MSB Fish & Wildlife Commission

Handout

Mat-Su Invasive Pike Update

COFFECTION Supplement

Parker Bradley Invasive Species Biologist Alaska Dept. Fish and Game Sport Fish Division

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Suppression



Eradication

Survey and Monitoring



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MSB Fish & Wildlife Commission Alexander Creek

Alexander Creek is remote in nature

- 26 Air Miles NW of Anchorage
- 1st In a series of major tributaries to the Susitna River
- Alexander Lake is 800 surface acres
- Mainstem is approximately 40 river miles
- Pike introduced into Alexander Lake in mid 1960's
- **Discovered in lower Alexander** Creek in 1990's



Alexander Creek and Talachulitna River Chinook Salmon Escapement Index Counts



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Alexander Creek Chinook Salmon Escapement Index Counts and Pike catches



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Alaska Fish Resource Monitor

(Rf

Chelatna

Lake

Skwentna Airport



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Kings and Anderson Lakes – Oct. 2020



Kashwitna Pit – July 2021



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Lower Fire Lake and Fire Creek – Oct 2022



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Alaska Fish Resource Monitor Lake Bathymetry AWC **Fish Passage** AFFI Pike Habitat Permits Aquatic Farming Northern Pike Waters AK Dept of Fish & Game Find address or place Q Kashwitna Rive Hau willow Cree Clear Creek Trimble Glacier Little Susitna Rive Main objectives Houst Collect data on known pike lakes Cottonwood Follow up on pike reports Knik Arm Chuqiak Monitor vulnerable waterbodies Eagle River Eao Meeting Supplement Anchorage.

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2020 and 2021 Summary

- Captured 1,695 pike
 - Nancy Lake (676 pike)
 - Gerry Lake (303 pike)
 - Stephan Lake (233 pike)
- Documented 15 new pike lakes







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Sitka Blacktail Deer Coalition: SBD Transplant AK History. http://sitkablacktail.org

Home (/) About What We Do (/What-We-Do) Who We Are (/Who-We-Are) Contact (/Contact) Other Groups & Connections (/Other-Groups-And-**Connections**) Blog: From The Deck (/From-Jims-Porch) The Deer Deer Biology (/Deer-Biology) Hunting (/Hunting) Research Needs (/Research-Needs-2) Deer Photos And Videos (/Deer-Photos-And-Videos) Publications And More (/Publications-And-Info-1) Join Us Give (/Give) Updates (/News)

NEWSLETTER (/NEWSLETTER-MAIN)

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Sitka Black-tailed Deer Transplants, Relocations, and Introductions

For over a century Sitka black-tail deer have been transplanted, relocated, and introduces throughout Southeastern Alaska, the Gulf of Alaska, and Haida Gwaii. We provide accounts

of these efforts directly from the publications we provide links for so you can read more if you wish.



TRANSPLANTS AND INTRODUCTIONS IN ALASKA

MSB Fish & Wildlife Commission We have directly copied the text from a 2009 Alaska Dept. of Fish and Game text (citation below), and a 2008 Proceedings from the Research Group on Introduced Species 2002 Symposium, an Environment Canada publication (citation below) which we think is a great resource on the history of humans moving sitka blacktails around the landscape. We have also created the summary map (above) using the same information. On the map above green deer are transplants and introductions, blue deer are capture sites, red deer are introduction that are believed to have failed.

PAUL, T. W. 2009. Game transplants in Alaska. Technical bulletin No. 4, second edition. Alaska Department of Fish and Game. Juneau, Alaska. 150pp. PDF Link

(http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/game_transplants_alaska.pdf)

Prince William Sound – 1916 to 1923

In 1916, the Cordova Chamber of Commerce arranged to have black-tailed deer (Odocoileus hemionus sitchensis) moved from the Sitka area to Hinchinbrook and Hawkins Islands in Prince William Sound (Elkins and Nelson 1954). This was the initial big game transplant in Alaska, and it has proven to be one of the most successful. The effort resulted in the release of 8 deer on these islands.

The Territorial Governor's office, using funds provided by the Territorial Legislature, sponsored a continuation of this project from 1917 through 1923 and an additional 16 deer from the Sitka area were released on the same area during this period. The deer survived and spread throughout the islands of Prince William Sound. A small number migrated to the mainland and established other populations. Brookman (1984) gives an account of how deer were captured in the Sitka area for this transplant and the Kodiak transplant (see below). Although official records do not elaborate on the Sitka operation, it appears at least some if not all of the deer were captured

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MSB Fish & Wildlife Commission by William Hanlon and his son Ike, using a simple, creative, but

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unorthodox method. They trained their dog Tuffy to chase deer into the sea where Ike waited with a small skiff. Ike approached a swimming deer, pulled the rear end of the deer into the skiff by its tail, wrapped the rear legs with cloth to protect them, tied the legs with rope, then lifted the rest of the deer into the boat and tied its front legs.

Upon capture, the deer were shuttled to a larger boat for transport to town and then kept in holding pens in Sitka until transport for all deer was arranged across the Gulf of Alaska to the transplant sites (Brookman 1984). The Hanlons captured at least 30 deer using this method, the same number that were transplanted to Prince William Sound and Kodiak from Sitka during 1923–1924.

Sitka black-tailed deer in Prince William Sound are at the extreme northern limit of their range (Cowan 1969). However, the deer on the islands thrive because the maritime-influenced climate results in milder winter conditions on the islands than experienced on the adjacent mainland (Shishido 1986). Nevertheless, periods of high winter mortality have occurred in the late 1940s, mid 1950s, late 1960s, early 1970s (Reynolds 1979), and late 1990s (Crowley 2001). ADF&G biologists devised a snow index in 1980 to track winter severity that over time has been found to accurately follow deer population trends (Nowlin 1997). As in Southeast Alaska, key to continued deer winter survival is maintaining adequate old growth forest canopy to intercept snow, provide shelter, and keep forage unburied and available to deer (Shishido 1986, Reynolds 1979). Highest deer densities occur on the large islands with lower densities on the small islands and on the mainland close to Prince William Sound. Occasional sightings have occurred in Units 6A and 6B on the mainland east of Prince William Sound, and, after several mild winters, on the Kenai Peninsula and as far north and west as Anchorage (Crowley 2007).

MSB Fish & Wildlife Commission Handout Legal hunting was first permitted in 1935 (Elkins and Nelson 1954). An average of 1,000 to 1,500 deer were harvested annually in the Prince William Sound area before 1978 (Reynolds 1979). Harvests began to increase after 1978 and peaked at 3,000 in 1987. The average estimated harvest in the 1990s was 2,160, ranging from 1,300 to 3,000 deer. Annual reported harvests in the early 2000s averaged 2,500 and ranged from 1,900 to 3,000 deer (Crowley 2007).

Glacier Bay – ca. 1920

An undocumented, unofficial, deer transplant apparently occurred in Glacier Bay sometime around 1920, when a small number of deer were released on Willoughby Island, 12 miles inside the entrance to the bay. Hoonah elder William Johnson, Sr. reportedly claimed responsibility for the transplant many years later, stating it was an effort to aid a struggling deer population through a difficult winter (Greg Streveler, former NPS Glacier Bay National Park Research Biologist, personal communication, 2008). The deer were reportedly moved to the island from the Hoonah area in the hold of Johnson's fishing boat. In 2008 a small number of deer still persisted on Willoughby Island, which has an area of approximately 4 sq. mi.

Homer Spit – 1923

In 1923, 7 deer from the Sitka area were released on the Homer Spit on the Kenai Peninsula (Elkins and Nelson 1954). These animals soon disappeared from this area and the transplant was considered a failure.

Kodiak Archipelago – 1924, 1934

In 1924, deer transplant efforts shifted to the Kodiak area when 14 animals were released on Long Island (Elkins and Nelson 1954). Like the animals for the Prince William Sound release, these deer were obtained from the Sitka area. Two additional deer, from Prince of Wales Island, were released on

Long Island in 1930. Meeting Supplement

MSB Fish & Wildlife Commission Handout 22 of 43 The results of the Long Island transplant were not immediately apparent. In a March 1931 report to the legislature, the Alaska Game Commission mentioned that only 3 does and 2 bucks had been seen on Kodiak Island.

Because of the apparent failure of deer to move readily from Long Island to Kodiak Island, efforts were renewed in 1934 to establish deer on Kodiak Island (Alaska Game Commission 1935). Using Federal Emergency Relief funds, deer were captured in the Rocky Pass area near Petersburg. On 15 April, 5 does and 4 bucks were released on Kodiak Island.

The techniques used for capturing deer in the Rocky Pass area were similar to those used by the Hanlons in Sitka in 1924. Selected animals were driven from small islands into the water, where they were picked up in small boats and then transferred to the larger patrol vessel Seal. The animals were rubbed dry, placed in wooden crates, and held for shipment. The technique was fairly effective; 9 animals were shipped to Kodiak and 12 to Yakutat Bay.

Legal hunting on Kodiak Island was initiated in 1953 and 38 bucks were taken that year (Elkins and Nelson 1954). The harvest in 1967 was 1,500 deer and that decade's average annual kill was about 950 animals. By the late 1960s deer from Kodiak Island had successfully established themselves on adjacent Afognak Island.

After a few years of decline due to severe winters in 1968–1969 and 1970– 1971, deer numbers in the Kodiak Archipelago grew steadily to an estimated 100,000 by the mid 1980s (Smith 1989). A series of harsh winters occurred again beginning in 1987–1988 (Smith 1991) and the estimated population dropped 50%, reaching a nadir about 1992. Deer numbers increased for several years to near 80,000 but plunged again to an estimated 40,000 after the 1998–1999 winter, the severest on record (Van Daele 2001). Through 2005–2006, subsequent winters were mild to moderate and the 2006 population estimate was 65,000 deer (Van Daele 2007).

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MSB Fish & Wildlife Commission Handout The dramatic population swings are a consequence of an introduced

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ungulate using an island habitat whose vegetation evolved in the absence of herbivores (Van Daele 2001). Brown bears prey on deer, but predation does not limit the population. Throughout most of the Kodiak Archipelago, winter forage is not protected by a dense forest canopy as it is in the rest of Alaska's Sitka black-tailed deer range. As a consequence, the Kodiak population is more vulnerable to severe winter weather and deer winter kill is usually higher there than other parts of Alaska. In this situation hunting is usually compensatory for annual winter mortality and so over the years hunting regulations have generally been liberal. Bag limits since 1970 have ranged from 3 to 7 deer with usually a 5- or 6-month season. Estimated reported harvest since 1987, when a hunter harvest questionnaire was first sent out, has ranged from a high of 13,800 in 1987 to a low of 2,500 in 2000. The 2005 harvest was about 6,600 deer (Van Daele 2007).

The deer transplant to the Kodiak Archipelago is clearly a success. Although they were put into an area that does not have an ideal climate and lacks adequate winter range, and as a result have suffered large swings in population periodically, the original 25 Sitka black-tailed deer have multiplied into tens of thousands and thrived on the islands, providing a huntable population for over 50 years.

Yakutat Bay – 1934

As mentioned in the Kodiak Archipelago section, some of the animals captured at Rocky Pass in Southeast Alaska in 1934 were shipped to Yakutat Bay. On 27 March 1934, 7 does and 5 bucks were released on several small islands near the east shore of the bay (Alaska Game Commission 1935).

For decades the population persisted in very small numbers on the islands. Heavy snowfall and abundant wolves and black bears limit deer densities, but the population has supported small harvests over the years. Due to deer declines and almost complete cessation of harvest in the 1970s, the deer <u>Meeting Supplement</u> <u>1/20/2022</u> <u>23 of 43</u> MSB Fish & Wildlife Commission Handout season in Unit 5 (Yakutat area) was closed in July 1980. By the end of the 1980s, deer had recovered to some degree and the public requested an open season. The Board of Game instituted a limited 1-buck, 1-month season hunt in 1991. Since then, a few deer have been taken most years, including reports of illegal harvest. Estimated harvest from 1991 through 2001 averaged 5 deer a year and was never more than 7. However, during 2002-2005 the harvest jumped to about 30 deer a year. Local residents report that deer expanded their range to the mainland and as far inland as the Dangerous River, 20 miles to the east. Deer were routinely seen along the road system near the community of Yakutat as well as the areas adjacent to Highway 10 on the Yakutat Forelands. Prior to 2004 deer were seldom seen on the mainland. A series of mild winters in the early 2000s is probably responsible for deer expanding their range (Barten 2007). Even following the severe winter of 2006-2007 with an unusually deep and persistent snow pack, deer tracks were reported at Dry Bay, about 50 miles east of Yakutat (Neil Barten, ADF&G Juneau Wildlife Biologist, personal communication, 2008).

In the past, most deer were taken incidentally by local residents who happened to detect an animal on the beach while they were conducting other activities. But after 2002, the increased abundance of deer and the better chance of success led more hunters to specifically target deer (Barten 2007).

This transplant successfully established deer populations with a long-term, albeit tenuous, presence on the Yakutat area islands. The deer have provided opportunistic hunting for Yakutat residents and augment their main subsistence harvests of moose and mountain goats. It was thought for years that there is little potential for this herd to increase because of the extreme climatic conditions and limited habitat. It remains to be seen whether the recent growth in numbers and expansion of deer to the Yakutat Forelands during mild winters is a temporary or permanent development.

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MSB Fish & Wildlife Commission Lynn Canal – 1951 to 1956

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Several unsuccessful attempts were made to establish deer in areas around Lynn Canal in Southeast Alaska. This program was conducted by the U. S. Fish and Wildlife Service from 1951 to 1956 with funds provided by the Federal Aid in Wildlife Restoration Act. Records of these transplants are somewhat vague, and the operations were evidently not well organized. At least 3 different introductions were made in Taiya Valley near Skagway, in 1951, 1952, and 1956. The minimum number of animals moved was 5 bucks and 8 does. However, the total is uncertain because 4 fawns were held for release at a later date. Documentation of additional releases could not be located.

These mainland Lynn Canal area transplants were unsuccessful. The deer in the Taiya Valley did not survive to establish a population. Burris and McKnight (1973) state that through the early 1970s reports of deer were fairly common in the vicinity of Haines. However, since then sightings have become very rare and ADF&G has never included Game Management Unit 1D (Lynn Canal mainland north of Eldred Rock) in deer survey and inventory or management reports.

The Sullivan Island transplant was somewhat more successful. Between 1951 and 1954, 8 deer were released on Sullivan Island in Lynn Canal by U. S. Fish and Wildlife Service personnel. Again, because of sketchy reporting, it is difficult to obtain exact dates and numbers. Deer were observed on Sullivan during the winter of 1963–1964 (Burris and McKnight 1973) and later. Although deer have never been abundant on the island, hunting was opened at statehood with a 4-deer bag limit as in the rest of Game Management Unit 1 (Southeast mainland). Through the late 1990s, a small number of hunters periodically reported harvesting a few deer on Sullivan Island, but although hunter effort continued, no harvest was reported from

MSB Fish & Wildlife Commission Handout 2000 through 2003 (Paul and Straugh 1996–2003, Straugh, et. al. 2004). Since 2005 the department has received anecdotal reports of deer sightings and of deer taken by hunters on Sullivan Island.

Kupreanof Island – 1979

Severe winters in the late 1960s and early 1970s killed a large percentage of deer in Southeast Alaska. On islands in central Southeast Alaska which have wolves and black bears, predation kept the deer populations depressed throughout the 1970s. In 1979, after deer hunting had been closed for 6 years in Game Management Unit 3 (the islands of central Southeast Alaska), the state legislature, hoping to speed deer population recovery, appropriated \$50,000 to "reintroduce" deer to Kupreanof Island and for wolf control in the area. The department had conducted an aggressive wolf trapping program during the winters of 1976–1977 and 1977–1978 on Kupreanof, Mitkof, and Kuiu islands with little apparent affect on deer numbers (LaVern Beier, ADF&G Wildlife Technician—Southeast Alaska, personal communication, 2007). In response to the legislative appropriation, ADF&G transplanted deer to Kupreanof Island from nearby Admiralty Island where, in the absence of predators, deer populations had recovered.

Little documentation of this effort exists. In 2 trips to Admiralty during 10 days in early March 1979, ADF&G staff "free-ranged" 10 deer of mixed sex on the beaches of Pybus and Gambier bays using tranquilizer dart-guns. In the first trip, a trial to test methods, 2 sedated deer were loaded onto a small landing craft and taken to Kupreanof Island. For the second trip, 8 captured deer were put into a pen on the deck of the ADF&G vessel Steller for transport. During that crossing of Frederick Sound the late winter weather turned nasty and rough seas washed overboard all the straw used for bedding in the deer pen. Surprisingly, the deer were not injured (L. Beier, personal communication, 2007). In all, 10 radio collared deer were successfully released on the south shore of Portage Bay on Kupreanof Island. Because of the small number of deer involved, it is unlikely the transplant had much <u>Meeting Supplement</u> <u>1/20/2022</u> <u>26</u>

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MSB Fish & Wildlife Commission Handout impact on the population. Hunting was reopened in most of Unit 3 in fall 1980 with a 1-buck bag limit. As the population recovered slowly over the years the bag limit was increased to 2 bucks in 1988 and was still a 2-buck, 4-month-long season in 2008.

References – See pages 14 and 15 of the report...

INTRODUCTIONS ON HAIDA GWAII

Gaston, A.J., Golumbia, T.E., Martin, J.L. and Sharpe, S.T., 2008. Lessons from the Islands: introduced species and what they tell us about how ecosystems work. In *Proceedings from the Research Group on Introduced Species 2002 Symposium, Queen Charlotte City, Queen Charlotte Islands, British Columbia. Canadian Wildlife Service Special Publication, Environment Canada, Ottawa*. PDF Link (http://www.haidanation.ca/wpcontent/uploads/2017/03/CWS_laskeek_lessons_all.pdf)

The following is directly from pages 12 and 13 of the above publication.

Sitka black-tailed deer Odocoileus hemionus sitkensis

Background: The first introduction of deer to the Islands was by Reverend William Collison, who lived in Masset from 1876 to 1879. On one of his visits to the mainland, likely in 1878, he bought seven Sitka black-tailed deer from Tsimshian hunters and captured one additional deer on his voyage up the coast (Collison 1915). The Hudson's Bay Company carried them across to the Islands on its steamer free of charge, and they were introduced to Masset in 1878 (Dalzell 1968). By the next year, signs of them were seen as far as Skidegate (Osgood 1901), although they were not known to occur in Queen Charlotte City until 1928 (J. Carmichael, pers. commun., 2002). It is not clear when the deer crossed over to Moresby Island, although Osgood (1901) states that a deer was killed by hunters on Moresby Island prior to 1901. The deer near Masset thrived under the protection of Alexander McKenzie, an officer of the Hudson's Bay

protection of Alexander McKenzie, an officer of the Hudson's Bay Meeting Supplement <u>1/20/2022</u>

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MSB Fish & Wildlife Commission Handout Company; after his death, however, they were apparently hunted out

(Collison 1915), although this is not certain, and some likely remained through to 1911, when the next introduction of black-tailed deer occurred.

In the spring of 1911, the B.C. Game Commission felt that conditions were right for the establishment of a new game species on Haida Gwaii. Government contractors captured 28 deer at Porcher Island, near Prince Rupert, and sent them over to Haida Gwaii (Province of British Columbia 1914). Fifteen more Sitka black-tailed deer (two of which died) were sent over later in 1911; six were sent in 1912, and seven at the beginning of 1913.

More detail on the fate of these deer is provided in another account, indicating that 30 animals from Porcher Island were towed on a scow to Ship Island in Masset Inlet. Mr. Andy McCrea was given the job of caring for them and kept them on Ship Island for a month, after which he placed them a few at a time on different points where natural feed was good (McCrea 1976).

The last documented introduction of black-tailed deer occurred in 1925, when three mature bucks were captured near Price Island and released in Sandspit by Commodore Knight of the Royal Canadian Navy (Carl and Guiguet 1972).

Local people recall the incredible abundance of deer in the 1930s. They were valued for their meat and as a source of sport for hunters. Local resident George Husband recalls "thousands" of deer everywhere during this time, many in large herds (G. Husband, pers. commun., in Laskeek Bay Conservation Society 1998). If the deer were this abundant in the 1930s, it can be assumed that the 1878 introduction was successful, as typical growth rates (1.2–1.3) would have amounted to only 1500 deer following the 1911 introduction. MSB Fish & Wildlife Commission Handout 29 of 43 The "overabundant" deer became smaller, and many had warts, boils, and liver flukes (S. DeBucy, pers. commun., 2001). B.C. Game Commission reports suggest that deer suffered from disease but remained plentiful through the 1940s (Province of British Columbia 1948). This was followed by a massive die-off in the late 1940s (Robinson 1957), as deer were likely weakened by disease and then subjected to severe winter conditions in 1950. However, numbers were considered plentiful by 1951 (Province of British Columbia 1950, 1951) and overabundant in 1954 (Province of British Columbia 1954).

This pattern seems to illustrate an exponential growth period following introduction, followed by peak and crash population cycles based on a combination of food shortage, weather, and disease. This pattern is complicated further in the mid-20th century as the rate of clearcut logging increased. According to locals, deer were once abundant in the muskeg areas, and, when logging increased, they moved into the slash areas (S. DeBucy, pers. commun., 2001). Their populations began increasing again in response to the abundance of forage in the clearcut areas following logging (S. DeBucy, pers. commun., 2001; D. Richardson, pers. commun., 2001).

The only observations found for the southern Islands indicate that deer were south of Hutton Inlet by 1937 (Hall, 1937) and on Kunghit Island by 1946, but did not likely arrive until after that date on SGang Gwaay (Duff and Kew 1958). Royal B.C. Museum staff who were at SGang Gwaay in 1957 reported the presence of deer (Duff and Kew 1958).

References – See pages 28 and 31 of the report...



December 10, 2021

SUSITNA VALLEY GAS EXPLORATION LICENSE

Preliminary Written Finding of the Director

Selected Maps From Document



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Figure 3.2. Susitna Valley Land Status Map

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Figure 4.1. Landcover in the License Areas.

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Source: (Boggs, Flagstad, Aisu, et al. 2019)

Figure 4.2. Wetland, waters, and wildland fire history in the License Areas.



Figure 4.3. Essential Fish Habitat areas in the License Areas.



Source: (Giefer and Blossom 2020)

Figure 4.4. Pacific salmon distribution and habitat in the License Areas.



Figure 4.5. Bird survey routes and important bird areas in the License Areas.



Figure 4.7. Game Management Units and moose habitat and in the License Areas.

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Figure 5.10. Transportation routes in the License Areas.

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Source: (DNR – Land Administration System records)

Figure 8.4. Surface and subsurface water rights in the License Areas.



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Source: (Giefer and Blossom 2020)

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Figure 8.5. Spawning habitat for anadromous fishes in the License Areas.

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Figure 8.7. Landscape condition in the License Areas.

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