



Shasta Lake reservoir, 2010, from *Riparian*. PHOTOGRAPH BY BARRON BIXLER.



GLEN M. MACDONALD

John Muir

A century on

John Muir, the grand old man of the Sierra Nevada, died 100 years ago in a Los Angeles hospital bed with only an unfinished book manuscript for company.¹ He was seventy-six years old. In the final year of his life he had been stung by betrayal, losing the fight of his life: his beloved Hetch Hetchy Valley in Yosemite would soon be dammed to serve the water and power demands of a booming San Francisco.² Yet, here he was, still proselytizing—from his deathbed—on the wonders of nature.

A century later, is anyone still listening?

In his time Muir was a hugely popular writer, environmental activist, and a well-regarded scientist. But how many people actually read his works today? I suspect that most people recognize his name only from the parks, trails, and schools that bear his name. Although his writing was enormously popular in its day, it is somewhat florid to modern ears, as in this passage on Yosemite: “The rose light of dawn creeping higher among the stars, changes to daffodil yellow; then come the enthusiastic sunbeams pouring across the feathery ridges, touching pine after pine, spruce and fir, libocedrus and lovely sequoia, searching every recess until all are awakened and warmed.”³ Likewise, his scientific work was groundbreaking at the time, but today is considered more in line with good natural history than science.

Still Muir’s influence may be felt by every Californian in the vast lands that have been set aside for wilderness, parks, and conservation areas. His science may have faced some revisions⁴, but Muir’s philosophy is still fundamental to our perceptions of what nature is, why it should be valued, and how it must be managed.^{5,6} How relevant is that philosophy today? Muir’s power to inspire his contemporaries—from presidents

BOOM: The Journal of California, Vol. 4, Number 3, pps 60–69, ISSN 2153-8018, electronic ISSN 2153-764X. © 2014 by the Regents of the University of California. All rights reserved. Please direct all requests for permission to photocopy or reproduce article content through the University of California Press’s Rights and Permissions website, <http://www.ucpressjournals.com/reprintInfo.asp>. DOI: 10.1525/boom.2014.4.3.60.



Abandoned windbreak, 2007, from *LA Environs*. PHOTOGRAPH BY BARRON BIXLER.

on down—was nearly supernatural. Can the old man still move us to deep contemplation or raise our hackles in passion about what nature is and how we treat it?

Muir believed that nature revealed the hand of the creator and was, therefore, superior to the works of man. He believed that animals, plants, and even rock formations must be protected against wanton destruction. In turn, immersion in wilderness, he believed, is important for the physical and spiritual health of human beings. As he wrote in his book on national parks, “Thousands of tired, nerve-shaken, over-civilized people are beginning to find out that going to the mountains is going home; that the wilderness is a necessity; and that mountain parks and reservations are useful not just as fountains of timber and irrigation waters, but as fountains of life.”⁷ Preserving nature is a life-sustaining *quid pro quo*.

Muir feared that state and local governments could be induced by powerful special interests to sell off the nation’s wild lands, so he campaigned for a strong national park

system. His direct efforts led to the creation of Yosemite and Sequoia National Parks in 1890, and the model he advanced resulted in the addition of seven other national parks in California, from Lassen in 1916 to Pinnacles in 2013. Add to this the many other National Park Service lands, such as the Santa Monica National Recreation Area and the Point Reyes National Seashore, and there is a total of 7,599,139 acres of national park lands in California. In total, the federal government controls 44,087,309 acres of California, a staggering 43 percent of the state.⁸

But federal agencies weren’t always protection-minded enough for Muir. He had a very public falling out with Gifford Pinchot, first chief of the US National Forest Service. Their initial parting was over Pinchot’s support of sheep grazing on forestlands, and the schism intensified when Pinchot became a leading advocate for the Hetch Hetchy reservoir proposal. During that battle, Muir declared: “Pinchot seems to have lost his head in coal and timber conservation, & forgotten God and his handiwork.



Burning Agricultural Debris, 2013, from *A New Pastoral: Views of the San Joaquin Valley*. PHOTOGRAPH BY BARRON BIXLER.

He has been our worst enemy in our park fight.”⁹ At that time, wilderness “preservationists” like Muir often battled with “conservationists” such as Pinchot who believed the primary role of the nation’s forests was more utilitarian—to provide timber and other resources—rather than spiritual. Utilitarian or not, the Forest Service has protected millions of acres of California forestland.

The Sierra Nevada still holds one of the most alluring places on Earth in the Yosemite Valley. East of the Sierra Crest, the oldest living trees in the world still cling to the peaks of the White Mountains. Mount Shasta in the north remains majestic, snowcapped, and forest clad. The world’s tallest trees, redwoods, still march down to the sea from ancient strongholds in Del Norte and Humboldt Counties. Much of the Mojave Desert is as remote and eerily beautiful as a century ago. California remains a state of unsurpassed natural grandeur and incredible natural diversity. The preservation of these lands over the past century would have delighted Muir, I am sure, even while problems familiar

to him remain. Wild and semiwild landscapes continue to disappear under development. Managing tourists in Yosemite remains a complicated challenge. San Francisco keeps its grip upon Muir’s beloved Hetch Hetchy Valley.

But other modern challenges dwarf these concerns. Expected upheaval from climate change and a growing population larger than anything Muir could have imagined threaten the very heart of his preservationist, wilderness-centric vision for California. At present rates of greenhouse gas production, the average global temperature will likely increase by around 7 degrees Fahrenheit by the end of the twenty-first century. In California, the impact of this anthropogenic climate change will vary by location and season. Yosemite and the High Sierra could experience an increase of 5 degrees in winter temperatures and 7 degrees in summer temperatures. The annual Sierra snowpack will decrease and the timing of snowmelt will advance earlier into spring.^{10, 11, 12} As the Sierra Nevada warms, many botanical life zones will shift upward. Subalpine conifer woodlands



Tree in Field, 2006, from *A New Pastoral: Views of the San Joaquin Valley*. PHOTOGRAPH BY BARRON BIXLER.

and lodgepole pine forest will replace significant portions of the alpine vegetation that Muir studied.¹³

The ramifications of these climatic changes should not be underestimated. In 1871, Muir discovered Black Mountain Glacier in the Sierra Nevada.^{14,15} By 1977 it had vanished.¹⁶ Today there are 122 mapped glaciers in the Sierra Nevada, and an analysis of fourteen of them shows that since Muir's time they have shrunk by 31 to 78 percent. If current warming and melting trends continue, every single Sierra Nevada glacier could be gone sometime over the next 50 to 250 years.¹⁷

Prolonged drought can cause the direct mortality of vulnerable trees, and it can also weaken their defenses against pathogens such as pine bark beetles.¹⁸ The beetles benefit from weakened trees, and they move to higher elevations and regenerate faster due to the higher temperatures. The desiccated, dead, and dying trees in turn provide fuel that promotes larger and more intense fires.

Here, both Muir and Pinchot bear some responsibility. They saw forest fires as a threat to the natural beauty and

harmony of the forest, on one hand, and on the other, to the value of timber reserves. The Forest Service and other agencies made an intense effort to put out all forest fires, but fire is a natural part of western conifer forests. Periodic fires keep fuel loads low and stands of trees thinned out, which reduces the spread of diseases and pathogens such as the bark beetle. A century of vigorous fire suppression coupled with climate change has fostered conditions that promote more destructive fires.^{19,20}

It is clear that Muir's goal of preserving nature exactly as it was in a specific moment of time is not only impossible but can be deeply harmful to ecosystems. Such an ethos will not serve us in dealing with the environmental challenges of the twenty-first century. We must be adaptable, understanding that some places we love deeply will indelibly change. We must be open to the new natures that will develop—novel and unanticipated combinations of climate, landscape, and species.²¹

Preservationist though he was, I think Muir would have understood this. Through his writings on ancient glaciations



Tree, Terraformed Mountain and Industrial Buildings, 2007, from *LA Environs*. PHOTOGRAPH BY BARRON BIXLER.

and the Pleistocene history of giant sequoia, he showed a keen interest in changes in climate, landscapes, and forests. The questions he asked and connections he sought to make are the same ones modern climate change scientists ask when assessing the prospects for thousands of endangered species: “Is this species verging on extinction? And if so, then to what causes will its extinction be due? What have been its relations to climate, soils, and other coniferous trees with which it is associated, or with which it competes? What are those relations now? What are they likely to be in the future?”²²

At the time of Muir’s death, the population of California stood at three million people. Today the population tops thirty-eight million.²³ By 2050 it is expected to grow to over fifty million.²⁴ Although the Sierra Club—in which Muir served as founding president—has had a history of strong views among some members favoring curtailing immigration and stemming population growth, I don’t think this would have been Muir’s way. In 1901 he wrote, “The United States Government has always been proud of the welcome it

has extended to good men of every nation, seeking freedom and homes and bread. Let them be welcomed still as nature welcomes them, to the woods, as well as to the prairies and plains. No place is too good for good men, and still there is room.”²⁵ After all, Muir was an immigrant himself.

Yet he could also sympathize with disdain some felt for the masses of tourists who came to Yosemite to briefly view its wonders and then depart without any evidence of a greater spiritual awareness. “All sorts of human stuff is being poured into our valley this year. & the blank fleshly apathy with which most of it comes in contact with the rock & water spirits of the place is most amazing. I do not wonder that the thought of such people being here makes you ‘mad,’” he wrote to a correspondent in 1870. But Muir was also tolerant. His letter continued, “after all Mrs Carr, they are about harmless they climb sprawlingly to their saddles.”²⁶

Visitor numbers and their impact on Yosemite and other national parks and wilderness areas remains hotly contested today. The number of visitors to Yosemite has risen to



Brownfield Site, 2007, from *A New Pastoral: Views of the San Joaquin Valley*. PHOTOGRAPH BY BARRON BIXLER.

almost 3.7 million each year. Karen Klein, in the *Los Angeles Times*, wrote of Yosemite Valley: “Cars vie for empty spots along the road, and throngs of tourists march along paved paths to the chief attractions, where they almost invariably ignore signs to stay off the rocks. The parking lots are jammed; the concessions are located for convenient shopping, dining, and lodging; and the campground is so crammed with shoulder-to-shoulder tents that it looks more like a ripstop ghetto than the site of a nature experience. Surely this isn’t what Muir had in mind either.”²⁷

What did Muir have in mind? I cannot find in his writings any definitive guidance for striking a balance between tourism and preservation, or people’s needs for living space and wilderness, or which lands should be developed and which should be preserved. Muir fought to preserve what he personally found beautiful and otherwise interesting. In general, this meant scenic mountains and forests. Muir’s bias has remained in place and influenced the selection of national parks over much of the past century. But in the

twenty-first century, as we become more sensitive to the preservation of biodiversity and understand how geography and genetics shape species, the limitations of Muir’s seemingly subjective criteria have become more and more apparent. The geographic areas that support species that we hope to preserve may shift outside the borders of our current parks as the climate changes. At the same time, increasing demands on resources will mean that economic and resource constraints that are imposed by setting aside lands will need to be carefully balanced. We need a new set of criteria for preservation and conservation, which in our time have come closer to meaning the same thing.

Will Muir’s legacy—the current national park system and network of other federally protected wilderness areas—survive through the twenty-first century? It will depend on our capacity and will. In 1914, the US federal debt stood at about 4 percent of the nation’s gross domestic product. Today the public federal debt stands at 70 percent of GDP.²⁸ It comes as no surprise that in a time of declining governmental financial



Orchard and Irrigation Ditch, 2007, from *A New Pastoral: Views of the San Joaquin Valley*. PHOTOGRAPH BY BARROM BIXLER.

capacity some conservative politicians have called for the sale of some of our national parks and other federal lands.

Muir knew there would always be those who disagreed with his preservation values. He had an innate distrust of the elite and particularly the economically powerful. What kept him going was a faith in the transformative power of exposure to nature. He believed that visiting places like Yosemite would promote greater health and happiness for the American population and greater public support for parks. His message was tailored to the Anglo-American world of a century ago. That strategy worked, and the US national park system is its fruit.

But, today, we see a worrying trend. With the nation's changing ethnic demography and economics some researchers predict that this could lead to a decrease in the proportion of Americans visiting wilderness areas and parks such as Yosemite.²⁹ One wonders if this could ultimately lead to an erosion of broad public support for parks, wilderness, and conservation.

Bringing more people to Yosemite—as Muir might have suggested—may no longer be the best way to ensure societal

value of the natural world. An alternative is to bring nature to people through urban parks, open spaces, and wildlands at the edges of cities. This can be done in a way that sets aside new land for conservation that is accessible for an urban population and affordable for cash-strapped agencies to oversee, as we've seen with the Santa Monica Mountains Conservancy in Los Angeles. Through a joint partnership of federal, state, and local government and private parties, 450,000 acres have been put aside for conservation and recreational uses. The capacity and cost for management is shouldered by multiple partners making the costs more affordable for each. In many ways, this is a model for the future. This experience of nature may be different than Muir envisioned in his preoccupation with remote wilderness parks such as Yosemite, but he was an innovator and a realist. I think he would have seen the value in such arrangements.

I think we can find practical solutions to twenty-first century conservation problems very much in the spirit of Muir's work. But what about Muir's work itself? Can his writings and deeds



Salton Sea, 2007, from *LA Environs*. PHOTOGRAPH BY BARRON BIXLER.

continue to excite and incite despite the century between us? I've read much of what Muir wrote. His unbridled enthusiasm for the mountains and forests of California is at once naïvely optimistic by modern standards and completely infectious. It made us remember the same naïve exuberance of childhood and adolescent adventures in Yosemite and the Sierra.

I also reflected upon his darker writings regarding Hetch Hetchy and the loss of that battle in the final year of his life. I thought about how he might have retained his faith that the people were with him even if the vested interests were not. Yet In 2012 when San Franciscans voted on a proposal to study the potential to restore Hetch Hetchy Valley, 77 percent rejected the idea. Muir would have been crushed.

I imagine him raging again: "These temple destroyers, devotees of ravaging commercialism, seem to have a perfect contempt for Nature, and, instead of lifting their eyes to the God of the mountains, lift them to the Almighty Dollar. Dam Hetch Hetchy! As well dam for water-tanks the people's cathedrals and churches, for no holier temple has ever been consecrated by the heart of man."³⁰ **B**

Notes

Thanks to Hollis Lenderking, UCLA Class of 1971, for his vision and generous endowment of the John Muir Memorial Chair in Geography at UCLA and support for this issue of *Boom* and the Muir Symposium, "A Century Beyond Muir." Thanks to my parents, Walter and Mildred MacDonald, for taking me to Yosemite over the years and through the seasons and thus planting the seeds that led to a life of working in the Sierra Nevada and many other wild places around the world.

- ¹ Historical facts regarding and insights into the life and philosophy of John Muir are drawn from Edwin Teale, *The Wilderness World and John Muir* (Boston: Houghton Mifflin Company, 1954); Holway Jones, *John Muir and the Sierra Club: The Battle for Yosemite* (San Francisco: The Sierra Club, 1965); James Clarke, *The Life and Adventures of John Muir* (San Diego: The Word Shop, Inc., 1979); Dennis Williams, *God's Wilds: John Muir's Vision of Nature* (College Station: Texas A&M Press, 2002); Donald Worster, *A Passion for Nature: The Life of John Muir* (Oxford: Oxford University Press, 2008).
- ² See Holway R. Jones, *John Muir and the Sierra Club: The Battle for Yosemite* (San Francisco: The Sierra Club, 1965); Robert W. Righter, *The Battle Over Hetch Hetchy: America's Most*

- Controversial Dam and the Birth of Modern Environmentalism* (Oxford: Oxford University Press, 2005). Calls to remove the dam and restore the valley continue. See Dan Lungren and John Van de Kamp, "Restore Yosemite? It Can Be Done." *Los Angeles Times*, 3 December 2013.
- ³ John Muir, *Our National Parks* (Boston: Houghton Mifflin, 1916), 90.
 - ⁴ François Matthes, *François Matthes and the Marks of Time: Yosemite and the High Sierra*, Fritiof Fryxell, ed. (San Francisco: The Sierra Club, 1962); Jeffrey Schaffer, *The Geomorphic Evolution of the Yosemite Valley and Sierra Nevada Landscapes: Solving the Riddles in the Rocks* (Berkeley: Wilderness Press, 1997).
 - ⁵ Robert Righter, *The Battle Over Hetch Hetchy: America's Most Controversial Dam and the Birth of Modern Environmentalism* (Oxford: Oxford University Press, 2005).
 - ⁶ Daniel Philippon, *Conserving Words: How American Nature Writers Shaped the Environmental Movement* (Athens: University of Georgia Press, 2005).
 - ⁷ John Muir, *Our National Parks*, 3.
 - ⁸ California Protected Areas Database (CPAD) Statistics Report for March 2014, accessed 7 June 2014, http://www.calands.org/uploads/docs/CPADStatisticsReport_2014a.pdf.
 - ⁹ Letter from John Muir to [Henry F.] Osborn, 8 February 1910. University of the Pacific Holt-Atherton Special Collections, accessed 7 June 2014, <http://digitalcollections.pacific.edu/cdm/ref/collection/muirletters/id/7567>.
 - ¹⁰ Katharine Hayhoe et al., "Emissions Pathways, Climate Change, and Impacts on California," *Proceedings of the National Academy of Sciences of the United States of America* 101, no. 34 (2004): 12422–12427.
 - ¹¹ Cal-Adapt developed by UC Berkeley's Geospatial Innovation Facility (GIF) with funding and advisory oversight by the California Energy Commission's Public Interest Energy Research (PIER) Program, and advisory support from Google.org. Data from Scripps Institution of Oceanography California Nevada Applications Program (CNAP), accessed 7 June 2014, <http://cal-adapt.org/temperature/century/>.
 - ¹² S.E. Godsey et al., "Effects of Changes in Winter Snowpacks on Summer Low Flows: Case Studies in the Sierra Nevada, California, USA," *Hydrological Processes* DOI: 10.1002/hyp.9943 (2013).
 - ¹³ William Cornwell et al., "Climate Change Impacts on California Vegetation: Physiology, Life History, and Ecosystem Change," California Energy Commission Publication number: CEC-500-2012-023 (2012).
 - ¹⁴ John Muir, "On Actual Glaciers in California," *American Journal of Science and Arts*, Third Series, (1873), 69–71.
 - ¹⁵ John Muir, *The Mountains of California* (New York: The Century Company, 1894).
 - ¹⁶ Bill Guyton, *Glaciers of California: Modern Glaciers, Ice Age Glaciers, Origin of Yosemite Valley, and a Glacier Tour in the Sierra Nevada* (Berkeley: Univ. of California Press, 2001).
 - ¹⁷ Hassan Basagic, and A. G. Fountain, "Quantifying 20th Century Glacier Change in the Sierra Nevada, California," *Arctic, Antarctic, and Alpine Research* 43 (2011), 317–330.
 - ¹⁸ Alejandro Guarín and Alan H. Taylor, "Drought Triggered Tree Mortality in Mixed Conifer Forests in Yosemite National Park, California, USA," *Forest Ecology and Management* 218 (2004), 229–244.
 - ¹⁹ Alejandro Guarín and Alan H. Taylor, *Forest Ecology and Management* (2004).
 - ²⁰ Williams, A. Park et al., "Forest Responses to Increasing Aridity and Warmth in the Southwestern United States," *Proceedings of the National Academy of Sciences* 107 (2010), 21289–21294.
 - ²¹ Constance Millar et al., "Climate Change And Forests Of The Future: Managing in the Face of Uncertainty," *Ecological Applications* 17 (2007), 2145–2151.
 - ²² John Muir, "On the Post-Glacial History of Sequoia Gigantea," *Proceeding of the American Association for the Advancement of Science*, Buffalo Meeting (August 1876), 3.
 - ²³ California Department of Finance, "E-7. California Population Estimates, with Components of Change and Crude Rates, July 1, 1900–2013," accessed 8 June 2014, <http://www.dof.ca.gov/research/demographic/reports/estimates/e-7/view.php>.
 - ²⁴ California Department of Finance, "New Population Projections: California To Surpass 50 Million in 2049," accessed 8 June 2014, http://www.dof.ca.gov/research/demographic/reports/projections/p-1/documents/Projections_Press_Release_2010-2060.pdf.
 - ²⁵ John Muir, *Our National Parks* p 391.
 - ²⁶ Letter from John Muir to [Jeanne C. Carr], [1870] May 29, University of the Pacific Holt-Atherton Special Collections, accessed 8 June 2014, <http://digitalcollections.pacific.edu/cdm/ref/collection/muirletters/id/11718>.
 - ²⁷ Karen Klein, "On Hetch Hetchy, John Muir Was Wrong," *Los Angeles Times*, 15 August 2012.
 - ²⁸ US Government Accounting Office, "Federal Debt Held by the Public as a Share of GDP (1797–2012)," accessed 8 June 2014, <http://www.gao.gov/assets/670/661580.pdf>.
 - ²⁹ James Bowker et al., "Wilderness and Primitive Area Recreation Participation and Consumption: An Examination of Demographic and Spatial Factors," *Journal of Agricultural and Applied Economics* 38 (2006), 317–326.
 - ³⁰ John Muir, *The Yosemite* (New York: The Century Press, 1912), 261–262.