

TASSI RANCH, TASSI SPRINGS  
Grand Canyon-Parashant National Monument  
Littlefield vicinity  
Mohave County  
Arizona

HALS AZ-2  
*HALS AZ-2*

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FIELD RECORDS

HISTORIC AMERICAN LANDSCAPES SURVEY  
National Park Service  
U.S. Department of the Interior  
1849 C Street NW  
Washington, DC 20240-0001

## HISTORIC AMERICAN LANDSCAPE SURVEY

### TASSI RANCH AND SPRINGS

HALS No. AZ-2

**Location:** Grand Canyon-Parashant National Monument,  
Mohave County, Arizona.

Tassi Ranch is located along the course of Pigeon Wash in northwestern Arizona, about 33 miles southeast of Overton, Nevada, and 59 miles by road from Mesquite, Nevada. The site lies along Lake Mead National Recreation Area Approved Road 152A where it meets Approved Road 149 and becomes Approved Road 148. Its geographic coordinates are latitude 36.256177, longitude -113.957874 (North American Datum of 1983). These coordinates represent the southwest corner of the ranch house.

**Present Owner:** Grand Canyon-Parashant National Monument  
National Park Service  
Department of the Interior

**Present Use:** Vacant; preserved as a cultural and natural site

**Significance:** Tassi Ranch sits on the western edge of the Arizona Strip, an isolated desert region in northern Arizona bounded by the Grand Canyon and the Colorado River to the south and east and the Utah and Nevada borders to the north and west. Endowed with multiple natural springs that provide fresh water year-round, the site was probably a waypoint for Native American travelers in the region for hundreds of years before American settlers, explorers, and ranchers are documented to have begun stopping there in the mid-nineteenth century. By the mid-1930s, a few decades of informal use by a succession of sheep and cattle ranchers culminated in the construction by rancher Ed Yates of reservoirs, irrigation ditches, and a house and outbuildings clustered around the springs. These vernacular structures and water features transformed the site into a habitable ranch core whose features largely survive today. Habitation at the site continued through the 1980s, and grazing on its land lasted through the late 1990s. A National Park Service cultural landscapes inventory completed in 2003 determined the site to be locally significant for its association with the development of cattle ranching in the Arizona Strip. It also found the ranch's structures and man-made landscape improvements significant as rare survivors of their type. Tassi Ranch illuminates the ways independent ranchers and homesteaders modified the natural landscape of the desert southwest to create sites for agriculture and settlement in a harsh and remote environment.

**Historian:** Michael R. Harrison, 2010

**Project**

**Information:**

Tassi Ranch was documented by the Historic American Landscapes Survey of the Heritage Documentation Programs of the National Park Service. The principals involved were Richard O'Connor, Chief of Heritage Documentation Programs; Paul D. Dolinsky, Chief of the Historic American Landscapes Survey; and Jeff Bradybaugh, Superintendent of Grand Canyon-Parashant National Monument. The documentation was produced during the fall and winter of 2009-2010 by the Washington, D.C., office of the Historic American Landscapes Survey. The project supervisor was Christopher Stevens, landscape architect, with Alexander Matsov, architect; Dana Lockett, architect; and Michael R. Harrison, historian. The large-format and aerial photography was completed by Jet Lowe.

## PART I. HISTORICAL INFORMATION

### A. Physical History

**1. Date of establishment:** Although the springs at Tassi are ancient, the structures and water systems that currently define Tassi Ranch began to be constructed in the mid- to late-1930s.

**2. Landscape designer and builder:** Rancher Ed Yates, who had control of Tassi from the late 1920s to 1963 and again from about 1970 to 1973, designed and built the ranch house and irrigation system at Tassi. Ranchers Eldon Smith (1963 to ca. 1970) and Dennis and Jim Whitmore (1973 to ca. 1991) made modifications to the structures and water systems at the site, but the extent of their individual contributions is not clear.

**3. Original and subsequent owners and occupants:** Tassi Ranch is on public land and has been withdrawn from entry for mineral and homesteading purposes since 1919. The site has never legally been in private hands, although residents from 1936 to 1981 believed they held legitimate water rights conferred by the state of Arizona. The site has been under National Park Service (NPS) management since late 1936, but the service has only taken an active interest in it since the early 1990s.

#### *Known residents:*

Ed Thomas	ca. 1917
Sam Gentry and sister Laura Gentry	possible intermittent residence from ca. 1912 into the 1930s
George D. Hartman	possible residence ca. 1922-25
Fran (Sid?) and Tyne Hecklethorne	ca. 1925-29
Ed Yates	ca. 1929-63 and ca. 1970-73
Osborne & Gladys (Yates) Gentry	?-1963 and ca. 1970-73
Dennis and Leland O. ("Jim") Whitmore	in residence 1973-1990, with continued non-residential use of the ranch to ca. 1998

**4. Periods of development:** The history of use and transformation at Tassi Springs and Tassi Ranch breaks down into the following periods:

- *before ca. 1917: Limited alteration.* No man-made alterations to the site are yet documented prior to 1917. The long history of human use of the springs as a waypoint makes it likely, however, that limited modifications to the site may have occurred over time to channel or store the water for more convenient use.
- *ca. 1917 to 1936: First improvements.* A visitor to Tassi in 1917 reported a stone house at the springs, a pasture, and "an alfalfa patch." A visitor in 1918 reports the house was owned by one Ed Thomas, but does not mention other improvements. The construction date for the house is unknown.<sup>1</sup>

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<sup>1</sup> Mike Belshaw and Ed Peplow, Jr., *Historic Resources Study, Lake Mead National Recreation Area, Nevada* (National Park Service report, Aug. 1980), 108-09.

- *1936 to 1940: Significant improvements.* Ed Yates began working cattle out of Tassi in the late 1920s. He settled there and made significant improvements based on a certificate of water rights he received from the state of Arizona in March 1936. He built a reservoir (1937); dug irrigation ditches (ca. 1937); and built a new stone house (1938). He also may have built a spring box at a spring head northeast of the ranch core (ca. 1940, designated spring box 2 in this report). A barn and corrals on the property originated during this time, while a surviving shed postdates 1947. Some of the cottonwood trees that still shelter the ranch core may also have been planted by Yates.<sup>2</sup>
- *1940 to 1989: Continued habitation.* Ed Yates lived at the site into the early 1960s, along with his daughter Gladys, son-in-law Osborne Gentry, and perhaps other family members whose presence is no longer recorded. In 1963, Yates sold his water and grazing rights and the structures at Tassi to Eldon Smith. Smith occupied the site until about 1970, when Yates reposessed it for nonpayment of debt. In 1972, Yates sold the same things to Dennis and Jim Whitmore, one or both of whom lived there until at least 1990. The Whitmores maintained and modified the irrigation system and buildings and leveled a landing strip for aircraft nearby.<sup>3</sup>
- *1990 to 2001: Last years of cattle grazing.* Beginning in 1949 and continuing until 2001, Yates, Smith, and the Whitmores ran cattle at Tassi under a grazing allotment lease from the Bureau of Land Management. From 1981 to 1998, the National Park Service issued the Whitmores special-use permits to water their cattle from the springs, without which it would have been difficult to work their grazing allotment. The Whitmores occasionally violated their permits by maintaining and modifying the irrigation system. Throughout this period, they kept a great quantity of equipment at the ranch.
- *1998 to the present: National Park Service management.* Although the site has been under National Park Service jurisdiction since 1936, it was only in the early 1990s that the service firmly asserted its control and its activities began to have a significant impact on the site. Serious planning for management of the ranch as a park resource began in 1993. After the Whitmores removed the last of their equipment in 1998 (some of their cattle remained until 2001), the NPS stepped up efforts to remove what trash and debris remained at the site and to undertake stabilization and repair work. Park officials also commissioned numerous studies of the site, all part of an effort to assert intellectual and

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<sup>2</sup> Belshaw and Peplow, *Historic Resources Study*, 113; Fred J. Weiler, memo to BLM Arizona state office director, May 15, 1968; William J. Burke, memo to file, Oct. 6, 1977; W. Werrell, memo to Western Region Regional Director, Jan. 24, 1978; Belknap Photographic Services, Boulder City, Nev., three views of Tassi Ranch taken Feb. 1947; William Tweed, memo to Lake Mead NRA chief of interpretation, Apr. 23, 1976. These and all subsequent memos and letters are from Lake Mead National Recreation Area headquarters, Boulder City, Nev., Tassi historical files 1903-94. Where necessary, this collection will hereafter be cited as LAME.

<sup>3</sup> Shaun Provencher and Len Warner, *Cultural Landscapes Inventory for Tassi Ranch, Grand Canyon-Parashant National Monument* (National Park Service, 2003), 2b.1-2b.2. In numerous places, Provencher and Warner incorrectly state that Yates sold the ranch to Eldon Smith in 1947. This leads them to define the ranch's period of significance to the limited and arbitrary period from 1936 to 1947. Should the site ever be considered for the National Register of Historic Places, its National Park Service-defined period of significance should be reconsidered.

managerial control over the ranch. Brush clearing and basic maintenance continue on a limited basis at the site today.

**a. Original plans and construction:** No formal plans for Ed Yates's ranch improvements are known, and the vernacular nature of the structures makes it likely that none were created. The construction methods and equipment he employed are also not documented.

**b. Changes and additions:** The shed is a post-1947 addition to the ranch core, and the corrals and fences have apparently been repaired and altered numerous times.

## B. Historical Context

Tassi Ranch and Springs sits on the western edge of the Arizona Strip, an isolated desert region in northwestern Arizona bounded on the south and east by the Grand Canyon and the Colorado River and on the north and west by the Utah and Nevada borders. Today the site lies within the boundaries of Grand Canyon-Parashant National Monument and Lake Mead National Recreation Area, the former set aside in January 2000 and the latter dating from October 1936.<sup>4</sup> The springs were part of Mexico until 1848, then part of the New Mexico Territory after 1850 and the Arizona Territory after 1863. The springs have been within the state of Arizona since 1912.

Long before these political boundaries were drawn, Virgin Branch Basketmaker and Pueblo Indians flourished on the Arizona Strip from the sixth to the twelfth centuries. Southern Paiutes first appeared in the region about the middle of the thirteenth century.<sup>5</sup> Direct evidence of these peoples' presence at Tassi Springs before the preservation of written records is currently limited to four dozen small flaked stone and ceramic artifacts discovered during a 1999 archeological survey at the ranch. The lithics found during this survey dated between 730 BC and about AD 1630, and the ceramics matched examples dated from AD 350 at the earliest to 1850 at the latest.<sup>6</sup>

Mormon missionary and settlement activity in the 1860s and the conflicts that arose because of it among the Mormons, the Paiutes, and the Navajo created the first extensive awareness of the

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<sup>4</sup> Secretary of the Interior Harold Ickes signed the National Park Service / Bureau of Reclamation cooperative agreement that created Boulder Dam Recreation Area on Oct. 13, 1936. The area was renamed Lake Mead Recreation Area in August 1947, and Congress formally established it as part of the national park system on Oct. 8, 1964. President Bill Clinton created Grand Canyon-Parashant National Monument by presidential proclamation on Jan. 11, 2000.

<sup>5</sup> Grand Canyon Wildlands Council, *An Inventory, Assessment, and Development of Recovery Priorities for Arizona Strip Springs, Seeps, and Natural Ponds: A Synthesis of Information*. (Report prepared for the Arizona Water Protection Fund, 2001), 14.

<sup>6</sup> JoAnn Blalack, Shirley Shirley, and Meredith Wilson, *Tassi Ranch and Springs Site, Documentation and Trip Report No. LAME 1999 E* (National Park Service, Western Archeological and Conservation Center, Nov. 2004), 7.

Strip beyond native peoples. The published reports from John Wesley Powell's topographical explorations in the region (1871-73), as well as those undertaken by the Army Corps of Topographical Engineers (1871) and Clarence Dutton's U.S. Geological Survey team (1879-81) further publicized the scenic and economic potential of the area.

Nevertheless, the Arizona Strip's difficult and isolating terrain has always kept large-scale settlement in check. Brigham Young called his followers to go south from the Great Salt Lake Basin to establish farming communities, but there were few places on the Strip where arable land and sufficient water coincided to allow the kind of communal-irrigation-based town planning the Mormons preferred. As a result, the Strip was largely settled by individuals rather than the "church-organized colonies" that typified settlement in southern Utah. Some of these pioneers farmed or started logging operations – particularly around Mount Trumbull, along Kanab Creek, and on the Kaibab Plateau in the Strip's central and eastern reaches. But most settlers focused their endeavors on stock raising, because the region's topography, climate, and vegetation supported little else.<sup>7</sup>

Despite becoming dotted over time with many mining, homesteading, and water-rights claims, the preponderance of the land on the Strip was public domain and generally open for anyone to use to graze animals. After the first generation of Mormon settlers and stock companies extensively overgrazed the Arizona Strip in the 1870s, the quality of the range decreased and these pioneers gradually sold their land and water rights – or lost them in legal maneuvering – to non-Mormon cattlemen. Ownership of the region's cattle and control of its water resources eventually concentrated in the hands of a small number of cattle barons. By 1900, for example, much of the western strip was controlled by Preston Nutter, who had 25,000 cattle there in 1901.<sup>8</sup> This consolidation did little, however, to alleviate overgrazing, which led to severe erosion, vegetation change, and declining productivity.

The government did not substantially address this problem until passage of the Taylor Grazing Act in 1934. This act segregated the public domain into defined districts and established a system of permits that limited the number of animals owners could graze on the public range. In Arizona and Nevada, the size of ranchers' allotments was based on private water holdings rather than land owned: if one did not control a source of water, one could not graze livestock.<sup>9</sup>

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<sup>7</sup> Jeffrey H. Altschul and Helen C. Fairley, *Man, Models and Management: An Overview of the Archaeology of the Arizona Strip and the Management of its Cultural Resources* (U.S. Forest Service / Bureau of Land Management report, 1989), 162-66, 173, 177-182, 198-99. St. Thomas, Nevada, settled by Mormon farmers in 1865, was the closest community to Tassi (27 miles northwest as the Gray Hawk flies) until abandoned to the rising waters of Lake Mead in 1938. Millersburg on the Virgin River, about 40 miles north of the springs, was the closest town within the Arizona Territory. Although first settled in 1863, it was wiped out by a flood in 1867 and not reestablished until 1875 (as Beaver Dams, now Littlefield).

<sup>8</sup> Altschul and Fairley, *Man, Models and Management*, 193-95.

<sup>9</sup> "This rule effectively eliminated all grazing by transient sheep herders on the Arizona Strip. It also precluded use of the range by many of the newly established homesteaders in the region, since very few of the recent arrivals had managed to secure land with permanent water." Altschul and Fairley, *Man, Models and Management*, 211.

The Department of the Interior's Division of Grazing, later called the Grazing Service, administered these allotments. In 1946, it combined with the General Land Office to become the present Bureau of Land Management (BLM). Implementation of the Grazing Act greatly reduced cattle and sheep numbers on the Arizona Strip. While comparative numbers are not available, in 1936, 131 ranchers worked 10,523 head of cattle on 71,224 acres of grazing land in that portion of the Arizona Strip lying within Mohave County. By contrast, this same area contained just 220 acres of irrigated land.<sup>10</sup>

Tassi Springs lies along the historic route of the Pearce Ferry Road, a wagon route from St. George, Utah, to the Pearce Ferry across the Colorado River. This route, following natural washes, was pioneered in 1868 but more firmly established by Jacob Hamblin and Harrison Pearce in 1876 in preparation for Pearce's ferry operation, which he opened in 1877.<sup>11</sup>

Parties of settlers are documented stopping at Tassi in 1877, 1879, and 1880; journals from the first and last of these groups reported the presence of Native Americans at the springs.<sup>12</sup> Pearce ended his ferry service in 1883, after which "the wagon trail saw occasional use by stockmen and sheepherders," many of whom likely stopped at Tassi.<sup>13</sup> Little is known about occupation and use of the springs around the turn of the century, but historian Mike Belshaw was able to identify a few of the people who used the place from the 1910s into the 1930s through oral histories conducted in 1977 and 1978. Nevada rancher Sam Gentry began working cattle out of Tassi in 1912 and continued into the early 1920s. Twelve-year-old Merle Frehner and his father stayed at the springs in 1917 while delivering supplies to a surveying party in the area.<sup>14</sup> Frehner reported the existence of a stone house near the spring heads (no longer extant), inhabited by – and maybe built by – one Ed Thomas. Brothers Earl and Homer Englestead stayed at the springs while working sheep the next year, as did Henry Ferguson and Luther Swanner, two employees of Preston Nutter, in 1921. Frank "Frosty" McDougal and his partner Smith trapped from Tassi in the early 1920s. In May 1921, Laura Gentry joined her brother Sam on roundup at the springs and counted twenty-one men and women camped there. From about 1925 to 1929, Fran and Tyne Hecklethorne grazed sheep with Tassi as their base. According to multiple accounts, they also ran an illegal grain-alcohol distillery at the site, which was broken up by federal agents.<sup>15</sup>

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<sup>10</sup> William S. Collins, *Cattle Ranching in Arizona, 1540-1950, Multiple Property Documentation Form, National Register of Historic Places, 2003, E56 and E59.*

<sup>11</sup> Belshaw and Peplow, *Historic Resources Study*, 107, 238-39; Altschul and Fairley, *Man, Models and Management*, 175.

<sup>12</sup> Melvin T. Smith, *The Colorado River: Its History in the Lower Canyons Area* (Ph.D. diss., Brigham Young University, 1972), 389, 392, 394-95; Altschul and Fairley, *Man, Models and Management*, 175.

<sup>13</sup> Smith, *The Colorado River*, 400-401; quote from Altschul and Fairley, *Man, Models and Management*, 175.

<sup>14</sup> Belshaw and Peplow, *Historic Resources Study*, 108, report that Merle Frehner was 15 when he visited Tassi in 1917. According to the Social Security Administration Death Master File, Frehner was born July 20, 1905; therefore, either he was either 12 when he visited, or he visited in 1920.

<sup>15</sup> Belshaw and Peplow, *Historic Resources Study*, 42, 108-10, 111-13, 173-74. Provencher and Warner, *Cultural Landscapes Inventory*, 2a.3, describe Laura Gentry as Sam Gentry's "widow," a mistake repeated by a number of subsequent Park Service reports about Tassi.



Throughout all these occupations, the only people to file an official claim on the land were O. B. Nay and H. M. Nay, who filed a notice of location on Tassi Springs in 1903 under the provisions of the General Mining Act of 1872. They claimed the springs plus twenty surrounding acres for mining, milling, ranching, and stock raising. The Nays never received a patent for their claim, and it is presumed they abandoned it within a short time of claiming it.<sup>16</sup>

No one else officially claimed the land after the Nays, and actions set in motion by the Reclamation Act of 1902 eventually made it legally impossible to do so. Congress passed the Reclamation Act to encourage homesteading in the west through water-development projects. The act channeled money from the sale of public lands to irrigation and water-control works, but it also authorized the Secretary of the Interior to “withdraw from public entry” lands needed for projects contemplated under the act’s terms. Based on this authority, the secretary established the Reclamation Service, predecessor to the Bureau of Reclamation, which began numerous surveys and general investigations throughout the west in late 1902. Although this work included initial surveys along the Colorado River, it did not affect Tassi.<sup>17</sup> Not until 1919 did the service’s Colorado River Storage Project begin detailed surveys toward building a reservoir on the Colorado in and above Boulder Canyon, 34 miles west-southwest of Tassi Springs. When it did, the Secretary of the Interior withdrew the survey township that contains the springs from public entry.<sup>18</sup>

The secretary’s action in 1919 made Tassi Springs unavailable for homesteading and other claims. This status was further reinforced by additional withdrawals, one in 1930 when a national monument was contemplated and another when Boulder Canyon Wildlife Refuge was established in 1933 (only to be abolished in 1948). The land was further protected by the

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<sup>16</sup> O. B. and H. M. Nay, Notice and claim on Tassi Spring and twenty acres, June 10, 1903 (filed Sept. 19, 1903), Mohave County, Ariz., Recorder’s Office, Book 1 (Mill Sites and Water Rights), page 449, copy in LAME, folder “Lake Meade NRA, Alien Water Right 17 Yates.” This claim is also mentioned in Ralph G. Mihan, NPS field solicitor, to Michael D. Hawkins, U.S. attorney, Dec. 6, 1979, and Belshaw and Peplow, *Historic Resources Study*, 107, 173.

<sup>17</sup> *Reclamation Act*, approved June 17, 1902 (32 Stat. 388); *Second Annual Report of the Reclamation Service, 1902-3* (Washington: Government Printing Office, 1904), 123-25.

Provencher and Warner’s *Cultural Landscapes Inventory*, 1.10 and 2a.2, Blalack’s *Tassi Ranch and Springs Site*, 4, and the *Tassi Ranch and Springs Interim Treatment Plan* (National Park Service, 2007), 6, all assert that the Reclamation Act of 1902 authorized the construction of Boulder Dam and withdrew Tassi Springs from public entry. Neither of these claims is true. The *Boulder Canyon Project Act*, approved Dec. 21, 1928 (43 Stat. 617), authorized Hoover Dam. The Reclamation Act established an administrative structure under which the Colorado River was surveyed and dammed over the course of the next six decades, but it did not mandate specific reclamation projects. Furthermore, the act authorized the withdrawal of public lands from entry as needed for reclamation work or surveys, but it did not name specific lands.

<sup>18</sup> Tassi Ranch lies in Township 33 North, Range 16 West, Section 13, Gila and Salt River Meridian. *Eighteenth Annual Report of the Reclamation Service, 1918-1919* (Washington: Government Printing Office, 1919), 413; “First Form Withdrawal, Colorado River Storage Project, Nevada,” Secretary of the Interior’s order, May 8, 1919, copy in LAME, folder “Black Willow-Tassi 1903-79.”

establishment of Lake Mead National Recreation Area in 1964 and the proclamation of Grand Canyon-Parashant National Monument in 2000.<sup>19</sup>

Ed Yates (1884–1980) came into the area around Tassi in the late 1920s. According to historian Mike Belshaw, he first took over a tract that lay a few miles north of Tassi, Seven Springs, from Frosty McDougal. He eventually homesteaded this land, receiving a federal patent on his quarter-section (160-acre) claim in September 1940. He ran the Hecklethornes and their 2,000 sheep off Tassi and replaced them with 100 cattle of his own. Laura Gentry granted him her cattle-range interests in the Grand Wash for the payment of one dollar in 1935, specifically including her “rights” to Tassi Springs in the deal, although legally she held none. Belshaw relates that Yates “cleaned and cemented the springs,” which may indicate he constructed the stone spring box (spring box 1) that lies in the middle of the ranch core.<sup>20</sup> In March 1936, he applied for and received an Arizona Certificate of Water Rights for Tassi Springs. A water rights acquisition of this kind was normally permissible on federal land, but the 1919, 1930, and 1933 withdrawals should have prevented the state from issuing Yates such a certificate. Nevertheless, the state acted as if the land were still open for entry and permitted Yates the water rights. His certificate allowed him to channel water from the springs into a reservoir not larger than one-half acre-foot (21,780 cu. ft.) for the purposes of watering stock. On November 12, 1937, the Arizona Land Commissioner issued Yates a permit to construct the reservoir; this is the west holding pond that survives west of the ranch core today, which, once constructed, allowed about ten acres of land downslope from it to be irrigated for either pasture or food crops. With these first water improvements in place, Yates and his son built a stone ranch house in 1938, probably reusing the stones from Ed Thomas’s earlier house on the site.<sup>21</sup>

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<sup>19</sup> The withdrawal history of Tassi is complex. Executive Order 5339, April 25, 1930, withdrew lands including Tassi “for classification and pending determination as to the advisability of including such lands in a national monument.” Executive Order 6065, March 3, 1933, withdrew Tassi again as part of Boulder Canyon Wildlife Refuge. The refuge was abolished in 1948 and its withdrawals revoked by Public Land Order 501, July 22, 1948. The agreement creating Boulder Canyon Recreation Area in October 1936 had no effect on the land’s legal status, although the congressional establishment of Lake Mead National Recreation Area, Oct. 8, 1964 (78 Stat. 1039) created an additional withdrawal. The original 1919 withdrawal was partially revoked by Public Land Order 5048, Apr. 22, 1971, although this did not affect lands within Lake Mead NRA nor lands covered by the April 25, 1930, withdrawal, which was itself revoked by Public Land Order 6281, July 22, 1982. Presidential Proclamation 7265, Jan. 11, 2000, created Grand Canyon-Parashant National Monument. “Land Status Record for Township 33 North Range 16 West of the Gila and Salt River Meridian, Arizona,” Bureau of Land Management, General Land Office Records, available through <http://www.glorerecords.blm.gov/LSRSearch/>; Mihan to Hawkins, Dec. 6, 1979.

<sup>20</sup> William J. Burke, memo to file, Oct. 6, 1977, referring to an interview with Yates conducted Sept. 27, 1977; Belshaw and Peplow, *Historic Resources Study*, 113, 171, and 174, referring to an interview with Yates conducted Oct. 21, 1977; Indenture between Laura M. Gentry and Ed Yates, June 4, 1935, Mohave County, Ariz., deed book 50, pp. 160–61, copy in LAME, folder “Lake Meade NRA, Alien Water Right 17 Yates”; Homestead patent no. 1109294, BLM serial no. AZPHX0072161, Sept. 25, 1940, Bureau of Land Management, General Land Office Records, <http://www.glorerecords.blm.gov/>; Yates’s life dates determined through the Social Security Administration Death Master File.

<sup>21</sup> Field measurements made by the HAER team in 2009 indicate the west holding pond has a capacity of about one acre-foot, which is twice the size authorized by Yates’s water certificate. Is it unknown if Yates

Yates received a second water-rights certificate in 1940, this time for a small spring that sits a quarter mile northeast of the main Tassi spring heads.<sup>22</sup> Yates probably built the stone and concrete spring box (spring box 2) located at this site.

In 1949, the Bureau of Land Management formed an agreement with Ed Yates which set up a Black Willow and Tassi grazing allotment (no. 1-25, later no. 4851). Founded on Yates's possession of the water rights for Tassi Springs, this action regulated the number of head of livestock he could maintain on the land, but it also formalized Yates's claim to be grazing cattle there at all. Yates subsequently sold his grazing allotment, his water rights, and the improvements at Tassi Ranch to Eldon Smith in 1963 and moved to southwestern Colorado.<sup>23</sup> Smith owned land and held other grazing permits in the area, but he was not always the most willing participant in the BLM's range-management processes. In 1965, he posted "No Hunting" and "No Trespassing" signs on the Tassi grazing allotment, but the BLM informed him that such action was against federal regulations.<sup>24</sup> The next year, the BLM fined him \$716 for grazing cattle on the allotment and adjacent lands without a permit. A 1968 Lake Mead NRA memo noted, "Mr. Smith does not always obey the grazing rules and is frequently in trespass with the BLM on his grazing allotment."<sup>25</sup>

Smith defaulted on payments to Yates, and Yates reclaimed the property and water rights in 1970 or 1971.<sup>26</sup> In May 1971, Yates, then 87 years old, was again living at the ranch with his daughter Gladys and her husband, Osborne Gentry (a brother of Sam and Laura Gentry). The reservoir and water channels were kept in working order and the irrigation they provided supported 20 acres of pasture plus a garden planted with corn, tomatoes, chard, watermelons,

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built the pond too large initially or whether it was enlarged at a later date. Water Right Certificate No. 896 for Tassi Spring and Tassi Reservoir (Application No. R-514, Permit No. R-281), Mar. 30, 1936, and Permit to construct a reservoir (Application No. R-514, Permit No. R-281), received Mar. 30, 1936, approved Nov. 12, 1937, Arizona State Water Commission, reservoir book 4, copies of both in LAME, folder "Lake Meade NRA, Alien Water Right 17 Yates"; Mihan to Hawkins, Dec. 6, 1979; William J. Burke, memo to file, Oct. 6, 1977.

<sup>22</sup> Water Right Application A-2381 for Pigeon Wash, Upper Tassi Spring (Certificate 1370), filed September 16, 1940, mentioned in W. Werrell, memo to Western Region Regional Director, Jan. 24, 1978. There is no spring at the survey location mentioned in this certificate (T33N, R15W, Section 18, SW 1/4, NE 1/4), but Werrell, a Park Service hydrologist, concluded that the document probably refers to the spring head northeast of the ranch core (T33N, R16W, Section 13, NW 1/4, NE 1/4, SE 1/4).

<sup>23</sup> Fred J. Weiler, BLM state director for Arizona, memo to BLM director, May 15, 1968; William J. Burke, memo to file, Oct. 6, 1977; Bill Vincent, "Tassi and Grand Wash, part II," *The Nevadan* [Sunday magazine of the *Las Vegas Review-Journal*], May 23, 1971, 4-5.

<sup>24</sup> Virgil L. Hart, BLM Arizona Strip district manager, to Eldon L. Smith, Oct. 6, 1965.

<sup>25</sup> Fred J. Weiler to Eldon L. Smith, Sept. 13, 1966; Lloyd L. Garrison, memo report, Feb. 7, 1968.

<sup>26</sup> William J. Burke, memo to file, Oct. 6, 1977. The exact date Smith left and Yates returned is not clear. The final mention of Smith in LAME is a letter from Superintendent R. W. Allin to Smith, Dec. 1, 1969, and an apparently unpaid BLM grazing fee bill dated May 26, 1970; the first mention of Yates returning is Vincent, "Tassi and Grand Wash, part II."

and casabas. The ranch also featured “a couple of big fig trees.” A meal served to visitors included chicken, beans, white radishes, and green onions, all of which may have been produced on site.<sup>27</sup>

Lake Mead NRA realty specialist Lloyd Garrison noted to the park superintendent in 1971 that the BLM had never “searched the county records or made any attempt at establishing Mr. Yates’ rights or claims.” At the same time, it was clear they and Ed Yates realized he had no legal rights to the land. “At one time in the past Mr. Yates was going to accept a Section 4 permit for the houses, etc., but for some reason he never went through with the permit so now there is nothing....I believe we could persuade Mr. Yates to accept a special use permit to legalize the improvements.”<sup>28</sup> The National Park Service took no action to make this happen.

In 1972, Yates sold the Tassi grazing allotment and water rights, along with the 160 acres of private land at Seven Springs, to distant relation Dennis R. Whitmore and his wife Oneta, and moved with his daughter and son-in-law to Mesquite, Nevada. An authorization on file with the BLM gave Dennis’s brother Leland, known as Jim or James, the authority to administer the allotment and act on his brother’s behalf. The Whitmore brothers began to run about 100 head of cattle on these lands year round. To reduce grazing pressure near the springs, they routinely hauled water from Tassi by truck to stock-watering tanks located throughout their allotments, which allowed their cattle to graze over a wider territory. Sometime before 1977, they leveled an air strip six-tenths of a mile southwest of the ranch to make it easier to get to the site. They also began keeping “a large number of trucks, cars, boats and motorcycles parked or junked near the ranch house.”<sup>29</sup>

In 1977, National Park Service officials at Lake Mead NRA, prompted by an effort to identify lands for designation as wilderness, began to look more closely at land records relating to the park. These efforts brought serious scrutiny to the ownership at Tassi Ranch. During two visits to Tassi in September 1977, park employees asked Dennis and Jim Whitmore about their ownership of the ranch. Dennis Whitmore said

that he purchased the Tassi Spring Grazing Allotment and 160 acres of private land north of the recreation area known as the Seven Springs Ranch from Mr. Ed Yates in about 1973.

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<sup>27</sup> Vincent, “Tassi and Grand Wash, part II,” 4-5.

<sup>28</sup> Lloyd L. Garrison, memo to Lake Mead NRA superintendent, June 2, 1971.

<sup>29</sup> Dennis and Leland (“Jim”) Whitmore were grand nephews of Osborne Gentry, Ed Yates’s son-in-law. Belshaw and Peplow, *Historic Resources Study*, 113-14; William J. Burke, memo to file, Aug. 30, 1977; Burke, memo to file, Sept 8, 1977; handwritten note to file, Nov. 1, 1978; BLM Grazing Permit/Lease no. 1064 for Tassi allotment no. 4851, Mar. 20, 1979, copy in LAME; Ralph G. Mihan and James A. Coda, memo to NPS Western Region Regional Director, Sept. 29, 1980; unsigned draft letter to Fred Petti, assistant U.S. Attorney, Nov. 1991. A series of photographs taken by the Park Service rangers in Oct. 1977 and organized under the title “Tassi Ranch Development” in LAME forms the earliest mention of the airstrip in park records.

When questioned about the Tassi Spring and developments he indicated that these developments were part of the deal and since there was no dwelling on the 160 acres at Seven Springs that he and his brother had moved into the house at the Tassi Ranch. (The house is occupied by either he or his brother for most of the year.)<sup>30</sup>

Jim Whitmore said that he and his brother “had no deed to the property, but that they did have a Certificate of Water Rights for Tassi Spring that they had received from Ed Yates when they purchased the Seven Springs Ranch.”<sup>31</sup>

An initial search of state and federal land and water records by NPS and BLM employees in the summer and fall of 1977 – buttressed by a more detailed investigation by NPS hydrologist W. Werrell in December – determined that Yates had encroached on federal land when he developed Tassi Ranch and that the Whitmores had no legal rights to reside on or cultivate the land, although the legitimacy of the original 1936 water rights was not questioned. Superintendent Jerry D. Wagers, therefore, informed the Whitmores in May 1978 that they would have to cease all activities at the ranch not otherwise allowed by their grazing permit.<sup>32</sup>

This action sparked a protracted back and forth between the park and the Whitmores. Dennis Whitmore felt he and his brother “had been at Tassi Ranch a number of years and Mr. Yates many years before them and no one had said anything and he didn’t see what they were hurting.” Acknowledging he had no legal claim on the land but wishing to preserve the family’s investment of money and labor, he asked for an arrangement that would allow him to continue to use the ranch for his lifetime.<sup>33</sup> But the NPS was adamant. “We feel constrained to carry out the intent of Congress as reflected in our management policies which do not allow for unauthorized residence on National Park Service lands,” Superintendent Wagers wrote. As far as a lifetime residence privilege, “we feel we would be exceeding our authority to grant a right that did not previously exist.” Besides, “Mr. Whitmore’s grazing permit would still be valid and he would still continue to have the right to use the water from Tassi Spring.”<sup>34</sup>

But the water rights were not valid, and this fact finally emerged when the NPS sued in federal court to remove the Whitmores, who failed to cease their unauthorized activities at the ranch by

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<sup>30</sup> William J. Burke, memo to file, Sept. 8, 1977. It seems a cabin was subsequently erected at Seven Springs, as it was destroyed by fire on August 7, 1994; Lake Mead NRA Case Incident Record 942177, Aug. 11, 1994, copy in LAME.

<sup>31</sup> William J. Burke, memo to file, Oct. 6, 1977.

<sup>32</sup> Ralph G. Mihan, memo to Western Region Regional Director, Apr. 26, 1978; Jerry D. Wagers, Lake Mead NRA superintendent, to Dennis Whitmore, May 25, 1978; Wagers to Whitmore, July 19, 1978.

<sup>33</sup> Quote from C. Newton Sikes, chief ranger, memo to superintendent, Feb. 20, 1979; Lee E. Walker, attorney for Dennis Whitmore, to Jerry D. Wagers, Oct. 11, 1978.

<sup>34</sup> Jerry Wagers to Lee Walker, Nov. 2, 1978.

the December 31, 1978, the deadline set by Superintendent Wagers.<sup>35</sup> A June 1981 consent judgment issued by the U.S. District Court for the District of Arizona enjoined the Whitmores from residing at the ranch, fencing land, cultivating crops, irrigating, and using the airstrip. In return, the NPS issued a special-use permit that allowed the Whitmores to water cattle from the springs and otherwise use the ranch in ways “reasonably incident to the management of [their] grazing allotment,” the lease to which the BLM had renewed for a term of ten years effective March 1, 1979.<sup>36</sup>

Despite the court order, Jim Whitmore, Tassi’s primary resident throughout this period, continued to live at the ranch through the 1980s, and the brothers kept a great deal of equipment there. After repeated violations, the NPS finally cancelled the Whitmores’ special-use permit in January 1990 in an effort to force them to comply with the terms of their agreement, only to promptly renew it when the Whitmores did finally move out by March. A further renewal in January 1991 extended their use through the end of 1996.<sup>37</sup>

The Whitmores ceased to live at the ranch, and they removed some of their property, but they continued to violate the terms of their permit, and the NPS continued to take note and reprimand them without seriously threatening to expel them. In one example, they repaired the west holding pond in 1991 by removing about 125 cubic feet of fill from a hillside between the pond and the ranch core; they also dug a new ditch from the pond to the former agricultural fields, which allowed them to irrigate the fields again as pasture for their livestock. The park fined Jim Whitmore \$250 for this.<sup>38</sup>

The Whitmores’ occupation of Tassi ended in 1998. Although the NPS sent them a renewed special-use permit for signature in 1997, they ignored it and did not pay their permit fee. After a year, the Whitmores agreed to remove the last of their property from the ranch, although some of their cattle remained until 2001, when the BLM administratively closed the Tassi grazing allotment.<sup>39</sup>

The last years of private ranching at Tassi overlapped with a new period of activity by the National Park Service that has continued to shape the site ever since. Beginning in 1992, officials at Lake Mead NRA began the process of establishing management goals for the ranch site, and

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<sup>35</sup> Jerry Wagers to Leland O. Whitmore, Sept. 7, 1978; Ralph G. Mihan to Michael D. Hawkins, Dec. 6, 1979.

<sup>36</sup> U.S. District Court for the District of Arizona, civil case no. C-80-98-PCT-CAM, June 18, 1981; unsigned draft letter to Fred Petti, Nov. 1991; BLM Grazing Permit/Lease no. 1064 for Tassi allotment no. 4851, Mar. 20, 1979.

<sup>37</sup> Alan O’Neill, superintendent, to Dennis Whitmore, Jan. 11, 1990; chief ranger, telephone conversation memo to file, Feb. 7, 1990; O’Neill to Whitmore, Mar. 7, 1990; special-use permit no. WRO LAME 1200 1296, Jan. 23, 1991, copy in LAME.

<sup>38</sup> Case Incident Record no. 913580, Oct. 1, 1991; Alan O’Neill, superintendent, to Jim Whitmore, Dec. 11, 1991, both in LAME.

<sup>39</sup> Bill Sherman, email to Dale J. Antonich, Dec. 16, 1997, Provencher and Warner, *Cultural Landscapes Inventory*, 2b.2.

this led to efforts to determine the ecological and cultural significance of the springs. Initial ideas to remove the ranch structures and return the site to a natural riparian habitat were quickly abandoned in favor of stewarding the man-made and natural legacies created by more than eighty years of ranching at Tassi.<sup>40</sup>

A May 1993 campout brought a few dozen Lake Mead employees to Tassi, where they brainstormed long-range management ideas and enclosed 8,400 sq ft of pastureland established to study revegetation. (This enclosure remains in place today). Following from this start, park employees restored part of the ditch system to divert water away from the buildings in the ranch core and removed trash and other debris left by the Whitmores. In February 1994, they also fenced in the ranch core to protect the structures and prevent cattle from trampling and breaching the water ditches.<sup>41</sup>

Over time, NPS crews made extensive repairs to the ranch house, stabilized the stone boxes, removed brush, and installed a French drain to channel water away from the buildings into Pigeon Wash. To repair damage to the area immediately south of the ranch house caused by a flash flood in 2000, crews “re-channeled the wash and placed large boulders along the bank just upstream from the ranch to help dissipate the water’s energy and reduce erosion.” They also rebuilt the slope between the boulders and the ranch core that the flooding had washed away.<sup>42</sup> Brush clearing and basic maintenance continue on a limited basis at the site today.

Park management commissioned numerous studies in their effort to assert intellectual and managerial control over the ranch. These included a cultural landscapes inventory (1998–2003), the first archeological investigation of the site (1999), the first tree assessment (2001), a macroinvertebrate survey (2004), a stabilization and treatment plan (2006), and an Historic American Landscape Survey documentation project (2010), of which this report is a component.<sup>43</sup>

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<sup>40</sup> Bud Walsh, Temple Bar District ranger, memo to Jim Holland, Lake Mead park planner, Oct. 27, 1992.

<sup>41</sup> Provencher and Warner, *Cultural Landscapes Inventory*, 2b.2; unsigned draft letter to Jim Whitmore, June 1993; Alan O’Neill, superintendent, to James Whitmore, Feb. 11, 1994. Notes and memos on the parks various activities at Tassi appear in LAME.

<sup>42</sup> *Tassi Ranch and Springs Interim Treatment Plan*, 11.

<sup>43</sup> Provencher and Warner, *Cultural Landscapes Inventory*; Blalack, *Tassi Ranch and Springs Site*; Dennis Swartzell to Rosie Pepito, Oct. 12, 2001 [Horticulture Consultants, Inc. report on trees at Tassi Ranch], reproduced as Appendix C in *Tassi Ranch and Springs Interim Treatment Plan*; Donald W. Sada, *Abundance, Distribution, and Habitat Use of the Grand Wash Springsnail (Pyrgulopsis bacchus)*, *Grand Canyon-Parashant National Monument, Arizona* (Report prepared for National Park Service, March 2005).

## PART II. PHYSICAL INFORMATION

### A. Landscape character and descriptive summary

Tassi Ranch sits on the western edge of the Arizona Strip, isolated by rugged desert terrain, the Grand Canyon, and the Colorado River from the cities and towns of southern Nevada, southern Utah, and central and southern Arizona. Rolling basin-and-range geological formations define the region surrounding the ranch, and its harsh climate has restricted the growth of flora and fauna in the vicinity. The ranch, however, is endowed with multiple natural springs that provide fresh water year-round. The moisture from these springs and the dense, layered vegetation that has grown up where the water flows create a microclimate that makes the ranch core more hospitable to man and beast than the broader desert surrounding it.

The water and vegetation have provided respite for travelers in the region for hundreds of years. Sheep and cattle ranchers began to make the springs their own in the early twentieth century, efforts that culminated between the mid-1930s and the early-1960s with rancher Ed Yates's development of the irrigation system and simple compound of buildings that survive at the site. Yates's improvements were maintained and supplemented into the late 1980s by subsequent residents Eldon Smith and Dennis and Jim Whitmore, and the ranch today represents the cumulative efforts of these men across the entire working life of the place to shape the site's natural advantages to serve human economic and habitational needs. Since the early 1990s, National Park Service staff have sought to preserve the evidence of human use at the ranch while managing the return of aspects of the riparian environment that existed before the springs were developed. The result is a site that shows layers of intervention over time – where the natural was converted to the cultural, and now the cultural is being tentatively converted back.

### B. Character-defining features

#### 1. Natural features

**a. Topography:** Tassi Ranch lies in the western United States in a geologic transition zone between the Basin and Range Province and the Colorado Plateau. The immediate region is characterized by typical basin-and-range formations (parallel mountain ranges alternating with valleys), with the ranch sited along a gently sloping bench in one of the valleys. The range that towers over the ranch to the south and southeast is part of a formation called the Cockscomb, and a pass through it immediately opposite the ranch is called the Box. The ranch sits about three miles upstream from Lake Mead on the north bank of Pigeon Wash, a tributary of the Colorado River. Immediately to the northwest and north lies the Grand Wash drainage, which empties significant portions of southern Nevada and northwestern Arizona into the Colorado. The ranch sits at an elevation between 1,475 and 1,640 feet above sea level. To the east, the two parallel ranges of the Grand Wash Cliffs rise 3,000 feet to the broad Shivwits Plateau.<sup>44</sup>

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<sup>44</sup> U.S. Geological Survey, *Mount Trumbull, Arizona* [map], 1:100,000, 30x60 Minute Series (Topographic) (Reston, Va.: USGS, 1986); idem, *Gyp Hills Quadrangle, Arizona* [orthophotomap], 1:24,000, 7.5 Minute Series (Topographic) (Reston, Va.: USGS, 2009).



The irrigated fields and the ranch core were developed on the site's more level ground, which lies adjacent to the Pigeon Wash channel. The irrigation system was constructed to take advantage of a gentle westward drop in the topography from the spring heads to the west holding pond and then, ultimately, across the irrigated fields. The rugged slopes or gullies between the fields were unsuitable for planting or grazing and have become mesquite and catclaw thickets over time. Higher ground above these all these features was historically used as non-irrigated pasture.

**b. Climate:** The ranch is situated in the Mojave Desert and experiences broad seasonal and daily temperature fluctuations, ranging from extreme lows in winter of 8 degrees Fahrenheit to August highs of 119 degrees Fahrenheit. Dry afternoon and evening winds up to twenty-five miles per hour in the late winter and early spring are characteristic of this region. Annual precipitation averages five inches. Seasonal rains come between November and April, but severe summer thunderstorms are also common, sometimes leading to flash-flooding in Pigeon Wash. Moisture from the springs and the dense, layered vegetation supported by the spring water create a microclimate in the ranch core that is cooler by day and warmer by night than the surrounding desert.<sup>45</sup>

**c. Water:** The sole reason for prolonged human activity at Tassi is the constant supply of water provided by its natural springs. By the same token, this activity has altered the original flow patterns of the springs and even obscured the number and position of the spring heads. Basically, there are three or four water sources at Tassi. The first source emerges from the ground 120' upslope from the ranch house. NPS hydrologist W. Werrill described it in 1977 as comprising "some seven or eight openings...oriented in a straight line and thus indicat[ing] strict geologic control."<sup>46</sup> This source feeds into a ditch that runs about 1,000' to a holding pond west of the ranch core. The second source may lie under the spring box 1, which sits 73' northeast of the ranch house. Alternatively, this spring box, by being excavated into the ground, may simply be watered from the high local water table. This same buried source has been channeled into a hose that emerges from the ground 24' southwest of the house. The hose runs above ground 4.5' to a stock tank. During the last couple of decades that Tassi was a ranch, this hose extended further and was used to fill a tanker truck the Whitmores used to haul water elsewhere on their grazing allotment. A final spring source emerges from the ground one-quarter mile northeast of the ranch core, along the entry road; its water was once collected in the adjacent spring box 2.

The Arizona Division of Water Rights measured the flow of water at Tassi as 183,000 gallons per year in 1936, but a 2002 survey gives the rate as 75 gallons per minute or 39.4

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<sup>45</sup> Provencher and Warner, *Cultural Landscapes Inventory*, 3a.10.

<sup>46</sup> W. Werrell, memo to Western Region Regional Director, Jan. 24, 1978.

million gallons per year.<sup>47</sup> Historically all this water flowed directly downhill into the wash. The upper source was diverted in the 1930s to feed the holding pond west of the ranch core, while the middle and lower sources have been enclosed and piped. Because the ranch buildings lie between the primary spring sources and the wash, seepage, flooding, and robust vegetation growth have been common challenges facing all the ranch's caretakers over time. The NPS has installed an extensive program of French drains around the house and outbuildings to drain the land and aid preservation of the buildings.

Pigeon Wash adjacent to the ranch is usually dry, but it and other washes in the area can flood during seasonal rains. The strong flows from these flood waters do erode the wash's banks from time to time.

**d. Vegetation:** Water flow from the springs has dictated the patterns of vegetation growth at Tassi. When the site was maintained as an active ranch, the water was collected in spring boxes as well as channeled to a holding pond and irrigation ditches to water fields for planting. Vegetation was, therefore, concentrated in the ranch core and in irrigated pasture fields. It also thrived in those areas of the adjacent wash that received runoff. Since the end of habitation, breaks in the man-made water system have created new flow patterns, and thickets of shrubs have emerged wherever the spring water has seeped or flowed. These thickets consist mainly of arrow weed (*Pluchea* sp.) and Gooding's willow (*Salix goodingii*). More arid areas that have not been subject to grazing are dominated by catclaw acacia (*Acacia greggii*) and mesquite (*Prosopis velutina* and *Prosopis glandulosa*). Much of the shrub growth at the ranch is so thick that, left unmanaged, it is almost impenetrable.

The preponderance of tree and shrub species at the site have taken root without human intervention. The ranch core, however, is sheltered by western cottonwood trees (*Populus fremontii*), planted to create shade and a windbreak. With a few exceptions, these stand in a row along the edge of Pigeon Wash. Photographic evidence reveals that the row predates 1947, and some of the trees extant today likely date from the first half of the century.<sup>48</sup>

Additional cottonwood trees stand on the slope above the ranch house. Another specimen towers above a ticket supported by the spring water just west of the ranch core. The remains of a large fallen cottonwood tree rest at the bottom of the slope west of

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<sup>47</sup> The clearest description of the spring heads appears in Sada, *Abundance...of the Grand Wash Springsnail*, 6. Flow rates are taken from from William J. Burke, memo to file, Oct. 6, 1977, and *Tassi Ranch and Springs Interim Treatment Plan*, 14, which cites an unnamed 2002 report by the Grand Canyon Wildlands Council.

<sup>48</sup> Belknap Photographic Services, three views of Tassi Ranch taken Feb. 1947. These photographs were donated to Lake Mead NRA in 1976; they include two views of the ranch house and a view looking north toward the ranch core taken from across Pigeon Wash. The donation is recorded in William Tweed, memo to Lake Mead NRA chief of interpretation, Apr. 23, 1976.

the west holding pond, indicating the former influence of the irrigation system on this now arid part of the ranch.

**e. Wildlife:** The ranch's woody thickets create habitat for a variety of insect and bird species, while its shallow and shaded water courses are inhabited by relict leopard frogs (*Rana onca*), speckled dace (*Rhinichthys osculus yarrowi*), Grand Wash springsnails (*Pyrgulopsis bacchus*), and other species of aquatic macroinvertebrates.<sup>49</sup>

## 2. Designed features

**a. Land use (spatial organization):** The ranch is organized into three functional zones. Furthest east is the ranch core, containing structures for working, living, and water storage in close proximity to the spring heads. Further west, approximately ten acres were historically irrigated by the ranch's water system to provide either agricultural fields or pasture land. Upslope of these two zones lie additional, non-irrigated fields once also used as pasture.

**b. Circulation:** The site is accessible by Lake Mead NRA Approved Road 152A, a single-lane dirt road that leads to the ranch from the northeast, which follows Pigeon Wash down from the northeast. On the opposite bank of Pigeon Wash from the ranch core, Road 152A becomes Approved Road 148 and rises out of the wash onto the ridge. It continues past the Whitmores' landing strip to its eventual termination at Grand Wash Bay in Lake Mead. A second dirt road, Approved Road 149, leads to the ranch through the Box, having followed the bed of Pigeon Wash in from the east. A subsidiary dirt road within the ranch leads from Road 152A across the ranch to the west holding pond. These roads are rugged and best negotiated in four-wheel-drive vehicles. Although Mesquite, Nevada, sixty miles away, is the nearest town to the ranch by road, the travel time between it and the ranch is two to three hours because of the road conditions.

**c. Views and vistas:** Vegetation is sparse across much of the ranch, providing for wide vistas down the valley and out to the surrounding mountain ranges. Views within the heavily overgrown ranch core and the watered portions of Pigeon Wash, however, are highly obstructed.

**d. Constructed water features:** The Tassi Ranch *Cultural Landscapes Inventory* describes how Ed Yates "took advantage of the uphill spring head locations to develop his irrigation system downhill of the water sources. This system is relatively simple and allowed for the irrigation of crops with the least amount of upkeep and infrastructure

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<sup>49</sup> Donald W. Sada and Cory A. Jacobs, *Environmental and Biological Characteristics of Springs in Grand Canyon-Parashant National Monument, Arizona* (Report prepared for National Park Service, August 2008), 1. See also Sada, *Abundance...of the Grand Wash Springsnail*.

The relict leopard frog is a candidate species for inclusion on the federal list of endangered and threatened species, while the Grand Wash springsnail is listed as a "species of concern"; U.S. Fish and Wildlife Service Endangered Species Program, <http://www.fws.gov/Endangered/listing/index.html>

development possible, while utilizing the existing water sources and slope of the site.”<sup>50</sup>  
The system comprises the following parts.

*East holding pond.* A dry pear-shaped pond, roughly 33' x 19', is located in the pasture above the ranch core. A single ditch runs about 180' east from it to the ranch's perimeter fence, where, were it watered, it would drain down the slope toward the access road. This ditch may have once served as an irrigation ditch for the small upper pasture. A fragment of unconnected ditch lies about 130' to the southeast and may also represent an incomplete or partially removed improvement associated with this pond. There is no apparent way to fill this pond, as there is no evidence of any connections between it and the ranch-core spring heads, which lie downslope from the pond. The date for the pond has not yet been established.

*West holding pond and associated irrigation ditches.* A second, larger holding pond is located in the pastureland west of the ranch core. It is roughly 80' x 113' and 9' deep. Filled to its rim, it would contain about 42,500 cu. ft. of water, or about one acre-foot. A main irrigation ditch 1,000' long originally fed water to the pond from the spring heads above the ranch house. Two additional ditches that branch into many shallow irrigation ditches run from the pond to fields to the south and west. Furrows are still evident in these fields running downhill from the irrigation ditches.

The pond has two drains, one at the bottom of the pond and one along its upper edge. The lower drain, controlled by a valve, formerly drained water to the south through the lower reservoir wall. From there the water flowed downhill along and across the agricultural fields to the south and east. The upper drain prevented water from overtopping and eroding the reservoir walls by passively draining water to the west through the top edge of the pond. The water then flowed downhill across the fields to the south and west. The upper drain would only operate if the pond were full, and it seems likely that the southeastern fields watered through the lower drain received more consistent irrigation throughout the year.

The main irrigation ditch no longer carries water the full distance from the springs to the pond because it has breached in a number of places from animal trampling and the erosive action of the water. The spring water now flows from the spring heads to the closest breach and then down the slope to Pigeon Wash.

*Spring box 1.* The ranch-core spring box, about 4.5' x 4', is located about 70' northeast of the house. It is a dug into the ground, lined with fieldstone and cement, and has a sloping top covered by a wood hatch. This hatch is a modern restoration by the NPS. The box is located directly downhill of the primary

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<sup>50</sup> Provencher and Warner, *Cultural Landscapes Inventory*, 3a.2.

spring heads. It is watered either by the high water table or by an historic spring head over which it was built. A pipe, no longer functioning, formerly supplied water from this cistern to the bathroom addition to the ranch house. The spring box's date of origin is unknown, but historian Mike Belshaw notes that Ed Yates "cleaned and cemented the springs" during the 1930s, and this may refer to the construction of this spring box.<sup>51</sup>

*Spring box 2.* Located one-quarter mile northeast of the ranch core along the approach road, this 6.5' x 4.5' rectangular, open-topped fieldstone spring box or cistern sits adjacent to a spring head. Arrangements for filling it with water are no longer evident, but it was once filled by pipe. It may date from 1940, when Ed Yates filed a water-rights application for probably applied to this spring.<sup>52</sup>

*Stock tank.* A 9' x 4' x 2' metal stock tank is set into the ground along the line of cottonwood trees 25' southwest of the ranch house. Water from spring heads above the ranch house is brought to the tank by a partially buried hose. This hose was once longer and was used to fill a tanker truck used by the Whitmores to haul water to stock-watering tanks located throughout their grazing allotments. Formerly, the overflow from this tank flowed downhill along Pigeon Wash; now, a hole in the tank allows the water to seep directly into the surrounding ground, and the area has become a habitat for relict leopard frogs. The tank is estimated to date from the 1990s.<sup>53</sup>

**e. Buildings and structures:** The ranch contains a small collection of vernacular buildings. Some of these are built of local materials, in particular the fieldstone ranch house and cisterns and the native log fences and corrals. The ranch is more than thirty miles from the nearest towns, but the railroad-tie walls of the barn, the dimensioned lumber of the shed, and the concrete used extensively around the site demonstrate a willingness by the builders to haul in materials not available at the site when needed.

*Ranch house.* The ranch house is the focal point of the ranch core. It sits on concrete footings and features external walls and internal partitions formed of uncoursed fieldstone bound with mud mortar and concrete. The gabled roof is formed of logs and dimensioned planks protected by corrugated sheet-metal panels on the outside. The interior floors are poured concrete, separate from the building's footings.

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<sup>51</sup> *Tassi Ranch and Springs Interim Treatment Plan*, 44; Belshaw and Peplow, *Historic Resources Study*, 113.

<sup>52</sup> W. Werrell, memo to Western Region Regional Director, Jan. 24, 1978.

<sup>53</sup> Blalack, *Tassi Ranch and Springs Site*, 9; *Tassi Ranch and Springs Interim Treatment Plan*, 43. Photos from the 1994 installation of the ranch-core perimeter fence in LAME show the tanker-filling hose in place. The fence was installed straddling the tank.

The house comprises a main rectangular block, 36' x 31.5', containing three rooms, and two additions, one for a storeroom and one for a bathroom.<sup>54</sup> A large room about 31' x 9' sits along the south side of the house, with screened windows running the full length of the south wall. The door to the interior cuts through the center of this wall. Along the east wall are supply and drain pipes for a sink that is now removed. Windows in the east and west walls look outside. Two windows and two doors cut through the north wall communicate with the adjoining northeast and northwest rooms. A third internal door connects these other rooms to each other. The northeast corner room (about 14.5' x 16') has north- and east-facing windows and is plastered. The northwest corner room (about 15' x 16') contains a fireplace on the north wall and a west-facing window. A small hatch with a wood door, located to the left of the fireplace, provides a pass-through for supplies from a small storeroom or pantry (about 6' x 8') that is built off the north wall of the house. This storeroom is accessible through a dedicated exterior door on its west wall and features shelves on its north and south walls and a small east-facing window. The walls of the storeroom addition are made of the same mortared fieldstone as the main body of the house. In contrast, a second one-room addition, grafted onto the northeast corner of the house, is built of roughly coursed rectangular stones. Flat-roofed, this addition has windows on each wall and an external door leading in from the south. An internal partition divides this addition into two spaces, a south room with a sink and a north room with a concrete bathtub/shower enclosure, a hot-water tank, and a drainpipe that may have served a toilet.

Ed Yates claimed to have built the ranch house in 1938 with the assistance of his son. He also claimed he built it with the help of one or both of the Hecklethornes.<sup>55</sup> Other claims have been made that one Keith Nay built it at an unknown date and that a man named Oldfield built it in the late 1920s or early 1930s, although these may be in error or may refer to the previous ranch house on the site.<sup>56</sup>

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<sup>54</sup> The house's exterior dimensions were measured by the HAER documentation team in Nov. 2009. All interior dimensions are taken from a measured diagram in JoAnn Blalack, Susan Wells, and Laura Bergstresser, *Determination of Eligibility for Nomination to the National Register of Historic Places for Tassi Ranch and Springs Site, AZ* (National Park Service, Western Archeological and Conservation Center, Aug. 2004), 12.

<sup>55</sup> William J. Burke, memo to file, Oct. 6, 1977, referring to an interview with Yates conducted Sept. 27, 1977; Belshaw and Peplow, *Historic Resources Study*, 113, referring to an interview with Yates conducted Oct. 21, 1977.

<sup>56</sup> Frederick L. Brown, *Paiutes, Mormons, and Mericats: A History of Grand Canyon-Parashant National Monument* draft (National Park Service Pacific West Region Office, July 2009), 189: note 55. For the Oldfield claim, Brown cites Dean E. Finkbeiner, "An appraisal report of the estimated market rental value of a certain 20-acre parcel, located in Twp. 33N, Ranger 16W, Sec. 13", in L3035, Tassi Spring, James Whitmore file, LAME. For the Nay claim, Brown cites an interview with Norman and Anita (Nay) Tom conducted by Milt Hokanson, February 11, 2005.

The stones from an earlier ranch house noted by visitors in 1917 and 1918, may have been incorporated into the existing house.<sup>57</sup> The bathhouse addition was built after 1947, as it does not appear in photographs of the ranch taken at that time.<sup>58</sup>

*Barn.* A small barn about 24' x 17' stands 31' east of the ranch house adjacent to the northwest corner of the corrals. It is built of salvaged railroad ties, stacked with notched and lapped ends in the manner of a log cabin. It rests on a dry fieldstone foundation and has a pitched wood frame roof covered by corrugated sheet-iron panels. The building contains two spaces, a large outer room (about 14' x 15') open to the yard along its south wall with a window facing east, and a small inner room (about 8' x 15') with south- and west-facing windows that opens off the outer room. The barn has dirt floors. A wood and wire coop, now in ruins, is attached to the barn's northeast corner. Photographic evidence reveals the barn was built before 1947.

*Shed.* A simple one-room gable-ended shed or cabin (about 9' x 12') sits about 20' west of the ranch house. It has a wood frame and is sheathed with circular-sawn dimensioned boards. The board roof is partially protected by tar paper. Screened windows that run the full length of the east and west walls provide cross ventilation. A square opening in the south wall covered by a sheet-metal panel with a circular hole in its center probably indicates the former presence of a stove in the shed. It is possible the building was used as sleeping quarters. Alternatively (or subsequently), it may have served for storage. Photographic evidence indicates the shed was built after 1947.

*Corrals.* A combination of native log poles, salvaged railroad ties, dimensioned lumber, and small areas of chain-link and plywood make up the corrals. The enclosed corrals comprise a main area flanked six holding pens on the west and two or three more on the east.

**f. Small-scale features:** About 26 acres at Tassi Ranch are enclosed and subdivided by approximately 5,700' of fencing. Although much of the fencing extant today was restored by the National Park Service in the 1990s to protect the ranch from grazing animals, the fences follow the historic lines established over time by the ranch's occupants to enclose the irrigated fields and control the movement of cattle.

The primary fencing material, today as in the past, is barbed wire, sometimes supported by metal posts (many modern), sometimes strung between rough wood posts fashioned from native tree trunks and limbs (many presumed to be historic). The fencing runs along five main lines, four that create a perimeter about the ranch and one that divides

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<sup>57</sup> Belshaw and Peplow, *Historic Resources Study*, 108-109.

<sup>58</sup> Belknap Photographic Services, three views of Tassi Ranch taken Feb. 1947.

the ranch into eastern and western zones. The northern fence line runs for about 2,240' along the northern edge of the upslope pastures. The western fence line runs approximately 340', although a section 92' in length is missing. The southern fence line follows the north side of Pigeon Wash, a run of about 2,500'. Part of this line is obscured by dense vegetation, however, while large sections comprising about 770' are collapsed or missing, many from erosion into the wash. A section of wood worm fence installed by the NPS immediately south of the ranch house and barn in 1994 replaces a lost run of post-and-rail fence that once formed part of this fence line. The corrals form the southeastern corner of the ranch's fence system, connecting the southern line to the eastern line, which proceeds uphill for about 270' to the northeast corner of the ranch. The middle fence runs north to south about 220' and separates about 5 acres containing the ranch core from the about 21 acres of fields and pastures to the west.<sup>59</sup>

**g. Archeological sites:** Tassi Ranch lies about one mile south of the Grand Wash Archeological District, established in the 1970s after archeological surveys on mineral-lease tracts found evidence of Native-American occupation in the area possibly dating back to 3000 BC. In 1999, three archeologists from National Park Service's Western Archeological and Conservation Center spent two weeks evaluating historic and prehistoric resources at Tassi. They discovered 33 lithics and 17 ceramic fragments in two study areas, one in the former irrigated fields and the other in the upslope pasture immediately east of the small holding pond.<sup>60</sup>

### PART III. SOURCES OF INFORMATION

#### **A. Primary Sources**

Lake Mead National Recreation Area headquarters, Boulder City, Nevada. Tassi historical files, 1903-94.

Bureau of Land Management. General Land Office Records. <http://www.glorerecords.blm.gov/>.

#### **B. Historic views and photographs**

Belknap Photographic Services, Boulder City, Nevada. Tassi Ranch, Feb. 1947. [3 views]. Lake Mead NRA.

#### **C. Secondary Sources**

Altschul, Jeffrey H., Helen C. Fairley, et al. *Man, Models and Management: An Overview of the Archaeology of the Arizona Strip and the Management of its Cultural Resources*. U.S. Forest Service / Bureau of Land Management report, 1989.

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<sup>59</sup> The non-extant post-and-rail fence replaced with a worm fence by the Park Service in 1994 is shown in one of the three Belknap Photographic Services views of Tassi Ranch taken in Feb. 1947.

<sup>60</sup> Blalack, *Tassi Ranch and Springs Site*, 7.



- Blalack, JoAnn, Shirley Shirley, and Meredith Wilson. *Tassi Ranch and Springs Site, Documentation and Trip Report No. LAME 1999 E*. National Park Service, Western Archeological and Conservation Center, Nov. 2004.
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- U.S. Geological Survey. *Gyp Hills Quadrangle, Arizona [orthophotomap]*. 1:24,000. 7.5 Minute Series. (Topographic). Reston, Va.: USGS, 2009.
- . *Mount Trumbull, Arizona [map]*. 1:100,000. 30x60 Minute Series (Topographic). Reston, Va.: USGS, 1986.
- Vincent, Bill. "Tassi and Grand Wash, part II." *The Nevadan* [Sunday magazine of the *Las Vegas Review-Journal*], May 23, 1971.



Fig. 1. The core area of Tassi Ranch, looking northwest from the top of the adjoining range. Lake Mead National Recreation Area Approved Road 152A enters from the right and passes the corrals near the lower middle of the photograph. The ranch house and barn are hidden amid the cottonwood trees to the left of the corrals. The largely barren, non-irrigated pasture above the ranch house and its enclosing fence are visible in the center of the image. Photograph by Alexander Matsov, November 2009.



Fig. 2. The narrow walls of this pass, called the Box, tend to channel seasonal flood waters toward the ranch core. Flood damage in 2000 led the National Park Service to install the boulders visible on the far edge of Pigeon Wash as an erosion deterrent. Photograph by Christopher Stevens, November 2009.

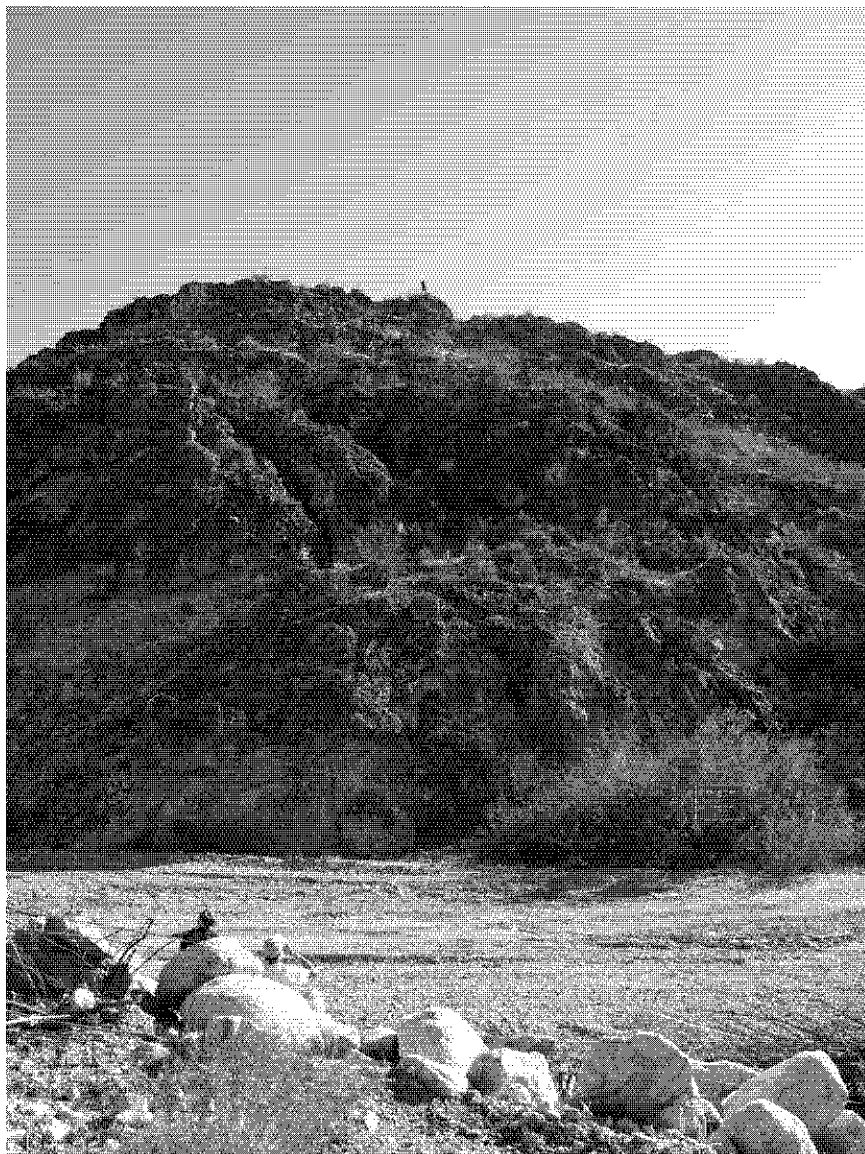


Fig. 3. Erosion-preventing boulders, the bed of Pigeon Wash, and the rock formation opposite the ranch core. Photograph by Christopher Stevens, November 2009.



Fig. 4. The ranch house and barn. Photograph by Christopher Stevens, November 2009.

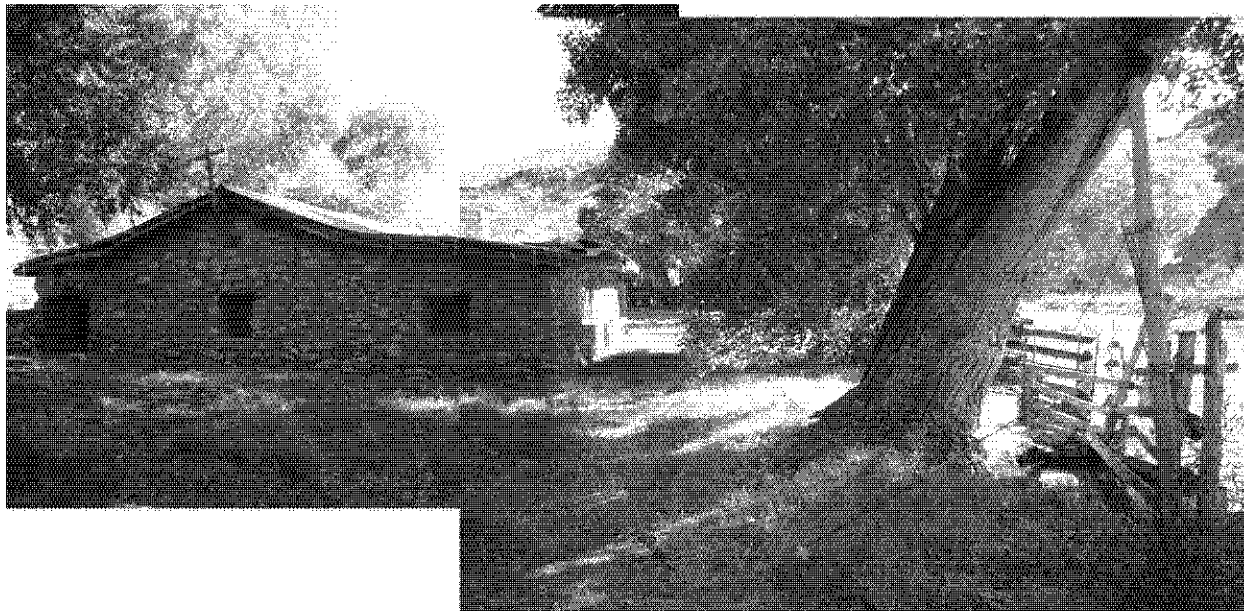


Fig. 5. Composite view of the ranch house, the row of cottonwood trees, and the worm fence installed by the National Park Service in 1994. The metal stock tank sits on the ground under the fence at right. Photographs by Alexander Matsov, November, 2009.



Fig. 6. The metal stock tank. Water from spring heads above the ranch house is brought to the tank by a partially buried hose. This hose was once longer and was used to fill a tanker truck used by the Whitmores to haul water to stock-watering tanks located throughout their grazing allotments. Formerly, the overflow from this tank flowed downhill along Pigeon Wash; now, a hole in the tank allows the water to seep directly into the surrounding ground, and the area has become a habitat for relict leopard frogs. Photograph by Christopher Stevens, November 2009.



Fig. 7. Spring water flowing southwest from the ranch core along part of the bed of Pigeon Wash. This view demonstrates the extent to which the presence of water encourages dense plant growth around Tassi Springs. Photograph by Christopher Stevens, November, 2009.





Fig. 8. The main irrigation ditch, looking east toward the ranch core. The clear demarcation between plant growth and desert shows the effects of a breach in the ditch. Photograph by Christopher Stevens, November 2009.



Fig. 9. The access road from Pigeon Wash to the west holding pond. The main irrigation ditch runs along the top of the rise above the road, where the prickly pear cactus is seen growing. Photograph by Christopher Stevens, November 2009.



Fig. 10. The basin of the west holding pond, looking toward the mountains south of the ranch. The indentation along the lower edge of the berm in the center of the photo is one of the pond's two drains. Photograph by Christopher Stevens, November 2009.



Fig. 11. The south drain in the west holding pond. Photograph by Christopher Stevens, November 2009.



Fig. 12. The restored fence enclosing the pasture above the ranch core, showing the rough wood posts fashioned from native tree trunks and limbs that historically supported most of the barbed-wire fencing at the ranch. Photograph by Alexander Matsov, November 2009.



Fig. 13. The low table land at the western end of the ranch that was formerly irrigated for use as pasture. Lake Mead National Recreation Area Approved Road 148 rises out of Pigeon Wash on the far side of the valley, leading past the Whitmores' landing strip to Lake Mead, about three miles to the southwest. Photograph by Christopher Stevens, November 2009.