

Since its establishment, the National Park Service has struggled to define its purpose and mission. Were the parks to be managed for scenery or science? The presence of a tiny fish in the Nevada desert challenged the assumptions and policies of early Park Service leaders and compelled the agency to change direction.

THE “NATIONAL PLAYGROUND SERVICE”

AND THE DEVILS HOLE PUPFISH

In an isolated, out-of-the-way patch of desert in southern Nevada, the National Park Service goes to great lengths to protect one of the rarest species in the world: the Devils Hole pupfish (*Cyprinodon diabolis*). This one-inch-long blue fish darts around a spring pool at the bottom of a cavern called Devils Hole. More than 500 feet

deep but with an opening just 10 feet by 60 feet,¹ Devils Hole may be the smallest vertebrate species habitat in the world. In 2006, and again in 2013, biologists observed fewer than forty individual pupfish in Devils Hole. The whole species could fit in a gallon milk jug.

The forty acres around Devils Hole form a detached unit of Death Valley National Park.² Most of the park's 3.4 million acres lie twenty miles to the west, on the other side of the Funeral Mountains, but several park biologists spend much of their time at Devils Hole managing the pupfish. They regularly scuba-dive to count pupfish, periodically remove sediment that washes into the hole during flash floods, and even conduct “supplemental feeding” (i.e., they add fish food). In a \$4.5 million facility a few miles away, meanwhile, the U.S. Fish and Wildlife Service protects a second, “backup” population of pupfish in a 100,000-gallon tank that replicates the peculiar low-oxygen and high-temperature conditions in Devils Hole.

The current management of the pupfish demonstrates an impressive commitment by the two agencies to protect this species from extinction. According to the U.S. Fish and Wildlife Service, having “adapted to survive in very warm water with very low oxygen content,” the pupfish “has much to teach scientists about adaptation to adverse conditions.”³ But nearly seventy years ago, the National Park Service wanted nothing to do with the Devils Hole pupfish. And the Fish and Wildlife Service, though it briefly considered acquiring the area around Devils Hole, appeared not to be aware of the species' presence. Though the site was “of very real scientific interest,” Park Service Director Newton Drury wrote in 1950, “it is felt that it does not possess qualifications of national significance sufficient to warrant its inclusion in the National Park System.”⁴ Drury notified the Bureau of Land Management—which had asked whether the Park Service wanted the land set aside for park protection—that the agency was not interested.

BY KEVIN C. BROWN

How Devils Hole and its pupfish eventually came to be part of the park system, after the initial rebuff from the National Park Service, is the subject of this article. This story—of a tiny fish, in a remote corner of a national park larger than the state of Connecticut, embedded in an even larger, complex administrative system—is more than a footnote in the history of the National Park Service. It sheds light on a persistent question at the heart of the agency’s mission: just what exactly is the national park system for? Should it be a “playground system” meant primarily for visitors to enjoy scenic wonders? Or is one of its central responsibilities the protection and careful management of ecosystems and species?

The Devils Hole pupfish’s path from Park Service reject in 1950 to a well-protected and cherished creature of Death Valley National Park today indicates that the Park Service’s answers to those questions have changed. It is worth remembering, however, that the places included in the national park system—and those that are not—are often artifacts of shifting ideas about what parts of nature are worthy of protection.

THANKS, BUT NO THANKS

The early twentieth century was an anxious era for natural scientists. The decline and extinction of species as a result of human activities—from logging to hunting—loomed over their efforts to investigate and classify plants and animals around the globe.⁵ This was especially true in the western United States. Joseph

Grinnell, the director of the Museum of Vertebrate Zoology at the University of California, Berkeley, felt compelled to collect and preserve fauna, in part, he said, because “many species of vertebrate animals are disappearing; some are already gone.”⁶ Preserved specimens, Grinnell believed, might be all that was left of many species for future researchers.

Scientists understood that the biota of desert springs like Devils Hole was especially sensitive to human disruption, since the scarcity of water in arid areas made springs valuable for development. In 1928, Harvard University entomologist Charles Brues cautioned that “all except the most inaccessible” springs in the West had already “been converted into natatoria, sanatoria for arthritics, radium baths and the like, or have been diverted into irrigation ditches, sometimes with the aid of dynamite, to supply a few desolate ranches with water for cattle and alfalfa.”⁷ As early as 1914, two ranchers proposed a scheme to irrigate their land with water from Devils Hole.⁸ And though the site remained undeveloped, researchers nonetheless saw reason for concern. Robert Rush Miller, a young University of California ichthyology student and future authority on the taxonomy of desert fishes, visited Devils Hole in 1937 and worried about the pupfish’s future. “*C. diabolis* was found to have been reduced to not more than fifty or sixty fish,” many less than seen on his previous visit, he wrote. “At this rate it won’t be long until they are extinct.”⁹ Miller had overstated the precariousness of the population, but his fear that

PACIFIC SOUTHWEST REGION USFWS - OLIN FEUERBACHER



This iridescent blue inch-long fish’s only natural habitat is in the 93 degree waters of Devils Hole, located in a detached unit of Death Valley National Park in Nevada. Although the cavern is more than 400 feet deep, the pupfish are believed to spawn exclusively on a shallow rock shelf just under the surface.

isolated fauna in the West were in trouble echoed biologists' broader anxieties.

In response to this early-twentieth-century biodiversity crisis, two American ecologists, Charles C. Adams and Victor E. Shelford, and their fledgling professional organization, the Ecological Society of America, proposed habitat preservation as a tool for species conservation and called for the establishment of natural areas. Others called for using national parks and monuments to safeguard and study animal life.¹⁰ The American Society of Ichthyologists and Herpetologists (ASIH) even proposed extending park boundaries or establishing new units administered by the Park Service for the "perpetuation of such threatened species and subspecies of fishes." This 1946 resolution did not specifically mention the Devils Hole pupfish, but it may as well have: the ASIH explained that "certain kinds of fishes in the arid parts of the West are confined to extremely limited waters—some to single springs," thus making them vulnerable to disturbance.¹¹ Although advocacy for the protection and study of nongame, uncharismatic fauna through habitat protection is often presumed to have emerged in the environmental era of the 1960s, the idea was commonplace among biologists in the first half of the twentieth century.

Such beliefs had not, however, taken root in the National Park Service. Instead, the Park Service managed land mostly for tourists to enjoy scenic wonders. In one of its founding documents, Secretary of the Interior Franklin Lane described developing the parks as a "national playground system."¹² As historian Richard West Sellars has observed, "Scenery has provided the primary

inspiration for national parks and, through tourism, their primary justification." Once in Park Service hands, Sellars continued, parks were operated on the basis of "protecting and enhancing the scenic façade of nature for the public's enjoyment, but with scant scientific knowledge and little concern for biological consequences."¹³

During the 1930s, the Park Service did create a Wildlife Division, but it was understaffed and short-lived. The division suggested that all parks complete routine "faunal investigations"—today, ecological monitoring—and proposed that biologists review park development projects. Its advice often went unheeded. In Death Valley National Monument, for example, Park Service biologist Lowell Sumner argued against improving a road through Titus Canyon, home to both rare plants and a watering hole for bighorn sheep. Instead, he suggested that it be protected as a "research reserve." Sumner was ignored and the road developed.¹⁴ After the death of its founding chief, George Wright, the Wildlife Division was even briefly transferred out of the National Park Service altogether. Sumner, one of the few agency biologists who survived the tumult of the era, summed up the status of biology in the western region of the Park Service in 1951: "For five years I have been asking for a fisheries biologist and have made progress to the point where occasionally someone else in the office also mentions the desirability of such a position. This is at least a step forward."¹⁵

Science and species conservation were at the margins not only in management of established units but also in the Park Service's evaluation of potential additions. Floyd Keller, a Death Valley National Monument naturalist, advised against making Devils



Devils Hole became a detached segment of Death Valley National Monument (now Park) in 1952. Lowell Sumner's 1951 report on Devils Hole recommended installing a fence with a gate, and keeping the key at the park headquarters in Furnace Creek, an hour's drive away.

Hole a national monument, noting that though the area was “of interest to the scientist,” it did not “possess the qualifications and accessories” that constituted “national significance to meet the National Park Service standard.”¹⁶ The Park Service argued that its hands were tied by the Antiquities Act, a 1906 law that allowed U.S. presidents to reserve public land for “objects of historic or scientific interest.” Though by 1950 the “objects...of scientific interest” clause had been put to a wide range of purposes—including the establishment of Death Valley National Monument itself—Park Service leaders argued that “animal life in itself is not among those attributes on which can be based the establishment of a national monument under the Antiquities Act.”¹⁷ This belief had little to do with the act itself, which is open-ended, and said more about the Park Service’s interpretation of its own mission. Protecting a species like the Devils Hole pupfish that few would ever see was a project better left to another agency.

NICE WEATHER FOR DUCKS

But another agency had already looked over the land surrounding Devils Hole. In fact, by 1950 the Fish and Wildlife Service had twice declined proposals—in 1937 and again in 1947—to acquire the relatively wet patch of desert around Devils Hole called Ash Meadows. Besides Devils Hole, the area was home to more than a dozen large springs and habitat for four other unique fish species.¹⁸ Whereas the Park Service peered into Devils Hole and saw a curiosity only of interest to scientists—and certainly not an obligation of the agency—Fish and Wildlife and its bureaucratic predecessor the Bureau of Biological Survey looked across the Ash Meadows landscape and did not even notice the fish. It had its eyes on ducks.

The Biological Survey had its origins in the 1880s as the Division of Economic Ornithology and Mammalogy in the Department of Agriculture, where it began to survey the distribution of the nation’s flora and fauna. The first-ever specimens of pupfish collected from Devils Hole, for example, were removed as part of the division’s Death Valley expedition in 1891. Especially after 1910, the agency took on a variety of other functions, including an increasing role in the control of farm and ranch pests, such as wolves, coyotes, and prairie dogs. After 1929, when Congress authorized the purchase of acreage for wildlife refuges, principally for migratory birds, the Biological Survey administered these lands.¹⁹

In 1937, as part of its responsibilities for wildlife refuges, a regional director of the Biological Survey asked J. Clark Salyer II, in charge of the agency’s migratory waterfowl division, to consider Ash Meadows. Salyer explained that “if it is all you claim it is, we are certainly interested in it, although our present acquisition program is held up by the common ailment of the Biological Survey—no funds.”²⁰ Nothing ever came of Salyer’s visit. A decade later, however, the agency—by then rolled into the Interior Department’s new Fish and Wildlife Service—took another look at the land. Two employees reported enthusiastically on its potential to provide habitat for “the dwindling flight line of ducks in this locality.” Fish and Wildlife envisioned impounding water in ponds for waterfowl and even suggested building a warm-water fish hatchery in Ash Meadows²¹—efforts that would likely have harmed the native fishes and plants of Ash Meadows. Despite the glowing report, the proposal again landed on Salyer’s desk. He scratched out a curt reply: “I don’t see any chance of considering this area for some years to come. I have seen it previously.”²² A subordinate clarified: “In view of the present financial situation, it does not appear that anything

can be done in regard to this proposed unit for some years to come. In the circumstances no further examination work should be done on the project.”²³ The Park Service did not think Devils Hole met its standards, and Fish and Wildlife could not come up with the money for birds, never mind the fish.

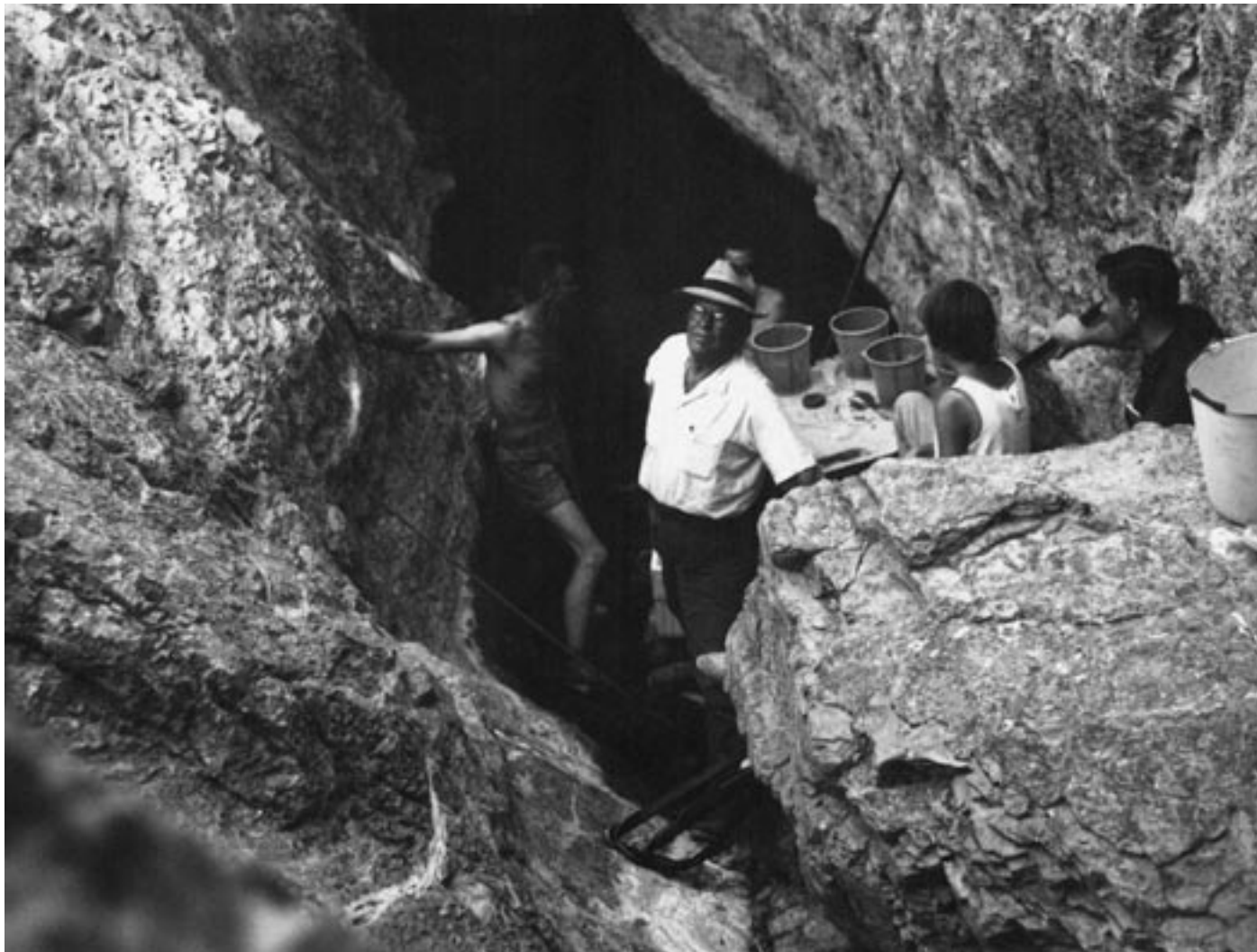
TOWARD A PUPFISH PLAYGROUND

The different visions for the national park system held by biologists and park administrators collided at Devils Hole in the winter of 1950–51. A Scripps Institution of Oceanography professor named Carl Hubbs learned from his son Earl, who was then working in Death Valley, of the Park Service’s decision not to protect Devils Hole. “Perhaps I have been naïve in assuming that preservation of nature was among the basic reasons for and functions of the National Park Service,” Hubbs sarcastically wrote in a lengthy letter to Director Drury. “I would hate to think of your department as only a National Playground Service.”²⁴

Hubbs, a prominent ichthyologist in the United States in the mid-twentieth century, had served as president of ASIH and had a long-standing interest in Devils Hole and Ash Meadows. He had visited with his family in the 1930s as part of summer specimen-collecting expeditions to isolated spring systems across the West, and his protégé, Robert R. Miller, wrote his doctoral dissertation on the fishes of the Death Valley region.²⁵ As early as 1943, Hubbs had corresponded with Park Service officials about the possibility of protecting Devils Hole and Ash Meadows. “We have seen some of the isolated fishes of the desert pass out of existence within recent years,” he told the agency’s chief naturalist, “and I believe the Ash Meadows group of springs would be a very logical one for Park protection.”²⁶ Foreshadowing the Park Service’s analysis in 1950, Conrad Wirth, a future Park Service director who was then an assistant director for land planning, dismissed the suggestion as “purely a scientific matter.”²⁷

Hubbs’s “national playground service” letter laid out an alternative vision of the parks—“it is a national concern to preserve a habitat and a species as unique as are Devils Hole and its endemic fish”—and proposed that Devils Hole should be added to Death Valley National Monument instead of set aside as its own monument. The main novelty of Hubbs’s letter, however, was not his argument but the recipients. Though the letter was nominally addressed to Drury, Hubbs circulated copies to university scientists, sympathetic Interior Department personnel, and later, conservation organizations. “It seems unlikely that the National Park Service has the authority to take direct action in the matter unless there is loud public clamor on behalf of the habitats,” cautioned one of Hubbs’s Park Service supporters.²⁸ But that was exactly what Hubbs wanted, warning Death Valley naturalist Keller that “I have had some other responses from my letter that indicate general and rather strong interest in the project. I will try and carry on, spreading interest in the matter, until something is accomplished.”²⁹

Hubbs got help from Fish and Wildlife, including former student J. Clark Salyer II, the same official who had declined to pursue acquisition of Ash Meadows as a wildlife refuge in 1947. “I am very sympathetic with the case you present with respect to *Cyprinodon diabolis*,” Salyer told Hubbs.³⁰ Salyer passed Hubbs’s letter to Ira Gabrielson, a former Fish and Wildlife director and the current president of the Wildlife Management Institute; to Howard Zahniser, executive secretary of the Wilderness Society; and to leaders in the National Parks Association.³¹ Afterward, Gabrielson wrote to Director Drury to express support for



Carl Hubbs, facing camera, at Devils Hole, 1967. Although he learned of the pupfish issue from his son, who was working in Death Valley, around 1950, his interest in Devils Hole and Ash Meadows dated back to the 1930s.

preserving Devils Hole, while the National Parks Association began organizing to persuade the agency to protect not only Devils Hole but also other springs across Ash Meadows.

Inside the National Park Service, a former member of the Wildlife Division weighed in. Lowell Sumner, biologist for the western region, visited Devils Hole in January 1951, took photographs, and produced a new report that reached conclusions very different from earlier agency analyses. Addressing the question of whether Devils Hole met “National Park Service Standards,” Sumner offered a strong affirmative: “Scientifically (i.e., biologically)? Yes—so unmistakably that we need not argue the point... . Scenically? Well, maybe—this depends more on each individual’s point of view.... As Part of the Death Valley Story? Again, Yes.” Sumner recommended that “in the national interest,” Devils Hole be added to Death Valley National Monument.³²

In March 1951 the National Park Service reversed its position and recommended acquisition. The agency notified the Bureau of Land Management it was interested in Devils Hole because “additional studies” had revealed that “the 40-acre tract in question does, after all, warrant the distinction and protection of national monument status.”³³ And in January 1952, President Harry Truman signed Presidential Proclamation 2961, designating the forty acres around Devils Hole as a part of Death Valley National

Monument.³⁴ Carl Hubbs got his way; the pupfish made it into the national park system.

“INADVERTENTLY OMITTED”

Truman’s order had taken the National Park Service to water, but it could not make the agency drink: management of Devils Hole got off to an inauspicious start. In May 1953, Death Valley National Monument’s acting superintendent, Edward E. Ogston, apologized to the agency’s Washington office over a mistake in the monument’s 1952 annual report. “It is regretted,” Ogston wrote, “that the addition of Devils Hole...to Death Valley National Monument on January 17, 1952, was inadvertently omitted.”³⁵ Not only had Death Valley left Devils Hole out of its report, but eighteen months after acquisition, the Park Service had still failed to install fencing around the site.

Throughout the 1950s and 1960s, the agency learned almost nothing about the resource it was charged with managing. In fact, while the agency was investing a billion dollars in Mission 66, its ten-year infrastructure construction and expansion program, ecological research and management remained a low priority. Only in the late 1960s, after groundwater pumping by a rancher in Ash Meadows began lowering the water level in Devils Hole, did Death Valley staff and the Park Service more generally begin to focus on

the site. And in 1976 a U.S. Supreme Court decision (*Cappaert v. U.S.*) affirmed the right of the federal government to maintain water levels sufficient to support the pupfish, even at the expense of junior water rights held by nearby ranchers.

Today, given the Park Service's considerable efforts to preserve the Devils Hole pupfish, it is tempting to believe that, as one agency report stated in 2009, "One of the fundamental resources and values that national parks were established to protect is the maintenance of biodiversity."³⁶ In its wildlife management—in defending the pupfish, reintroducing grizzly bears in the northern Cascades, and recovering the Channel Island fox, to name just a few examples—the Park Service thus portrays itself as a longtime guardian of biodiversity in the United States.

But the Devils Hole pupfish's history suggests a more nuanced interpretation of the agency's historical role in protecting and managing plants and animals. The "national playground service" moved in new directions only under pressure from both inside and outside the agency. At Devils Hole, Carl Hubbs played the role of the outsider, and Lowell Sumner, the insider. As the skirmish wrapped up, Sumner thanked Hubbs for taking such an active interest in the park system, and he reflected on Hubbs's role in pressuring the agency to change its position: "I think that is real democracy," Sumner wrote.³⁷ As the park system moves into its second century, it is a lesson worth remembering. □

Kevin C. Brown is a postdoctoral fellow in the Environmental Studies Program at the University of California, Santa Barbara. This article is based on a chapter in his work "Recovering the Devils Hole Pupfish: An Environmental History" (National Park Service, 2017), which was funded jointly by the National Park Service and the American Society for Environmental History. He is currently writing a book based on this research. The author thanks Jennifer A. Martin and James Pritchard for comments on a draft of this article.

NOTES

1. National Park Service, "Death Valley: Devils Hole," <https://www.nps.gov/deva/learn/nature/devils-hole.htm>. The bottom of Devils Hole has never been mapped.
2. From its establishment in 1933 until 1994, Death Valley National Park was called Death Valley National Monument.
3. U.S. Fish and Wildlife Service, Nevada Fish and Wildlife Office, "The Devils Hole Pupfish," https://www.fws.gov/nevada/protected_species/fish/species/dhp/dhp.html.
4. Newton B. Drury to Director, Bureau of Land Management, October 12, 1950, Box 2108, P11, RG 79-Records of the National Park Service, National Archives and Records Administration—College Park (hereafter, NARA).
5. See Mark V. Barrow Jr., *Nature's Ghosts: Confronting Extinction from the Age of Jefferson to the Age of Ecology* (Chicago: University of Chicago Press, 2009), chapters 3, 5, and 7.
6. Joseph Grinnell, quoted in Peter S. Alagona, *After the Grizzly: Endangered Species and the Politics of Place in California* (Berkeley: University of California Press, 2013), 49.
7. Charles T. Brues, "Studies of the Fauna of Hot Springs in the Western United States and the Biology of Thermophilous Animals," *Proceedings of the American Academy of Arts and Sciences* 63, no. 4 (1928): 140.
8. "Application for Permit to Appropriate the Public Waters of the State of Nevada," Serial no. 2890, February 14, 1914, http://images.water.nv.gov/images/book_records/02000/2890.pdf.
9. Robert R. Miller to Carl Hubbs, June 22, 1937, Folder 11, Box 230, Carl Leavitt Hubbs Papers (81-18), Scripps Institution of Oceanography Archives, University of California, San Diego (hereafter, Hubbs Papers).
10. Alagona, *After the Grizzly*, 71–73.
11. "Editorial News and Notes," *Copeia* 1946, no. 3 (1946): 180.
12. Franklin K. Lane to Stephen T. Mather, May 13, 1918, in Lary Dilsaver, ed., *America's National Park System: The Critical Documents* (New York: Rowman & Littlefield Publishers, 1994), 49. The letter was actually written by Mather's assistant Horace Albright, who later succeeded Mather as director. Dilsaver, *America's National Park System*, 10.
13. Richard West Sellars, *Preserving Nature in the National Parks* (1997; repr. New Haven, CT: Yale University Press, 2009), 4–5.
14. Sellars, *Preserving Nature in the National Parks*, 103.
15. Lowell Sumner to Carl Hubbs, August 14, 1951, Folder 22, Box 81, Hubbs Papers.
16. L. Floyd Keller to T. R. Goodwin, September 5, 1950, Box 2108, P11, RG 79, NARA.
17. Hal Rothman, *Preserving Different Pasts: The American National Monuments* (Urbana: University of Illinois Press, 1989), 69–71; and Newton B. Drury to Regional Director, NPS, June 23, 1950, Box 2108, P11, RG79, NARA.
18. The four species are the Ash Meadows Amargosa pupfish (*Cyprinodon nevadensis mionectes*), Warm Springs pupfish (*C. n. pectoralis*), Ash Meadows speckled dace (*Rhinichthys osculus nevadensis*), and Ash Meadows poolfish (*Empetrichthys merriami*). The Ash Meadows poolfish went extinct by the mid-1950s.
19. Nathaniel P. Reed and Dennis Drabelle, *The United States Fish and Wildlife Service* (Boulder, CO: Westview Press, 1984), 5–10.
20. J. Clark Salyer II to William M. Rush, April 14, 1937, Box 246, Entry 162, RG 22-Records of the U.S. Fish and Wildlife Service, NARA.
21. Frank W. Groves to Regional Director, Portland, FWS, April 4, 1947, Box 62, P236, RG 22, NARA.
22. Handwritten note, bottom of May 16, 1947, letter from acting chief of lands (A. J. Rissman) to Salyer, Box 62, P236, RG 22, NARA.
23. A. J. Rissman to Regional Director, Portland, May 21, 1947, Box 62, P236, RG 22, NARA.
24. Carl Hubbs to Newton B. Drury, November 27, 1950, Box 1622, P11, RG 79, NARA.
25. Two-thirds of Miller's 1944 dissertation was later published as *The Cyprinodont Fishes of the Death Valley System of Eastern California and Southwestern Nevada*, Miscellaneous Publications No. 68, Museum of Zoology, University of Michigan (Ann Arbor: University of Michigan Press, 1948), <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/56313/MP068.pdf?sequence=1&isAllowed=y>.
26. Carl Hubbs to Carl P. Russell, October 21, 1943, Box 2147, central classified files, RG 79, NARA.
27. Conrad Wirth to Carl P. Russell, November 1, 1943, Box 2147, central classified files, RG 79, NARA.
28. Carl Russell to Carl Hubbs, January 18, 1951, Folder 7, Box 238, Hubbs Papers.
29. Carl Hubbs to Floyd Keller, December 13, 1950, Folder 22, Box 81, Hubbs Papers.
30. J. Clark Salyer to Carl Hubbs, December 5, 1950, Folder 7, Box 238, Hubbs Papers.
31. J. Clark Salyer to Ira Gabrielson, December 5, 1950; J. Clark Salyer to Howard Zahniser, December 5, 1950; and J. Clark Salyer to Carl Hubbs, telegram, January 18, 1951, all in Folder 7, Box 238, Hubbs Papers.
32. Lowell Sumner, "A Pictorial Summary of Devils Hole, Nevada, and Recommendations," January 1951, Box 1622, P11, RG 79, NARA.
33. Arthur Demaray to Director, BLM, March 12, 1951, Box 1622, P11, RG 79, NARA. Demaray was acting director at the time because Drury had resigned after a disagreement with Interior Secretary Oscar Chapman over the proposed construction of Echo Lake Dam in Dinosaur National Monument.
34. Harry Truman, Presidential Proclamation 2961, January 17, 1952, <https://www.trumanlibrary.org/proclamations/index.php?pid=594>.
35. E. E. Ogston to Director, NPS, May 30, 1953, Box 108, P11, RG 79, NARA.
36. National Park Service, "Strategic Plan for Natural Resource Inventories, FY2008-FY2012," Natural Resource Report NPS/NRPC/NRR—2009/094, May 2009, 17.
37. Lowell Sumner to Carl Hubbs, August 14, 1951, Folder 22, Box 81, Hubbs Papers.