THE CHIGNIK WATERSHED

Chapter 2 of The Chignik Watershed Plan

WATERSHED CHARACTERIZATION SUMMARY, UPDATED NOVEMBER 13, 2023

Introduction

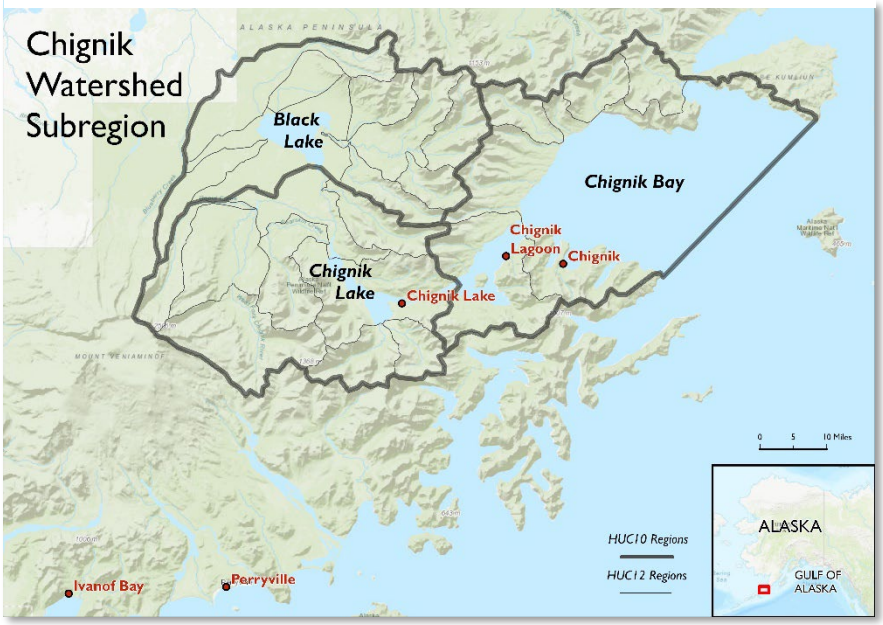
The Chignik Bay Tribal Council is preparing a subregional watershed plan for the Chignik subregion that will be used to empower local management in protecting and promoting water resources. This chapter summarizes information about the watershed, including a description of the area, identification of potential water quality threats, and documentation of current data gaps. Characterizing the watershed will help inform the stakeholder process and is the first step toward establishing priority projects to support watershed health and protection.

Description of Area

Watershed Area Boundaries

The Chignik Watershed study area is located within the Shelikof Straight Hydrologic Unit Code-8 (HUC8) watershed and encompasses three HUC10 watersheds – Black Lake, Chignik Bay, and Chignik River (Chignik Lake area). See a map of the subregion below. The communities of Chignik Lagoon, Chignik, and Chignik Lake are within the study area. Communities within and nearby the study area, such as Ivanof Bay and Perryville, rely on these waters for subsistence and commercial fishing.

FIGURE 1 MAP OF WATERSHED BOUNDARIES



The U.S. Geological Survey (USGS) uses Hydrological Unit Codes (HUC) to classify watersheds into different levels, from the regional level down to much smaller subwatersheds.

In the Alaska region, (HUC2) there are:

- 8 subregions (identified by 4-digit codes, HUC4)
- 38 basins (6-digits, HUC6)
- 112 subbasins (8-digits, HUC8)
- 542 watersheds (10-digits, HUC10)
- Approx. 15,500 subwatersheds (12-digits, HUC12)

The number of subwatersheds in Alaska and their boundaries vary based on data updates and ongoing delineation processes.

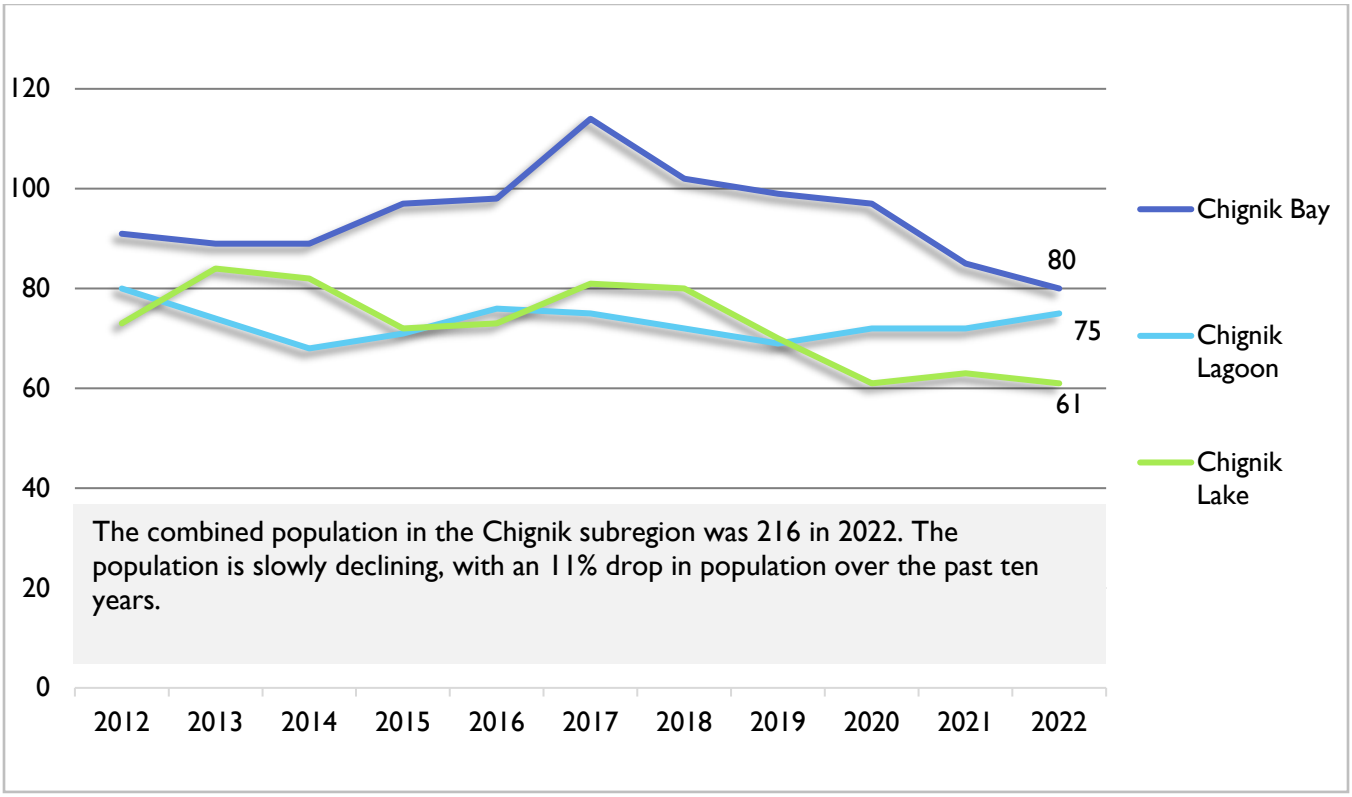
Chignik Bay Tribe, project # ACWA-23-01. This project has been funded in part by a Department of Environmental Conservation Alaska Clean Water Actions (ACWA) grant with support from the U.S. EPA.

Watershed Status

The project includes 23 HUC12 subwatersheds. None of the waters within the study area are listed under Alaska's 303(d) Category 5 Impaired Waters and therefore do not have an established Total Maximum Daily Load (TMDL).[1] Chignik Lagoon and Chignik Lake are prioritized as medium value, medium stress watersheds while Chignik Bay and Black Lake are categorized as medium value, low -stress watersheds in the Alaska Department of Environmental Conservation's Watershed Prioritization Map.[2] Two creeks in the Chignik Bay Watershed have been designated as Category 3 Assessed Waters (Not enough information).[3]

Watershed Area Population

FIGURE 2 CHIGNIK SUBREGION POPULATION TRENDS, 2012-2022



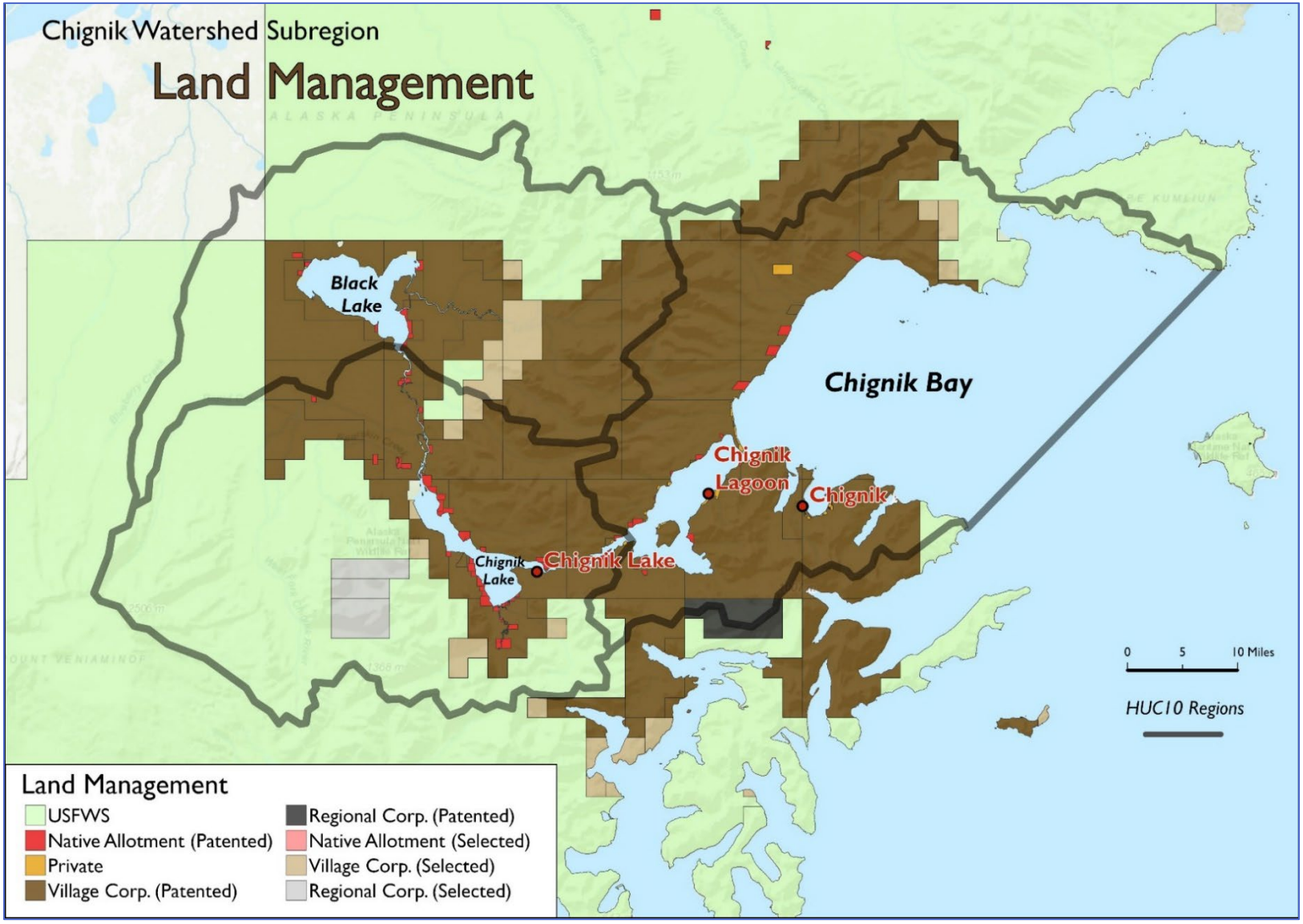
Source: Alaska Department of Labor and Workforce Development, Research and Analysis

[1] Alaska DEC Integrated Water Quality Monitoring and Assessment Report Factsheet, 2022.
[2] Alaska's Watershed Prioritization Map, Chignik Region, 2023.

[3] Alaska DEC Final Integrated Report Assessed Waters Web Map, 2022.

FIGURE 3 MAP OF LAND MANAGEMENT AREAS WITHIN THE CHIGNIK SUBREGION[4]

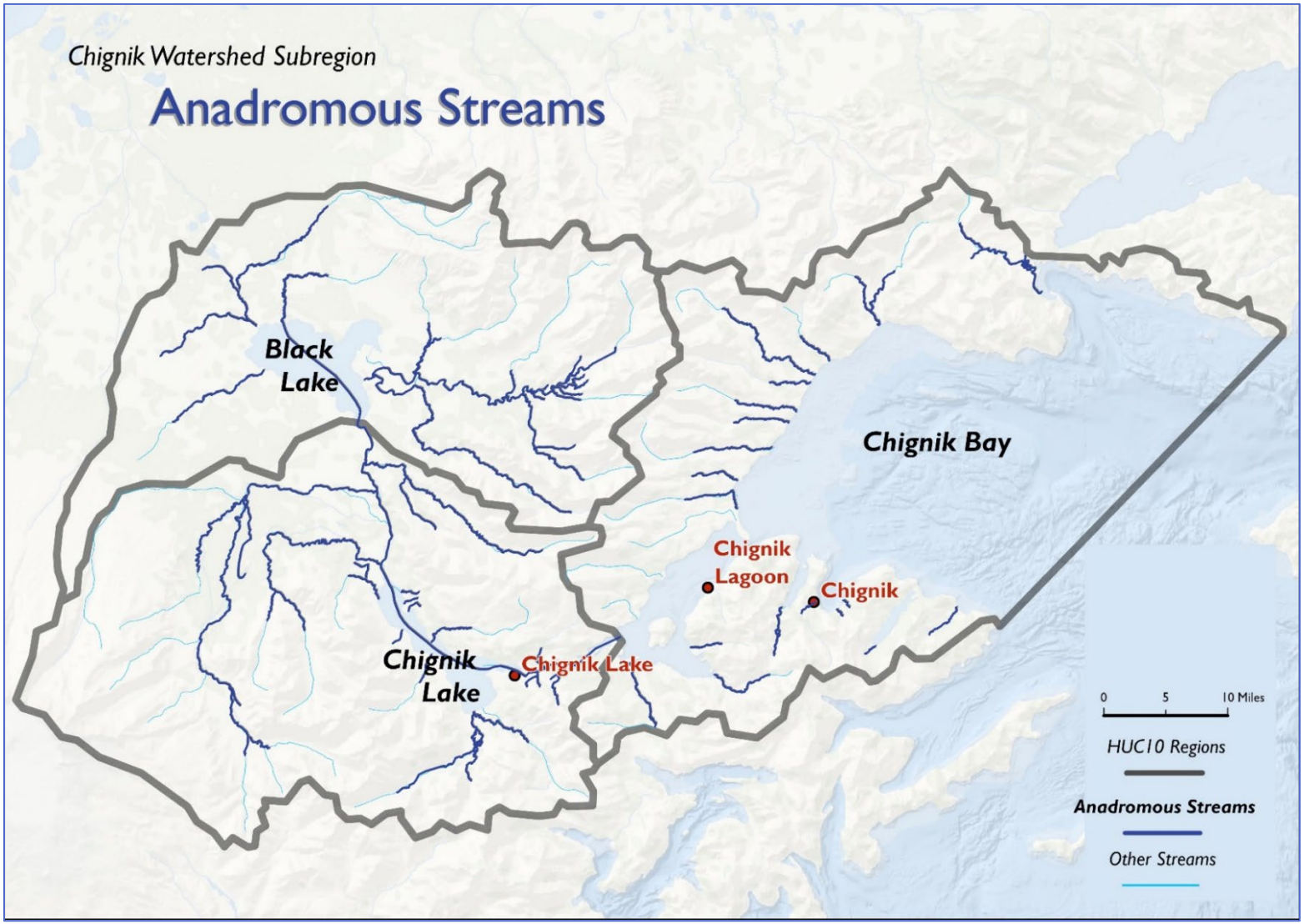
Figure 3 depicts land management for the Chignik Subregion. Approximately 43% of area within the subregion is owned/managed by village corporations (Chignik River Ltd., Far West Inc., or Chignik Lagoon Native Corp.). Depicted in light green, the USFWS land is part of the Alaska Peninsula National Wildlife Refuge.



[4] Data from US Fish & Wildlife Realty, Land Status of National Wildlife Refuges in Alaska, 2023

FIGURE 4 MAP OF ANADROMOUS STREAMS WITHIN THE CHIGNIK SUBREGION[5]

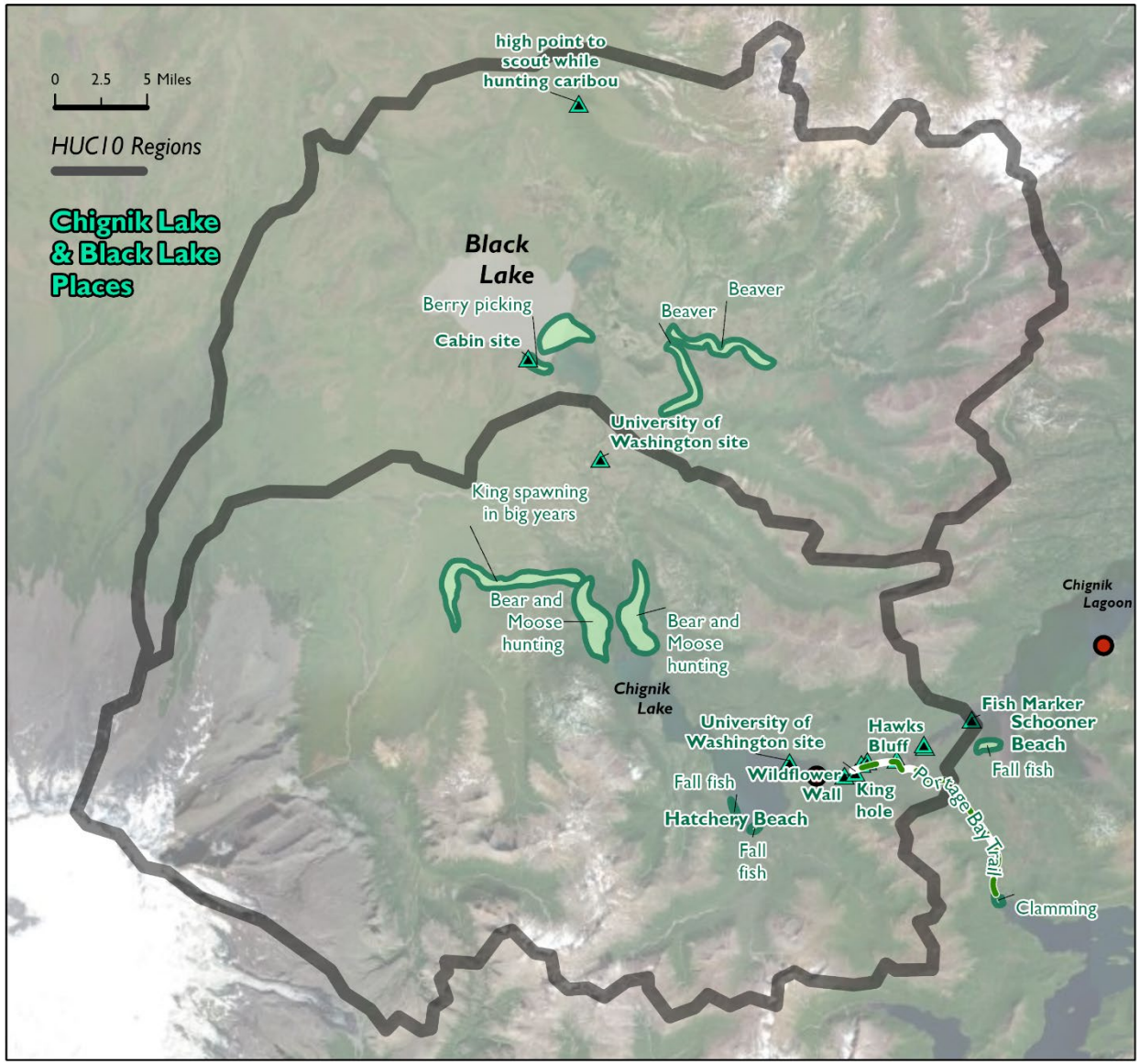
Figure 4 depicts the known anadromous streams within the subwatersheds – 683 miles and counting. The streams and riparian areas have been depicted as dynamic habitats, home to five different salmon species[6].



[5] Alaska Department of Fish & Game, Anadromous Waters Catalog, 2022

[6] Willis M., Balazs M., and Maio, C., *Very High-Resolution Mapping of Anadromous Streams and Salmon Habitat in the Chignik Watershed*, Presentation. 2023.

FIGURE 5 MAP OF TRADITIONAL LOCATIONS WITHIN BLACK LAKE AND CHIGNIK LAKE HYDROLOGIC UNITS 10[7]



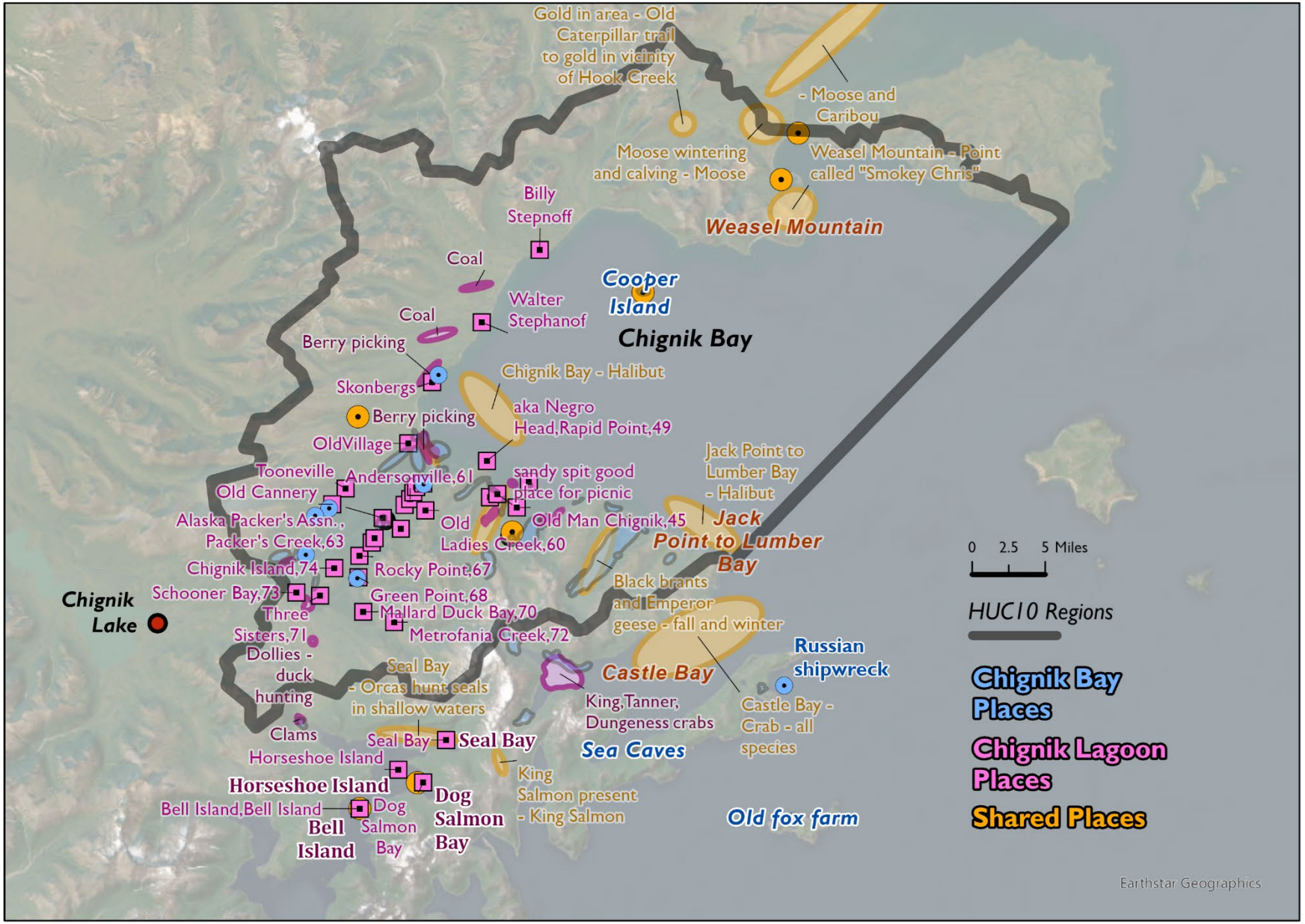
Data gathered for the Traditional Locations maps (Figure 5 and 6) is part of an ongoing Chignik Conservation Planning project funded by a 2021 EPA Indian Environmental General Assistance Program (IGAP) grant, the Southwest Alaska Fish Habitat Partnership, and the Chignik Bay Tribal Council. The project includes a series of composite maps for the area.

The goal of the project is to identify areas important for the survival and harvest of local subsistence resources, places of cultural and historical significance, and other areas that are important to protect.

To collect data for this map, residents were asked to write locations and descriptions on paper maps, which were then digitally rendered.

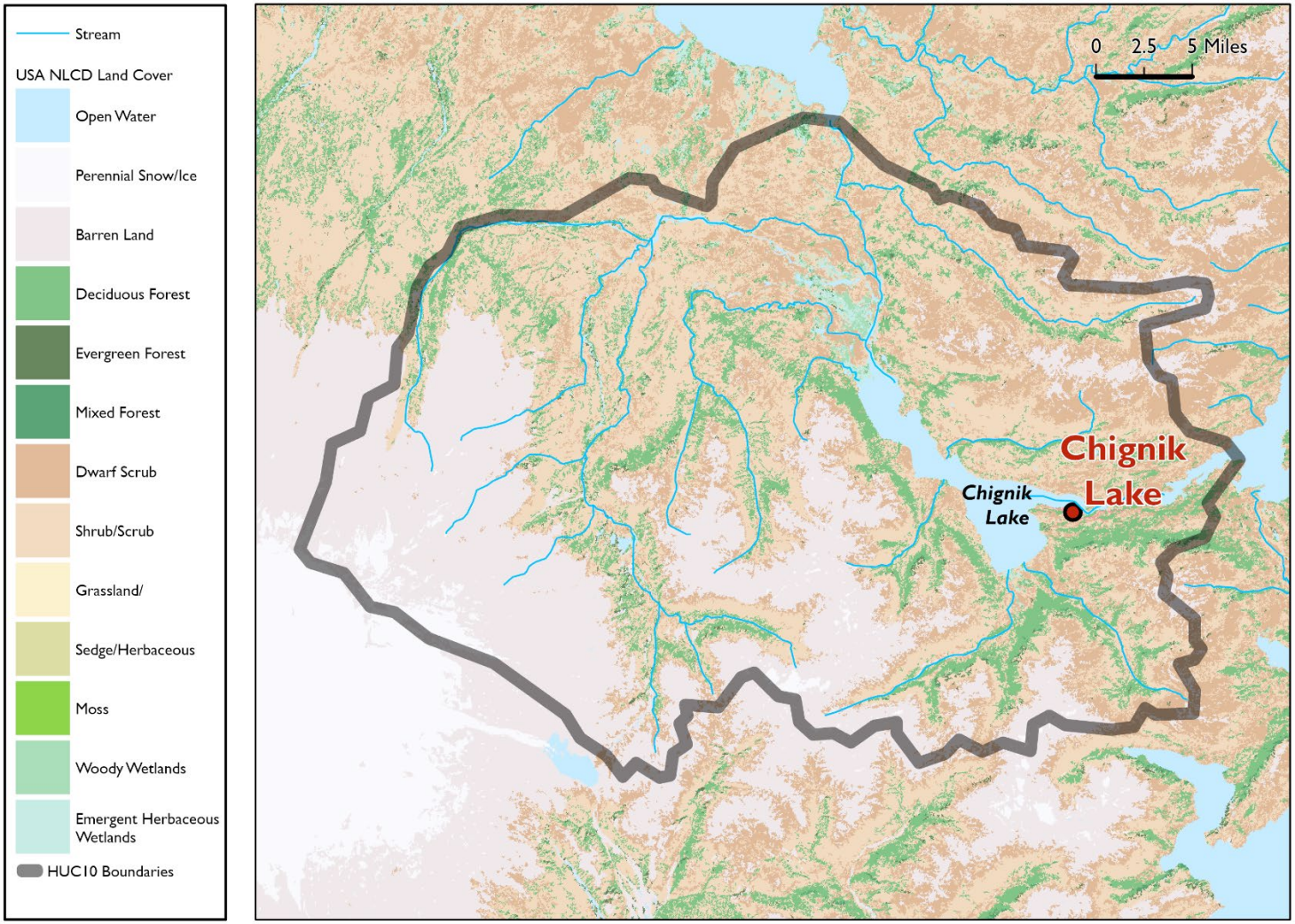
[7] Data gathered by Tim Troll at Bristol Bay Heritage Land Trust and Susan Flensburg, 2022; digitally rendered by Marcus Geist, Artesian Knowledge, LLC, 2023

FIGURE 6 MAP OF TRADITIONAL LOCATIONS WITHIN THE CHIGNIK BAY HYDROLOGIC UNIT 10[8]



[8] Data gathered by Tim Troll at Bristol Bay Heritage Land Trust and Susan Flensburg, 2022; digitally rendered by Marcus Geist, Artesian Knowledge, LLC, 2023

FIGURE 7 MAP OF LAND COVER WITHIN THE CHIGNIK LAKE HYDROLOGIC UNIT 10[9]



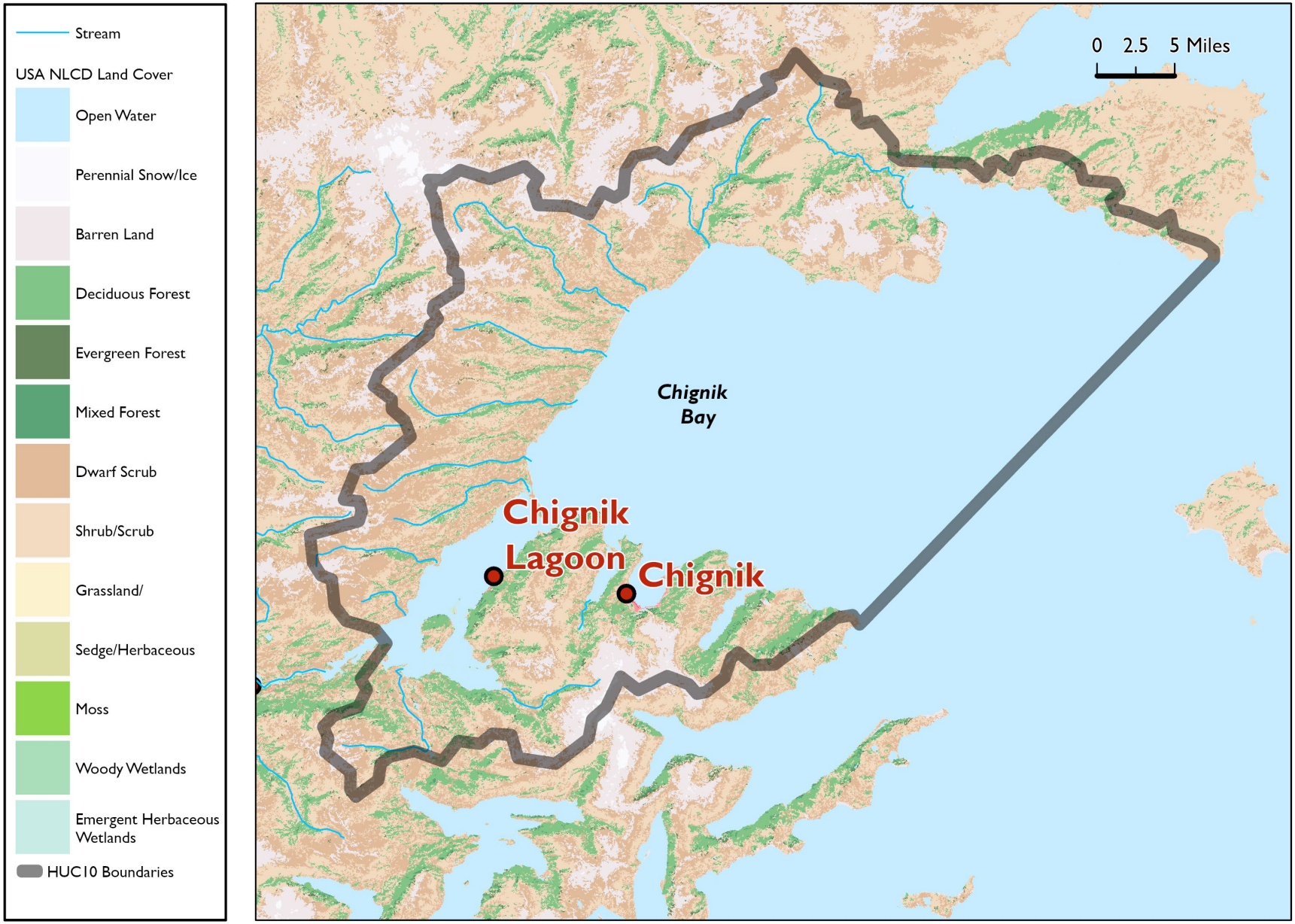
The following three maps show the land cover (vegetation type, land use, water, and bare soils) of each subwatershed (HUC10). Land cover plays a crucial role in determining how a watershed functions, from habitat protection to runoff, infiltration, sedimentation, and erosion control. Comparing how land cover shifts over time is also useful in monitoring and mitigating the effects of climate change.

This data was collected in 2016 as part of the National Land Cover Database (NLCD). To create the dataset, high resolution imagery is used and colors assigned and modified using the 16-class Anderson Land Cover Classification System.

Since nearly all of the Chignik Subregion is undeveloped, the landcover found in this region is congruent with its biome as a taiga or boreal forest. Note how the forested areas generally follow riparian channels.

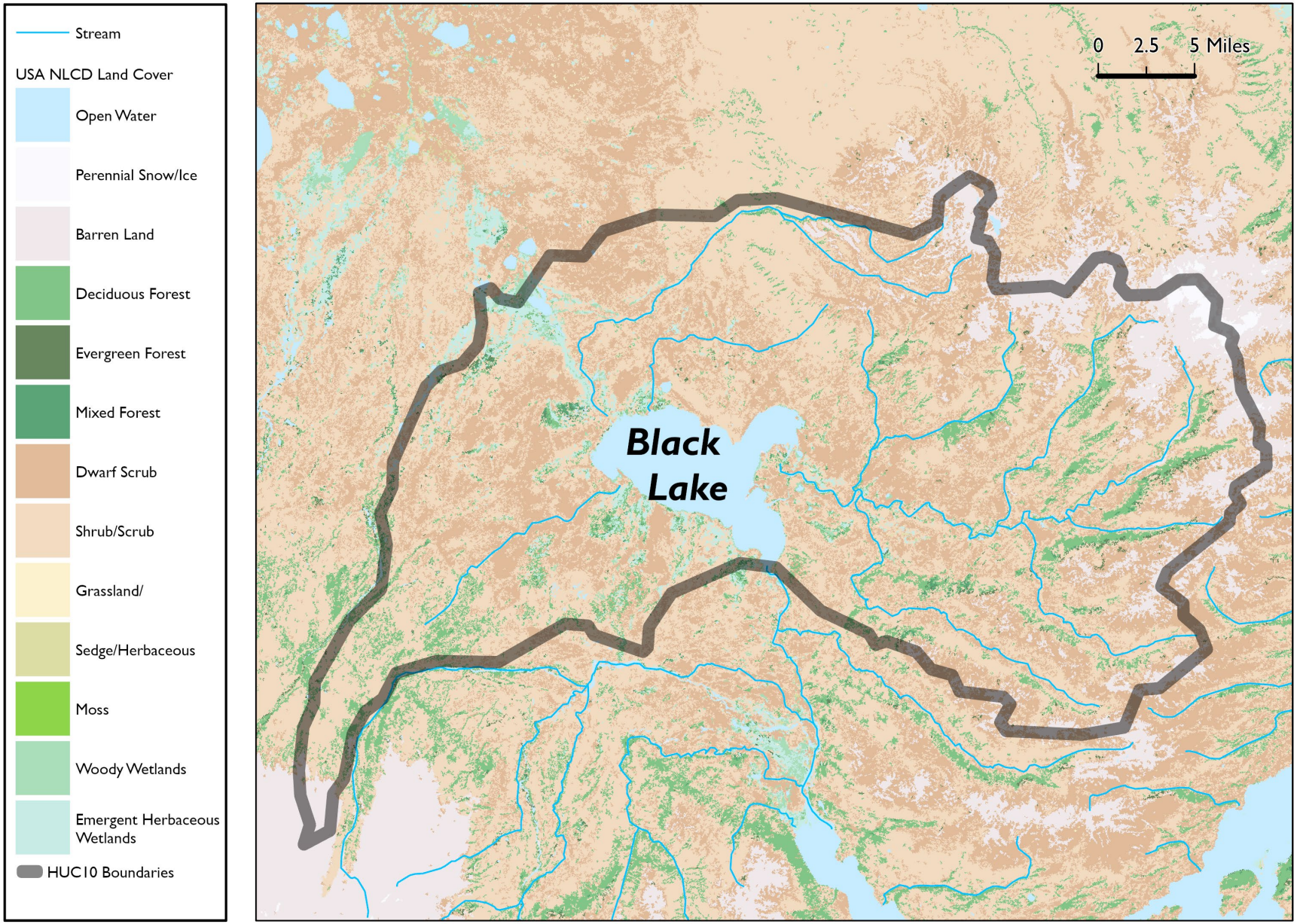
[9] Data from US Geological Survey, National Land Cover Dataset, 2016.

FIGURE 8 MAP OF LAND COVER WITHIN THE CHIGNIK LAGOON AND CHIGNIK BAY HYDROLOGIC UNIT 10[10]



[10] Data from US Geological Survey, National Land Cover Dataset, 2016.

FIGURE 9 MAP OF LAND COVER WITHIN THE BLACK LAKE HYDROLOGIC UNIT 12[11]



[11] Data from US Geological Survey, National Land Cover Dataset, 2016.

Potential Water Quality Threats

Understanding potential water quality threats and pollution sources are crucial for effective watershed management in the Chignik subregion. Identifying these factors is a critical first step towards developing a protection-based watershed plan that focuses on improving water quality and preventing future degradation of water sources and aquatic habitats.

The list of water quality threats in this document is incomplete and is based on data from narratives from local community groups and other plans related to the study area. Resources for the list include watershed characterizations and challenges presented during the 2023 Chignik Regional Climate Resiliency Symposium, historic reports documenting watershed impairment in the region, and federal and state resources, including the Alaska Department of Environmental Conservation Contaminated Sites Database.

Definitions of Point and Nonpoint Pollution Sources

Point source: *A stationary location or fixed facility from which pollutants are discharged; any single identifiable source of pollution, such as a pipe, ditch, ship, ore pit, or factory smokestack.*

Nonpoint source: *Diffuse pollution source; a source without a single point of origin or not introduced into a receiving stream from a specific outlet. The pollutants are generally carried off the land by stormwater. Common nonpoint sources are agriculture, forestry, urban areas, mining, construction, dams, channels, land disposal, saltwater intrusion, and city streets.*

Definitions from the U.S. Environmental Protection Agency, Handbook for Developing Watershed Plans to Restore and Protect Our Waters

1. **Climate Change Impacts**. Like all watersheds in the world, the Chignik subregion watershed is susceptible to climate change-related impacts, including accelerated coastal and stream bank erosion and flooding from altered precipitation patterns, increasing water temperatures, rise in sea levels, and intense storm events. These changes can lead to alterations in discharge/flow patterns, water chemistry, sedimentation, and increased risk of water contamination nonpoint source pollution, all of which can impair the long-term health and resilience of the watershed.
2. **Stormwater Runoff.** Stormwater is the flow of water from precipitation events over impervious surfaces, such as roads, parking lots, rooftops, instead of infiltrating into the ground. The runoff collects pollutants from various sources and carries them into nearby waterbodies or directly into the watershed as nonpoint source pollution.
3. **Bacterial Contamination & Nutrient Discharges.** Failing or improperly maintained septic systems, unmonitored dump sites, and unregulated sewage discharges from communities can introduce harmful bacteria and excessive nutrients into the watershed via runoff. Contamination of bacteria poses significant risks to the health of humans, aquatic life, wildlife, and the overall integrity of the ecosystem. Nutrients, such as nitrogen or phosphorus, can propagate algal blooms and deplete oxygen levels in water systems, jeopardizing the heath of residents and aquatic species.
4. **Chemical Contamination**. Improper disposal of hazardous substances can introduce chemicals, heavy metals, and petroleum products into the watershed as nonpoint source pollution. In the Chignik region, there are several abandoned buildings that may need to be condemned, which could be sources of chemical contamination. Additionally, the landfill at Rocky Point and other old dumpsites have not been monitored for potential runoff or contamination. These contaminants, if not adequately managed, can have severe impacts on water quality, aquatic organisms, and the ecological balance of the Chignik subregion.
5. **Oil and Fuel Spills.** Due to maritime activities in the region, the potential for oil and fuel spills exists within the watershed. Some spills have been reported on or near Chignik Lake as approximately 40,000 gallons of bulk fuel is hauled from Chignik Bay to the landing pad of the Chignik River then transported from by a fuel

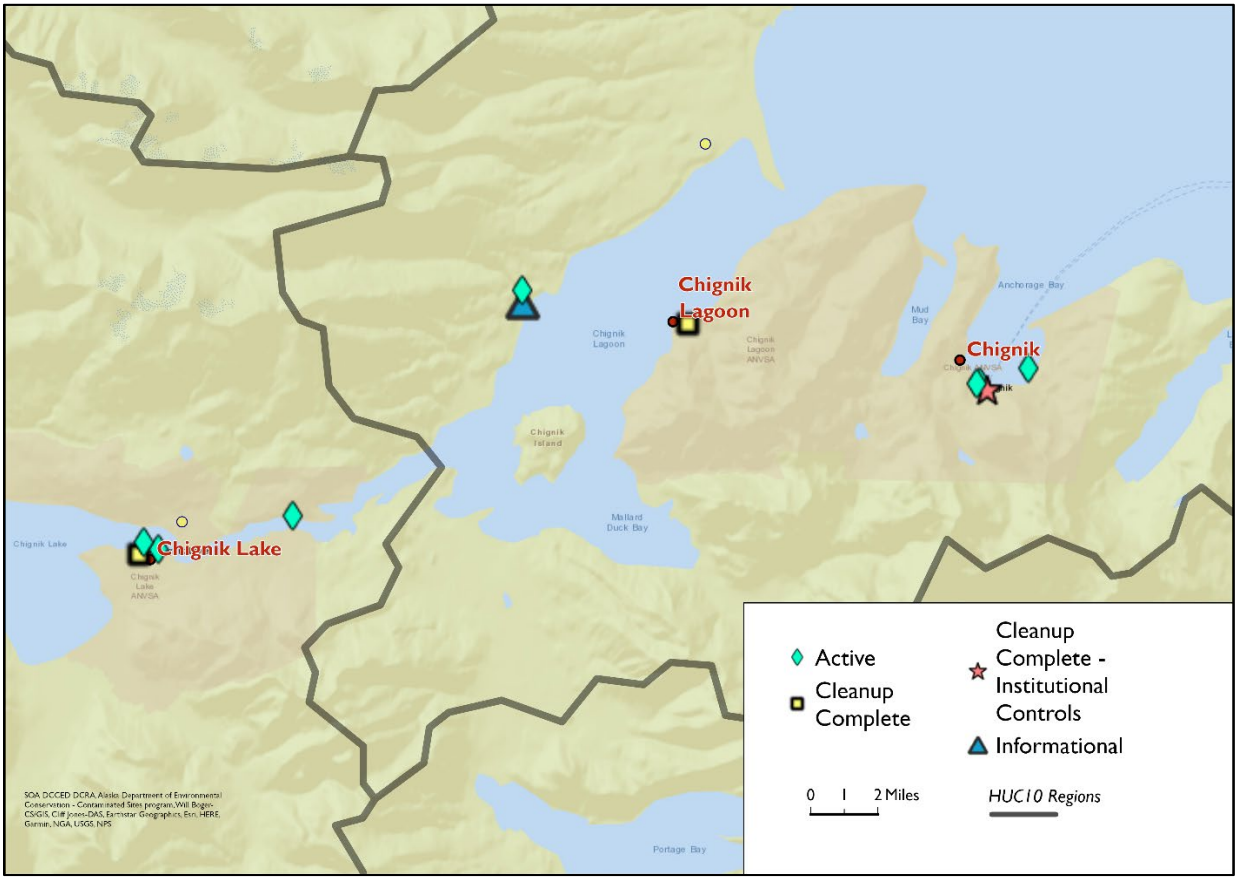
truck to a tank farm in the village.[12,13] Other spills have been reported from vessel and facility fires, bilge accidents, and groundings.[14] These include the following contaminated sites, identified in the Alaska Department of Environmental Conservation Contaminated Sites Search (see Figure 10):

i. **Chignik Bay (4):** Chignik Bay City Tank Farm, Chignik Bay School, Chignik Norquest Plant, Trident Seafoods

ii. **Chignik Lagoon (3):** Chignik Lagoon PTI Communications Central Office, Columbia Ward Fisheries Facility, Wards Cove Packing Former Cannery

iii. **Chignik Lake (4)**: Chignik Lake PTI Communications Switch Gear Station; Chignik Lake Tribal Council Old Tank Farm, Chignik Lake Fuel Transfer Tank Farm, Chignik Lake ANTHC Water Line Upgrade

FIGURE 10: MAP OF CHIGNIK SUBREGION CONTAMINATED OR WASTE DISPOSAL SITES[15]



Spills like this present as nonpoint sources of pollution and can have detrimental effects on marine ecosystems, shoreline habitats, and numerous species that rely on the region's waters for survival.

[12] Alaska DEC SPAR Online Services, PPR Spills Database (Chignik Lake CDP)

[13] Chignik Lake IGAP Proposal, 2011.

[14] Alaska DEC SPAR Online Services, PPR Spills Database

[15] Map provided by Marcus Geist using data from the Alaska Department of Environmental Conservation Contaminated Sites Program, 2023

6. **Erosion & Sedimentation.** Land disturbances from erosion and flooding lead to increased sediment runoff in the watershed, which exacerbates nonpoint source pollution from the above listed water quality threats. The community experiences flooding yearly, with the worst flooding often occurring during spring thaw. Additionally, the increase of sediment deposits can alter river flows, change water levels (reducing water depth important for spawning streams), disrupts the natural food chain by destroying habitat leading to declines in fish population, and can impact fish egg and larvae development.

7. **Mining Impacts.** The subregion is home to various mineral resources, with small mining exploration sites spread throughout the area, mostly on Bristol Bay Native Corporation lands. Mining exploration and mineral extraction/production activities could potentially impact the watershed via nonpoint source pollutants from mining operations, disturbances of water bodies, and other concerns.

Resources and Data Gaps

The project team reviewed and analyzed existing and previous plans related to the Chignik subregion to build a more comprehensive understanding of stakeholder perspectives on the needs and future direction of the community. Through our review, we identified an emerging list of data gaps. Our list of resources will grow and data gaps will shrink over the next few months as more stakeholder input is received and resources become available.

LIST OF BACKGROUND RESOURCES REVIEWED

A list of acronyms is available at the end of this document.

Document Name	Source	Project Area	Year
ADEC Solid Waste Information Management Systems (SWIMS) (Database)	ADEC	Chignik Bay, Chignik Lagoon, Chignik Lake	2023
ADEC Spill Prevention and Response (SPAR) (Database)	ADEC	Chignik Bay, Chignik Lagoon, Chignik Lake	2023
ADEC WEAR Reports	ADEC	Chignik Bay, Chignik Lagoon, Chignik Lake	2014
ADEC Watershed Prioritization Map	ADEC	State	2023
Alaska Baseline Erosion Assessment	USACE	Chignik Bay, Chignik Lagoon, Chignik Lake	2009
Alaska Region Terrestrial Invasive Plant Management Strategy	USFWS	Chignik Lake	2022
Assessing the Vulnerability of Western Alaska Exosystems and Subsistence Resources to Non-native Plant Invasion	Western Alaska Landscape Conservation Cooperative Project; Jennifer Robinette	Chignik Lake, Chignik Lagoon, Chignik Bay	2015
BBNA Brownfields Program Website	BBNA	Chignik Bay, Chignik Lake	2023
Chignik Bay Coastal Hazard Assessment	UAF Arctic Coastal Geoscience Lab	Chignik Bay	2023
Chignik Bay Inundation Maps	ADNR GGS	Chignik Lagoon & Bay	2016
Chignik Conservation Planning (Presentation)	Chignik Climate Resilience Symposium	Chignik Bay, Chignik Lagoon, Chignik Lake	2023
Chignik Lagoon Community Plan	Chignik Lagoon Village Council	Chignik Lagoon	2016
Chignik Management Area Salmon Annual Management Report	ADF&G	Chignik	2022
Chignik Regional Comprehensive Salmon Plan	ADF&G	Chignik	1992

Document Name	Source	Project Area	Year
Chignik Subregion Watershed Maps (Presentation)	Marcus Geist, Artesian Knowledge; Tim Troll, Bristol Bay Heritage Land Trust; Sue Flensburg; Community Members	Chignik Bay, Chignik Lake, Chignik Lagoon, Black Lake	2023
Climate Change and Health Effects in the Bristol Bay Region of Alaska (Presentation)	ANTHC, BBNA, & BBAHC		2014
Climate Resiliency Action Plan	Chignik Bay Tribal Council	Chignik Bay	2023
Community-Based Monitoring: Shoreline Change in SW AK	Christian J. E. (UAF Thesis)	Chignik	2023
Emergency Response Plan - Chignik Bay Tribal Council	BBNA	Chignik Bay	2023
Emergency Response Plan - Native Village of Chignik Lagoon	BBNA	Chignik Lagoon	2023
Envirofacts System (Database)	EPA	Chignik Bay Chignik Lagoon Chignik Lake	2023
FEMA (Federal Emergency Management Agency) Flood Insurance Rate Maps	FEMA	Chigniks	2023
IGAP Proposal - Chignik Lake	Native Village of Chignik Lake	Chignik Lake	2011
Integrated Solid Waste Plan for the Community of Chignik Lagoon	Chignik Lagoon Village Council	Chignik Lagoon	2017
Lake and Peninsula Borough Comprehensive Plan Update	Lake & Peninsula Borough	Lake & Pen Borough	2020
Multi-jurisdictional Hazard Mitigation Plan Update - Lake and Peninsula Borough	Lake & Peninsula Borough	Chignik Lake, Chignik Lagoon, Chignik Bay	2015
Preliminary Climate Risk Assessment	Chignik Intertribal Coalition	Chignik	2022
Sanitation Facilities Community Plan	ANTHC & City of Chignik Bay	Chignik Bay	2019
Small Community Emergency Response Plan (SCERP) - Chignik Bay	BBNA	Chignik Bay	2023
Small Community Emergency Response Plan (SCERP) - Chignik Lagoon	BBNA	Chignik Lagoon	2023
Tribal Hazard Mitigation Plan - Chignik Bay	BBNA	Chignik Lake	2019
Superfund Sites (Database)	EPA	Chignik	2023
Tribal Hazard Mitigation Plan - Chignik Lagoon	BBNA	Chignik Lagoon	2019
Tribal Hazard Mitigation Plan - Chignik Lake Village	BBNA	Chignik Lake	2019

BACKGROUND RESOURCES – PENDING (NOT YET COMPLETE)

LiDAR Mapping - Lake and Peninsula Borough

The Borough is currently conducting and processing aerial imagery for the region, which is expected to be complete in 2024 (Chignik Climate Symposium, 2023). The imagery will help capture baseline data for coastal and stream erosion and water levels for waterways throughout the region and expand the general knowledge of the subwatersheds. The data could also help create future stormwater models or drainage/runoff mapping if none exist for the communities within the study area.

National Wetlands Inventory – BBNC

A portion of the Chignik area was funded for a National Wetlands Inventory (NWI) survey through a 2021 award from the Exxon Valdez Oil Spill Trustee Council and will be administered through the Bristol Bay Native

Corporation (BBNC). The data from the survey will be available for review in 2024. The USFWS and the Bureau of Land Management are expected to fund the additional NWI surveys for the entire Bristol Bay region at a future date.

Mining & Mineral Resources – USGS, ADEC, DNR, ADFG

The project team is aware that mining claims and mineral resources exist in the study area but has not yet conducted a thorough review. USGS Quads and other documents have been pulled and research will be ongoing over the next few months.

Stormwater Management Plans – Communities, ADEC

Stormwater management plans (SWMPs) have been identified for the study area and the project team has requested SWMPs from each community, though none have been received. Other stormwater information may exist for individual facilities through ADEC's Environmental Data Management System, which may provide insight into how stormwater is managed in each community.

Green Star Program Assessments – Alaska Forum on the Environment

Through its Green Star Program, the Alaska Forum on the Environment has conducted on-site assessments of Chignik Bay, Chignik Lagoon, and Chignik Lake. The Chignik Lake assessment has been completed and requested from Green Star but not yet received; the assessments for Chignik Bay and Chignik Lagoon are expected to be completed later this year. The assessments identify desired sustainable waste and resource management improvements, which will include an inventory of local utility infrastructure and existing waste management services.

Data Gaps

This data gaps list comes from recommended areas of further study from other studies in the area, and initial thoughts on data gaps based on conservations with stakeholders at the 2023 Chignik Regional Climate Resiliency Symposium. Over the winter months we will work with stakeholders in the region to review, revise, and expand on data gaps and to identify any additional sources of information that help close the gaps.

1. **Water quality monitoring.** Lack of consistent water quality monitoring within the subwatersheds hinders accurate assessment of pollutant levels and potential impacts on aquatic systems. There is no data for the Chignik area on the Ambient Water Quality Monitoring System (AWQMS) or in the National Water Quality Monitoring Council's Water Quality Portal (NWQMC WQP). Of the approximately 45 streams in the study area, only two are listed in the ADEC's Water Quality Assessment Report and they are designated as Category 3 – Not enough information.
2. **Stream flow measurements.** Existing stream flow data is absent, making it challenging to evaluate water availability and the potential impact of varying flow rates on aquatic habitats and water supplies.
3. **Soil erosion rates.** Precise data on soil erosion is limited to coastal areas, as identified in the Chignik Bay Coastal Hazard Assessment. A comprehensive understanding of erosion-prone areas is lacking, which could lead to difficulties in implementing erosion control measures. Only one stream – Indian Creek in Chignik Bay – is currently being monitored for erosion and only within the last few years, via summer field work by UAF's Alaska Coastal Cooperative.

4. **Coastal erosion rates in Chignik Bay.** The Arctic Coastal Geoscience Laboratory at UAF recently completed a coastal hazard assessment that notes specific gaps in data for monitoring coastal erosion in this region and have field-based data from 2019 to the present day, but no historic baseline data. The following resources or tools are unavailable:
    - Tidal datum.
    - Bathymetry.
    - Lidar DTM.
    - Wave buoys to help develop a storm events index.
    - Stream gages to record stream elevation for flood modeling.
    - Infrastructure height measurements to assist with flood and tsunami event planning.
    - Frequency and severity of flooding to create hazard/exposure maps and recommend building elevation.
    - Orthorectified historical aerial imagery.
5. **Wetland inventory.** A detailed inventory of wetland coverage is missing, making it difficult to assess the overall health and ecological significance of wetland ecosystems. UAA's Alaska Vegetation and Wetland Composite notes some wetlands and uplands in this area (Alaska Vegetation and Wetland Composite | Alaska Conservation Science Catalog, 2023). However, this data was developed from landcover data and may not represent an accurate assessment of wetland presence. The National Wetlands Database shows no wetlands catalogued for the area; BBNA is working.
6. **Historic climate data.** Historical climate data provides critical insights into long-term weather patterns, trends, and variations in precipitation and wind. Past plans and reports frequently cite the lack of historic climate data as a common data gap within the area (Chignik Bay Coastal Hazard Assessment, 2023; Climate Resiliency Action Plan, 2023; Tribal Hazard Mitigation Plans, 2019). Without this data, it is challenging to accurately assess how the local climate has changed over time and anticipate future shifts, hindering effective mitigation of the impacts of climate change, such as altered hydrological patterns, increased storm intensity, or shifts in seasons.
7. **FEMA flood maps**. Flood plains are areas adjacent to rivers or streams that are prone to periodic flooding. Flood plains are determined by the Federal Emergency Management Agency through its Flood Insurance Rates Map program. FEMA has not completed any studies in the area to determine the flood hazards, which limits the ability to implement targeted flood mitigation measures, such as levees, riverbank restoration, or flood retention areas. The lack of flood plain mapping also prevents identification of suitable locations for building critical infrastructure development (e.g., wastewater treatment plants, road networks).
8. **Stormwater management**. None of the three communities appear to have stormwater management plans. Chignik Bay has a Sanitation Facilities Community Plan authored by the Alaska Native Tribal Health Consortium in 2019, but it does not include stormwater maintenance or management efforts. The absence of stormwater information creates data gaps in rainfall patterns, runoff volumes, and flow velocities. It also underscores the lack of water quality assessments in the study area, which is the main way to identify nonpoint source pollutants in the water system. Stormwater information would also include infrastructure inventories, such as retention ponds, culverts, or storm drains, which help manage and control runoff. Knowledge of the existing infrastructure is crucial for assessing changes in land use patterns, system capacity and conditions, and potential sources of pollutants.

9. **Invasive plant inventory & monitoring.** There is a lack of comprehensive data on the presence and spread of invasive species of plants, making it challenging to assess impacts on water quality and water flow rates (IGAP Proposal, 2011). One inventory was conducted in 2013 by the Western Alaska Landscape Conservation Cooperative, which noted invasive species risks near all three communities. The US Fish and Wildlife Service, which manages the Alaska Peninsula Wildlife Refuge, have not completed any invasive plant surveys in the study area (Alaska Region Terrestrial Invasive Plant Management Strategy, 2022).
10. **Landfill, dump site, and tank farm assessments.** All three communities within the study area have active and inactive private or municipal landfills, dumpsites, and tank farms (SWIMS, 2023). Beyond their respective Waste Erosion and Assessment Review (WEAR) reports, there have been no detailed assessments completed of current landfills or the abandoned dumpsite at Chignik Lake (IGAP Proposal, 2011; Chignik Climate Resilience Symposium, 2023). Without more thorough assessments, there is lack of information regarding the presence of contaminants that may be leaching from the sites into the watershed. It is also unknown where contaminants may be leaching from and the rate at which it may be occurring.

List of Acronyms

ACWA	Alaska Clean Water Actions
ADEC	Alaska Department of Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ANTHC	Alaska Native Tribal Health Consortium
AWQMS	Ambient Water Quality Monitoring System
BBAHC	Bristol Bay Area Health Corporation
BBNA	Bristol Bay Native Association
BBNC	Bristol Bay Native Corporation
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GGS	Geological & Geophysical Surveys Division; Alaska Department of Natural Resources
HUC	Hydrological Unit Codes
IGAP	Indian General Assistance Program
NWI	National Wetlands Inventory
NWQMC	National Water Quality Monitoring Council
SCERP	Small Community Emergency Response Plan
SPAR	Spill Prevention and Response
SWIMS	Solid Waste Information Management System
SWMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
WEAR	Waste Erosion Assessment and Review
WQP	Water Quality Portal
UAF	University of Alaska Fairbanks
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey