

AN ENVIRONMENTAL MEMORY IS CRITICAL FOR EFFECTIVE CONSERVATION

by Peter Doherty

When I was eight or so my mother would often leave me at the old Children's Museum of Hartford, Connecticut during inclement weather. In the dark, ornate central room on the first floor behind glass there was a collection of bird mounts, nests and eggs. Gathered during the days of shotgun ornithology (and oology) the collection was impressive. It included warblers, thrushes, tanagers, raptors, woodpecker, cuckoos and sparrows. Some were familiar to me; most were not. Also on display was a tattered, disheveled Passenger Pigeon on a perch along the back wall. I gazed at that extinct bird for hours.

In childhood Cape Cod summers of the 1950s, Dunbar Point at the entrance to Lewis Bay (now part of Kalmus Park) was a sand spit without a breakwater. Nearby Egg Island was an active tern colony with several fisherman's shacks; soon starved of sand by the "new" breakwater and active channel dredging, Egg Island quickly became a shoal. Between Labor Day and Memorial Day there was a single, functioning stop light on Main Street, Hyannis. Save two, all the summer houses in Hyannis Port stood dark come winter.

The above is a child's outline of his environmental baseline. What is your baseline? We each have one; over time it may shift or be lost or misplaced in our memory. Our baseline is reflected in our behavior and in the actions of the institutions of our society. It is critical to our daily lives, our communities, our country and our planet.

In 1995 fisheries biologist Daniel Pauly coined the term "shifting baseline syndrome" to describe the bias which necessarily arises from assessments based upon personal experiences. In the context of fisheries management Pauly wrote:

"Essentially, this syndrome has arisen because each generation of fisheries scientists accepts as a baseline the stock size and species composition that occurred at the beginning of their careers, and uses this to evaluate changes. When the next generation starts its career, the stocks have further declined, but it is the stocks at that time that serve as a new baseline. The result obviously is a gradual shift of the baseline, a gradual accommodation of the creeping disappearance of resource species, and inappropriate reference points for evaluating economic losses resulting from overfishing, or for identifying targets for rehabilitation measures."

Aspects of environmental change beyond the personal are available through science and the "human" record. For example, bog pollen cores, ice cores and tree ring samples give information of past climatic and botanical conditions. The written, artistic and photographic record gives a glimpse at what once was, be it on Cape Cod or in New

England, the American prairie or the West. When viewed together, a broader environmental baseline can be gleaned by eco-historians.¹ However, many scientific disciplines lack data concerning the past and the human record is often incomplete (and seen through eyes of different cultural values and time). Through a lens tinted by the importance of healthy ecosystems and biodiversity to human existence, I would like to think that given a second-chance, “we” would have ditched fewer saltmarshes, filled or drained fewer wetlands, shot fewer bison, curlew, parakeets, predators and pigeons, egged fewer seabird colonies, tamed fewer rivers, left in tact extensive old growth timber tracts and native prairie and not viewed dead birds as high fashion for women’s hats.²

Of course, I am dreaming. A recent British paper gives credence to a sociological, Pauly corollary—simply stated, an individual’s perception of the environment is determined by what he/she sees now, with their own eyes, and does not take into account what things were like in the past.³ Even in the recent past, say a generation! The paper discusses shifting baselines within the context of: (1) general amnesia (“... individuals setting their perceptions from their own experience, and failing to pass their experience on to future generations”) and (2) personal amnesia (“... individuals updating their own perception of normality; so that even those who experienced different previous conditions believe that current conditions are the same as past conditions”). The paper considers three well-quantified examples: (a) updating perceptions of bushmeat hunters in Gabon, (b) changing perceptions of bushmeat hunters in Equatorial Guinea and (c) shifting baseline syndrome in perception of bird population trends in the UK. One of the authors stated: “Our survey results indicate that the baseline has shifted in [the UK] village: in the course of a generation, changes in bird populations have been collectively 'forgotten' by the community. If this trend continues, this knowledge will be lost altogether in a couple more generations, and people will have little idea that their local wildlife was ever any different to what they see today with their own eyes... This is a worry because it means people will more readily accept a degraded environment, if they do not know things were any better in the past.”⁴

My experience over the past three springs during which I have managed a migratory songbird banding station at First Landing State Park in Virginia Beach, Virginia for the Coastal Virginia Wildlife Observatory confirms, in part, the British study. The Park, which lies along the Chesapeake Bay just west of Cape Henry, was built by the Civilian Conservation Corps during

¹ E.g. Cronon, William. **Changes in the Land: Indians, Colonists, and the Ecology of New England** . New York : Hill and Wang, 1983. Whitney, Gordon. **From Coastal Wilderness to Fruited Plain: A History of Environmental Change in Temperate North America 1500-Present**. Cambridge : Cambridge University Press, 1994.

² See, Cokinos, Christopher. **Hope Is the Thing with Feathers: A Personal Chronicle of Vanished Birds**. Warner Books, 2001.

³ <http://www3.interscience.wiley.com/cgi-bin/fulltext/122200416/PDFSTART>

⁴ http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_13-2-2009-11-53-53?newsid=57375

the New Deal when Virginia Beach was a lazy summer community at the end of a rail line from Norfolk. Today the Park is a 3,000 acre oasis of loblolly pine, live oak, Spanish moss, cypress swamp, salt marsh and beach isolated by interstate highways and commercial, residential and military uses in Virginia's largest urban area.

Yet, one hundred twelve different species of birds have been banded at the station, ninety or so each spring. Absent from the list are Northern Mockingbird, European Starling and House Sparrow, each common outside the Park. Indeed, the three are neither heard nor seen at the station. Instead, our most frequently seen and banded birds are Gray Catbird, Swamp Sparrow, Ruby-crowned Kinglet, Blue-gray Gnatcatchers, Hermit Thrush and a group of migrant warblers: Common Yellowthroat, Magnolia, Black-throated Blue, Blackpoll, Myrtle and American Redstart. Of the hundreds of adults and children who visit the station annually, only a small fraction, usually older residents, can identify any of the Park's most "common" species.

With the human memory of their environment so fleeting, how may individuals, conservation organizations or government officials generate support for initiatives intended, directly or indirectly, to expand, preserve, protect or restore ecosystems and biodiversity? What short and long-term actions may CCF, land trusts and private and public land managers undertake to build, expand or reconstruct an environmental memory through their holdings?

These are difficult questions and must be addressed in a comprehensive manner. Building an accurate environmental narrative of photographs, journals, news accounts and generational remembrances can be useful and is inclusive. Only when undertaken in concert with traditional scientific (and "citizen-science" activities) designed to disclose changes in biodiversity and environmental quality, however, can an accurate baseline be derived. Organizations like CCF must begin (or continue with greater urgency) to monitor and evaluate their holdings in a comprehensive manner for year-around presence and absence of species, breeding success or failure, winter fidelity, migratory use and overall environmental quality. Management of holdings with invasive or rare species (or habitat suitable for rare species) should be considered and renovation undertaken when appropriate. A policy concerning habitat succession on holdings with grassland/saltmarsh/fresh water wetlands should be formulated. A partnership including long-term, local residents and historical groups with knowledge of past history and uses of CCF holdings should be fostered and documented in a *Foxfire* manner. In building an environmental memory, CCF and similar organizations can build a conservation ethic within the community now and an environmental memory to guide future residents.

