 million residents of New York City and suburban communities comes from six reservoirs in the five-county Catskill Mountain/Delaware River Region of New York State”

(http://www.cwconline.org/about/ab_index.html). John Burroughs was an avid trout fisher all his life and found special pleasure in the bodies of water around his home in the Catskills, particularly in the spring, his favorite season. In 1886 John Burroughs wrote in “A Spring Relish” in his book, *Signs and Seasons*:

“The little brown brooks,-how swift and full they ran! One fancied something gleeful and hilarious in them. And the large creeks,--how steadily they rolled on, trailing their ample skirts along the edges of the fields and marshes, and leaving ragged patches of water here and there! Many a gentle slope spread, as it were, a turfy apron in which reposed a little pool and lakelet. Many a stream send little detachments across lots, the sparkling water seeming to trip lightly over the unbroken turf. Here and there an oak or an elm stood knee-deep in a clear pool, as if rising from its bath. It gives one a fresh, genial feeling to see such a bountiful supply of pure, running water. One’s desires and affinities go out toward the full streams. How many a parched place they reach and lap in one’s memory! How many a vision of naked pebbles and sun-baked banks they cover and blot out! They give eyes to the fields; they give dimples and laughter; they give light and motion. *Running water!* What a delightful suggest the words always convey! One’s thoughts and sympathies are set flowing by them; they unlock a fountain of pleasant fancies and associations in one’s memory; the imagination is touched and refreshed.” (Burroughs, John. *Signs and Seasons*. Ed. Jeff Walker and with critical commentary. Syracuse, NY: Syracuse University Press, 2006. 190-191.)

Over a century later, what is the status of our water supply? How do we prepare safe drinking water and transport it over long distances, such as from the Catskill Watershed where Burroughs grew up? How do cities such as Las Vegas, surrounded by desert, get their water supply or large countries, such as China? How do weather patterns and global warming affect watersheds?

Assessments:

Research the answers to these questions and write a paper to present to the class.

Write about the bodies of water that you have seen and how they affected you. Read it to the class.