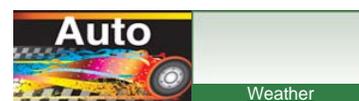


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Baseline shifts prove tough to read



Ecosystem changes can be attributed somewhat to public's failure to notice

By Andy Lee Roth May 10, 2013 12:00 am

How do we measure health? If we're talking about a human being, then one measure of it is temperature. Fever, for example, can be a symptom of medical conditions including flu, mononucleosis or malaria. Concerned parents and medical professionals measure temperature with a thermometer and use 98.6 degrees Fahrenheit as a baseline.

Measuring the health of an ecosystem is much more difficult by comparison. If we define an ecosystem as a community of living and non-living things that work together, then what tools do we have to measure an ecosystem's health, and what baselines do we use?

These questions matter to anyone interested in environmental protection. A determination of an ecosystem's health or degradation depends on what baseline we use. Efforts to rehabilitate degraded ecosystems depend on some baseline, whether explicitly stated or tacitly understood, to define the end goal.

In the mid-1990s, fishery biologists led by Dr. Daniel Pauly developed the concept of "shifting baselines" to describe changes over time in expectations about what constituted a healthy ecosystem. In simple terms, a shifting baseline means "failure to notice change."

One original example of shifting baselines involved salmon populations in the Pacific Northwest's Columbia River. In the 1990s, biologists determined the Columbia's salmon population was twice as great as in the 1930s. This sounded like a tremendous success for efforts to restore the Columbia's salmon. However, the 1990s population was only 10 percent of that found in the river during the 1800s.

When we lose track of earlier conditions – such as the 1800s salmon population – we are subject to a shifting baseline. When change occurs slowly, over a long period of time, we may not notice it. A few elders might say, "You should've seen it back in the old days," but most people will lack direct experience with those earlier conditions. As Pauly stated in a 2010 TED Talk, "We transform the world, but we don't remember it."

Some animal species are abundant, like deer; others are rare, like California's protected mountain lions. And still, other species have become extinct. Except in extraordinary cases, abundant species do not become extinct. It's the rare species, or more accurately, the species that have become rare that face extinction.

This shapes our perceptions of extinction as a problem. We might be more concerned about an ecosystem's health if abundant species became threatened with extinction. But, when only rare species face this ultimate threat, we often fail to recognize the significance of their loss as an indicator of the ecosystem's health.

We're less surprised if we learn the Ivory-Billed Woodpecker has become extinct because it's been rare for our entire lifetimes: We've never seen one and perhaps never even heard of them.

In 1922, the last California grizzly bear was shot. How many Californians alive then remembered a time when grizzlies were abundant in our state? How many people today know grizzlies once inhabited all of California, except for sparse desert areas in eastern Modoc and Lassen Counties and the California desert? When we lose track of earlier conditions, our baselines shift, and we are more likely to accept degradations that in the past would have been unacceptable.

The idea of shifting baselines suggests two basic lessons. First, local efforts to document both current and historic environmental conditions are essential. Second, broadening the idea of shifting baselines beyond environmental issues raises interesting questions. Sociologically, shifting baselines affect our everyday lives. Consider, for example, slow but profound changes in these three fundamental spheres:

- The consolidation of wealth and its impact on our health, families and communities;
- The erosion of civil liberties since 9/11;
- The concentration of media ownership and resulting loss of diversity in news content.

In both environmental and sociological applications, awareness of shifting baselines underscores how knowledge of the past is crucial. We cannot make informed decisions in the present unless we have some understanding of past conditions.

What baselines would you use to measure health in your own life and in the life of your community?

Note: Previous articles in The Community Voice are useful on this topic. See, for example, Laura Watt's Nov. 3,

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2011 column, "What is restoration, anyway?" on the language we use to discuss ecosystems' health; and Jenny Blaker's Sept. 1, 2011 article, "The changing landscape of the Laguna in Cotati since 1953," as one example of documenting past conditions. Both articles are available online at www.cotaticreekcritters.info/press.htm.

Andy Lee Roth, Ph.D., is associate director of Project Censored and teaches sociology at Sonoma State University and the College of Marin.

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Mailing Address: P.O. Box 2038 Rohnert Park, CA 94927 **Office:** 100 Professional Center Dr., Rohnert Park, 94928 **Phone:** 707-584-2222

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